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**Water & Energy Advanced  
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# Water and Energy Advanced Management for Irrigation (WEAM4i)

WEAM4i is a European project which started officially on November 1<sup>st</sup> 2013 with a duration of 42 months (2013-2017). The total cost of the project is around 7.6 M€, with an EC contribution of 5.2 M€.

The consortium of the project is made up of 17 partners coming from five European countries: Spain, Germany, Portugal, Netherlands and France.

## OBJECTIVE

The main concept to be demonstrated is the water demand-side management according to available energy offer. In line with it, the main objectives for the project are:

- Demonstrate an innovative **water & energy smart grid for irrigation**: introducing demand-side management and matching it with available energy offer (often renewable), thanks to the water storage capability and the 'near- almost elastic' demand from users.
- Demonstrate **innovative techniques for resource efficiency at local level**: to savewater in the local irrigation systems (and consequently energy), to improve the m<sup>3</sup>/kwh ratio and the minimisation of the operational cost of water supply infrastructures.
- Develop an **innovative integration approach**: an ICT/cloud platform based on a Service Oriented Architecture (SOA), for hosting weather forecast, remote sensing data services and the applications while, at field level, the existing local irrigation systems will remain.

## THE CHALLENGE

Agriculture sector is accountable for 30% of the total water consumption in Europe, but reaches up to 70% of total water consumption in several EU southern countries

In recent years, important water savings have been achieved without taking care of energy aspects, resulting in some cases on a significant increase in energy consumption. Thus, the new challenge for the irrigation sector is to minimise the energy costs.

## EXPECTED IMPACTS

- Improvement of the resource efficiency (both in water and energy), while reducing the operational costs of the irrigation systems, thus improving the competitiveness of the irrigated agriculture
- Facilitate the integration of renewable energy sources into the grid
- Overcome the current barriers that prevent the water users to access the interactive energy market.
- Creation of market opportunities for WEAM4i innovations, inside and outside Europe, thanks to the open and interoperable ICT platform for irrigation advanced services, extensible to applications, services, irrigation areas and users.

## DEMONSTRATION SITES

Full-scale demonstration activities will be performed in 3 EU countries (Portugal, Spain and Germany) covering a wide range of landscapes and crop types, from southern to central EU. The locations of the demonstration sites are:



**Portugal:**  
Associação de Beneficiarios da Obra de Rega de Odivelas and Associação de Beneficiários do Roxo (Alentejo: 18.000 ha)



**Spain:**  
Comunidad General de Regantes del Canal de Bardenas (Aragón and Navarra: 80.000 ha)



**Germany:**  
Norwest Lower Saxony irrigation area (Lower Saxony: 300.000 ha)