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BUENAS PRÁCTICAS

Actuaciones Cofinanciadas

RECONSTRUCTION AND EXTENSION OF THE BINISSALEM
WASTEWATER TREATMENT PLANT
Agencia Balear del Agua y la Calidad Ambiental (ABAQUA)

Programa Operativo de Illes Balears

Año 2019

Fondo Europeo de Desarrollo Regional

RECONSTRUCTION AND EXTENSION OF THE BINISSALEM WASTEWATER TREATMENT PLANT

Basic project description.

Until the start of this action, the system for the waste-water disposal and treatment of the towns of Sencelles and Binissalem was limited to their capacity and no improvement had been carried out since 1994. Based on the projected population growth and the outdated state of its facilities, it was advisable to reshape and expand the wastewater treatment system through a more efficient and advanced clean-up process to deliver better returns, simpler maintenance and increased operational flexibility.

The project consists of a comprehensive reform, extension and improvement in treatment of the Binissalem Waste Water Treatment Plant (WWTP), which covers the municipality of Binissalem (central and industrial estate) and the municipality of Sencelles (nucleus). The project also includes the construction of a 3.250 m long barrel to drive the excess water, which is not acceptable to the lagoons until the Almadrà Torrent, as well as the emptying and cleaning of the evaporation and infiltration lagoons.

The new biological treatment comprising two biological reactors and two secondary decanters that must be highlighted; this also includes all the recirculation, purging and complementary sections. In addition, some WWTP buildings have been remodeled and adapted for partially different functions as they still could be seized.

The project was prepared by the *Agencia Balear del Agua y la Calidad Ambiental* (ABAQUA) and awarded the construction of the remodeling and extension of the **Binissalem WWTP**, with a total investment of EUR **3.016.772€** and ERDF assistance of EUR **1.508.386€**



With the increase of plant capacity, the maximum water flow rate to be treated has been increased by 120 %, 2.200 m³/day, which is **equivalent to a maximum population of 14.667 inhabitants**, whereas before only a population of 5.000 people could be served

Below, the arguments that make both projects are considered as Good Practices are presented, according to the criteria defined for these purposes.

Criterion 1. High dissemination among the beneficiaries and the general public.

This action has been widely disseminated through the various information and publicity measures developed. In particular, **all regulatory reporting obligations**, such as:

Among the **compulsory measures** implemented in accordance with Community law, the following should be noted:

During the execution of the work, a **temporary information poster** on the project was put in place to comply with the rules on information and communication measures and that it was replaced by a **permanent plaque** affixed to the site at the entrance to the premises as laid down in the Implementing Regulation as an investment with a public contribution of over EUR 500.000.



This visibility has been reinforced by the information contained in a specific section of the **ABAQUA website** about the different projects it promotes under the 2014-2020 ERDF Operational Programme of the Balearic Islands, including the EDAR de Binissalem



ABAQUA Website dedicated to informing about the projects co-financed by the ERDF

<http://abaqua.es/es/esdepuracion/fondos-europeos/>

In addition, **additional information and publicity measures** have been carried out which have increased the dissemination of the project as well as the visibility of the ERDF contribution to the project. In this regard, the following actions should be highlighted

Various **information notices** have been produced in the news section of the website of the Balearic Islands Government and **news from various media** of the Balearic Islands on the launch of the action, its progress and results.



GOVERN ILLES BALEARS

Dia i hora d'emissió: 23/08/2017, 13:50
Tipus de comunicat: Nota Informativa
Emissor: Presidenta

LA REMODELADA ESTACIÓ DEPURADORA DE BINISSALEM DÓNA SERVEI A MÉS DE 14.000 HABITANTS

L'obsolescència i l'antiguitat de la instal·lació feien necessària aquesta remodelació, que va començar l'abril de 2015
S'han netejat i tractat adequadament els fangs que s'havien acumulat a les llacunes durant vint anys

La presidenta del Govern de les Illes Balears, Francina Armengol, acompanyada del conseller de Medi Ambient, Agricultura i Pesca, Vicenç Vidal, ha visitat les instal·lacions de l'estació depuradora del poble de Binissalem, un cop ha acabat el projecte de remodelació i ampliació. La nova infraestructura duplica el cabal màxim d'aigua que es pot tractar a diari, la qual cosa permetrà donar servei a més de 14.000 habitants dels municipis de Binissalem i Sencelles.

Actualitat Fons europeus en equi De Internet Explorer

Remodelación y ampliación del EDAR de Binissalem

Con el aumento de capacidad de la planta, se incrementa un 120% el caudal máximo de agua que se puede tratar: 2.200 m3/día, cantidad equivalente a una población máxima de 14.667 habitantes, mientras que antes sólo se podía dar servicio a una población de 5.000 personas.

En la depuradora, que fecha de 1994, no se había hecho ninguna intervención. La obsolescencia y la antigüedad de las instalaciones hacían necesaria esta remodelación, que empezó en abril de 2015 y que ha comportado una inversión de 3.655.269,62 € (con el IVA incluido) de los cuales el 50% han sido cofinanciados con los Fondos Europeos de Desarrollo Regional (FEDER).

De las intervenciones, hay que destacar el tratamiento biológico nuevo, que consiste en dos reactores biológicos y dos decantadores secundarios; se incluyen también todos los bombes de recirculación, purga y secciones complementarias. Además, se han remodelado algunos edificios de la depuradora, que se han adaptado para funciones parcialmente diferentes, ya que todavía se podían aprovechar.

Con respecto a las lagunas, se han limpiado los sedimentos de barros que se habían depositado en el fondo durante estos veinte años de funcionamiento y se les ha hecho el tratamiento adecuado. Esta actuación ha permitido aumentar la capacidad de las lagunas y mejorar el estado. Del agua depurada que se aboca a las lagunas una parte se evapora y la otra se infiltra.

Imatges adjuntes



Francina Armengol i el consell Vicenç Vidal rebent les explicacions tècniques sobre la remodelació.

News about the new WWTP in Binissalem

This high impact has been facilitated by the **institutional visits** to the state of play of the action, highlighting that made in August 2018, following the completion of the work, which was attended by a delegation of the Government, led by the President of the Government de les Illes Balears and the Minister for the Environment.



Another dissemination channel is the **mapping system** for co-financed projects of DG Funds, located on its website (http://www.caib.es/sites/fonseuropeus/ca/portada_2016/?campa=yes). This application on line, which is accessible to anyone, makes it possible to visualize, not only the geographic location of the investment, but also systemized data on the name, field of intervention, co-financier, EU aid, total eligible cost and even pictures of the investment made.

In the **European Funds Information Bulletin of the Balearic Islands** in April 2019 edition, it has also included a reference to the project and the ERDF contribution in its implementation, paying particular attention to the results achieved through this investment

LA REMODELADA ESTACIÓ DEPURADORA DE BINISSALEM, COFINANÇADA AMB FONDS FEDER, DONA SERVEI A MÉS DE 14.000 HABITANTS EN TÈRMS DE POBLACIÓ EQUIVALENT



Les instal·lacions de l'estació depuradora de Binissaleu (Mallorca), un cop ha acabat el projecte de remodelació i ampliació, ha permès duplicar el cabal màxim d'aigua que es pot tractar a diari, la qual cosa permetrà donar servei a més de 14.000 habitants en termes de població equivalent dels municipis de Binissaleu i Sencelles.

Aquesta es una intervenció molt necessària i llargament reivindicada que ha resol el problema que s'han produït en el passat i que, a més, ha servit per netejar la llacuna i recuperar-ne la capacitat.

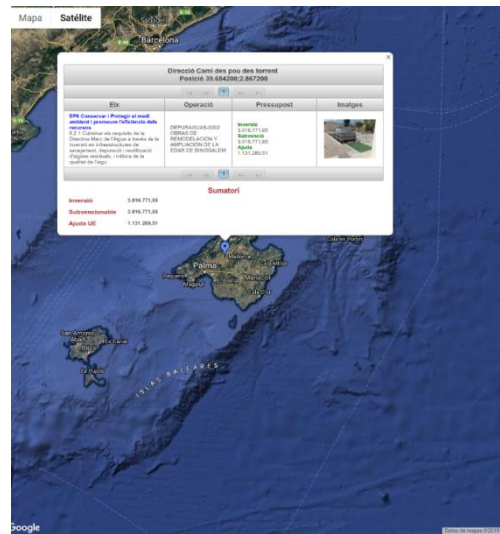
Amb l'augment de capacitat de la planta, s'ha incrementat un 120% el cabal màxim d'aigua que es pot tractar, 2.200 m³ diaris, equivalent a una població màxima de 14.667 habitants, mentre que abans només es podia donar servei a una població de 5.000 persones.

A la depuradora, que data de 1994, no s'havia fet cap intervenció. L'obsolescència i l'augment de les instal·lacions feien necessària aquesta remodelació, que va començar l'1 d'octubre de 2015 i que ha comportat una inversió de 3.055.269,60 € (amb IVA inclòs) dels quals el 50 % han estat cofinançats amb els Fons Europeus de Desenvolupament Regional (FEDER), en el marc del Programa Operatiu 2014-2020 de les Illes Balears.

De les intervencions, cal destacar el tractament biològic nou, que consisteix en dos reactors biològics i dos decantadors secundaris; s'hi inclouen també tots els bombes de recirculació, purga i seccions complementàries. A més, s'han remodelat algunes edificis de la depuradora, que s'han adaptat per a funcions parcialment diferents, ja que encara es podien servir.



Però que fa a les llacunes, s'han netejat els sediments de fang que s'han dipositat al fons durant aquestes vint anys de funcionament i s'hi ha fet el tractament adequat. Aquesta acció ha permès augmentar la capacitat de les llacunes i millorar-ne l'estat. De l'aigua depurada que s'aboca a les llacunes, una part s'evapora i l'altra s'infiltra.



European Funds Information Bulletin of the Balearic Islands (Nº 5, April 2019)

Picture of the system for locating co-financed projects in the Balearic Islands

Information about the project and its co-financing by the ERDF has also been disseminated through other information channels. In this way, **informative leaflets** have been designed with the most relevant data on the investment and the UE contribution, which have been distributed by the different points foreseen in the Communication Strategy for the 2014-2020 ERDF and ESF OP of the Balearic Islands.



Informative leaflets WWTP Binissalem

Criterion 2. Incorporating innovative elements.

As an innovative element, it highlights the introduction of **innovative biological treatment, which provides for the installation of two secondary biological reactors and two secondary decanters**. This means that the plant is used by micro-organisms to remove the existing

contamination and thus to restore the water to the stream by generating the minimum environmental impact, significantly improving the quality of purified water.

With regard to the lagoons, the mud sediments that had been deposited in the fund for more than 20 years have been cleaned up or have been treated appropriately. This has made it possible to increase the capacity of the gaps and improve the state of the water, which is said to be close to the gaps, as one party evaporates and the other is infiltrating.

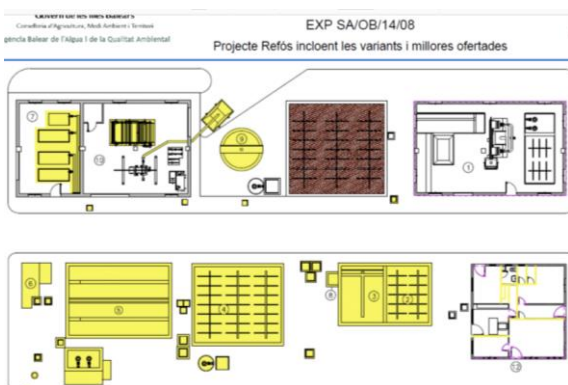


Control elements and control devices established at the Binissalem WWTP

Criterion 3. Adecuación de los resultados obtenidos a los objetivos establecidos.

The **results obtained with the project are adapted to the objectives set**, in compliance with the Water Framework Directive. In particular, the entry into operation of the enlarged and reformed treatment plant will improve water quality and significantly increase waste water treatment capacity, reaching **2.200 cubic meters per day**.

The system used will make costs cheaper and benefit the environment, resulting, on the one hand, in significant **economic savings** and, on the other hand, in a **reduction of CO₂ emissions** from electricity costs, as biological waste water treatment uses bacterial processes to dispose of waste, resulting in efficient, economic and ecological use, by not using chemical elements or requiring the use of electricity or other fuels to feed the sewage plants.



Scheme of the operation of the Binissalem WWTP

In this perspective, the results achieved suggest that the objectives set have been achieved. In addition, it is important to stress the great advantage **of reducing polluting discharges to the environment**, since the fluids produced are purified and therefore do not pose any risk to the ecosystem. In parallel, purified water can be used for other possible alternative uses.

Criterion 4. Contribución a la resolución de un problema o debilidad regional

Among the main water challenges facing the Balearic Islands is that of taking care of existing aquifers in their territory. Then, it is essential, among other things, to prevent pollution by nitrates. In this sense, one of the factors behind this problem stems from badly cleaned water discharged into streams for many years and which have been infiltrated in the subsoil



Aerial image of the Binissalem treatment plant

The improvement of sanitation and wastewater treatment infrastructure is therefore a priority. In this regard, there is a need to strengthen investment in the construction and rehabilitation of WWTP, collector sewers, interconnectors, etc., so as to ensure the treatment of waste water. The aim is to increase the coverage of the service and to comply with the requirements of the Water Framework Directive.

Criterion 5. High coverage of the target population

The **additional population served** by better wastewater treatment through investment in the treatment plant is **14.677** in terms of population equivalent, covering the municipalities of Binissalem and Sencelles.



Criterion 6. Taking into account the horizontal criteria of equal opportunities and environmental sustainability.

With regard to **sustainable development**, the project has a clear positive environmental impact, since it contributes to solving the problem of waste water treatment and the use of sludge arising from the process.

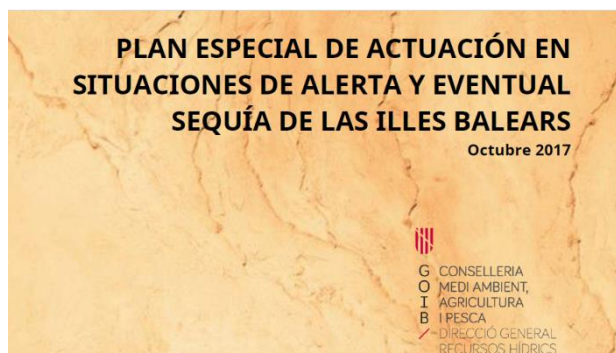
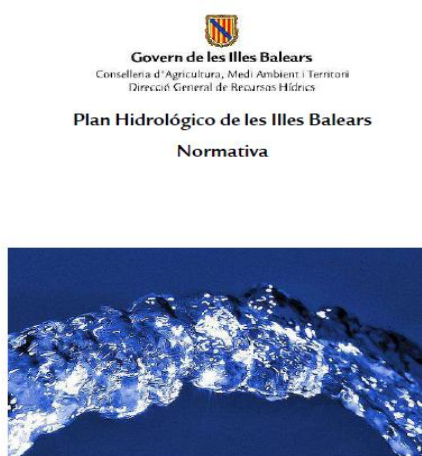
In addition to a necessary reality, the purification of waste water is also a legal obligation, which has a direct impact on the quality of water. Indeed, this investment in the Balearic Islands is making progress towards meeting the objectives set out in *the Water Framework Directive*.

However, the environmental improvement of purification involves not only reducing polluting discharges to the receiving channels, but also raises good collateral improvements as a result of the scrubber process. In fact, there is a cycle of energy, which allows for a number of forms of use, such as the reduction of pollution, energy production by cogeneration, agricultural production, etc.

From the point of view of **equal opportunities** between women and men, due to the characteristics of the project, there is no direct impact in this area. In any case, it should be noted that the use of sexist language has been avoided throughout the project management cycle.

Criterion 7. Synergies with other public intervention policies or instruments.

The work is part of the **Hydrological Plan of the Balearic Islands**, which was approved by the Council of Ministers on 17 July 2015



This project leads to the fulfillment of the requirements of the **Water Framework Directive** through investment in wastewater infrastructure, purification and reuse of wastewater, and improved water quality.

In this regard, it is also complementary with a number of other actions that ABAQUA is developing in order to improve the sewage treatment systems as well as to comply with the requirements of the Water Framework Directive.

In the same way, this action is consistent with the objectives of the **Special Plan for Action on Alert and possible drought in the Balearic Islands (PESIB)**, approved by the Government on 15 December 2017. These objectives relate to ensuring the provision of water to the population with sufficient quality and avoiding or minimizing the negative impact on aquatic ecosystems, groundwater bodies and the economic activities themselves.

In addition, the investment carried out complements those set out in **Plan to promote sustainable tourism in the Balearic Islands**, which includes the development of water cycle optimization projects, such as improvements to the drinking water network, purification and desalination and the reuse of water.

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