



# **Pablo de Olavide University**

## Success story



# Pablo de Olavide University

## PROJECT

Certification of the Installation and Energy Efficiency Management System of the UPO, managed with PowerStudio and certified according to the UNE-EN ISO 50001 Standard.

## SECTOR

Public Universities

## CLIENT

(UPO) Pablo de Olavide University, Seville

## Information of interest

Energy Management at the installations of the UPO

## Most significant results

### SAVINGS

€200,000 per year

### INVESTMENT

€150,000 per year

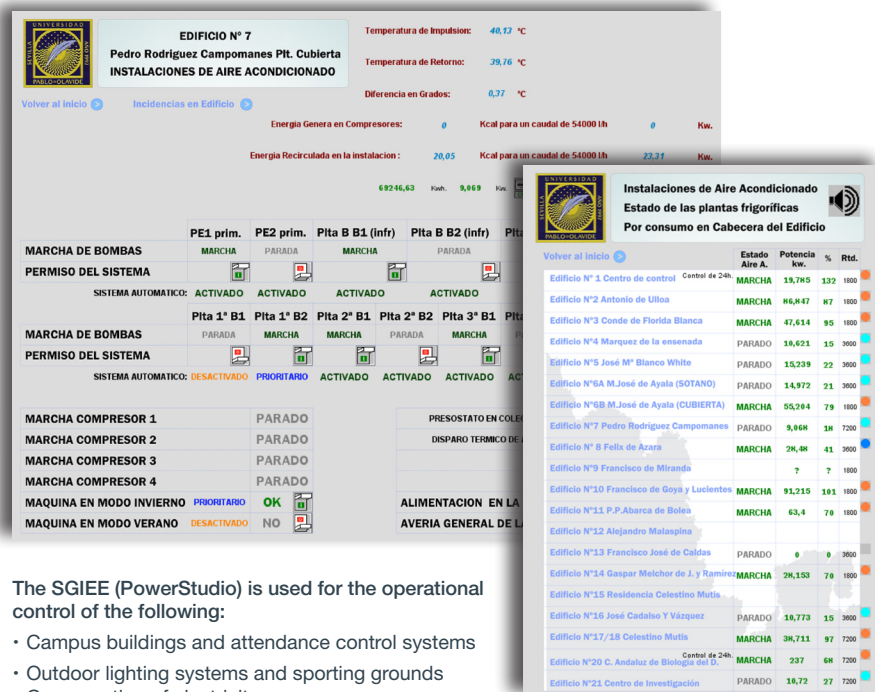
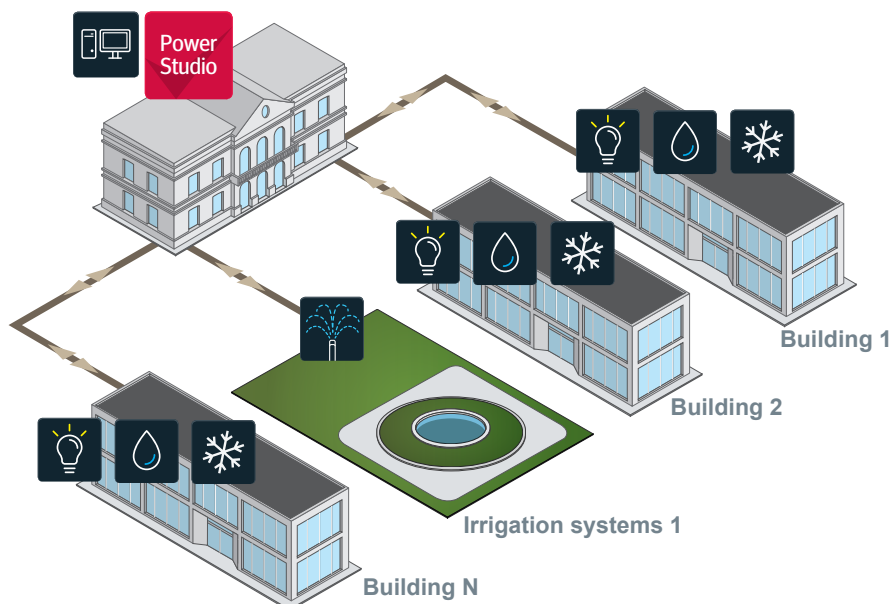
### PAYBACK PERIOD

5 years

## Partners / Acknowledgements

Thanks to the agreement signed between the UPO and CIRCUTOR, we shall keep the measurement and control elements of the installations of the UPO up-to-date at all times, ensuring that the latest versions of the PowerStudio application are installed.

## Main consumption control



The SGIEE (PowerStudio) is used for the operational control of the following:

- Campus buildings and attendance control systems
- Outdoor lighting systems and sporting grounds Consumption of electricity
- Air conditioning system and drinking and irrigation water control
- Operational control of the DPCs (data processing centres) of the UPO

## Initial situation

Energy demand management is starting to become a vital element of the energy policies of organisations and, in particular, of Spanish universities. The reduction of energy demand is a very economical way of achieving the objectives of reducing the costs of energy supply, minimising the environmental impacts and increasing energy safety.

Taking these premises into account, since the foundation of the Pablo de Olavide University (UPO) in Seville in 1997, the Infrastructures, Maintenance and Energy Efficiency area (IMEE) and Computing and Communications Centre (CIC), led by the administration of the UPO, have been increasingly concerned about establishing quality Energy Efficiency management mechanisms for the installations and buildings of the campus, as well as raising awareness on "shortages in the availability of energy and its environmental impact", with the participation of the whole university community in achieving these objectives.

In turn, the infrastructures of the University have grown from 1997-2015 (buildings and installations used for teaching, research and administrative management), which require the efficient management of the matters described in these good practices (management of light, drinking and irrigation water and air conditioning systems, attendance control systems, fire alarms, fire extinguishing systems, surveillance systems, etc.).

## Objectives

The main objective is to optimise the consumption of energy of the installations of the UPO, based on:

- Raising awareness on the availability of energy and its environmental impact.
- Improving the use of electrical energy and energy obtained from other sources.
- Reducing, controlling and structuring internal consumption.
- Monitoring and controlling electrical energy and drinking water billing.

## Details of the Solution

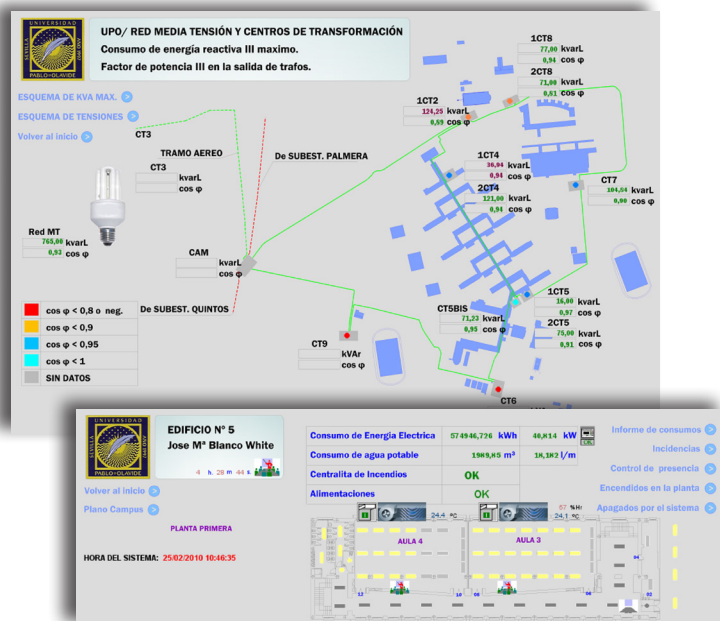
The "PowerStudio" application, i.e., the "germ" of the SGIEE, was implemented as a result of the collaboration with "CIRCUTOR", which supplied the units to be installed and the management software, as well as the contributions and experience in designing the infrastructures, maintenance and energy efficiency area of the UPO.

The installation management software is of the open type and manages the communications with the analyzers and system peripherals, so that it can be adapted to the needs of each installation.

In 2005, the SGIEE was powerful enough to achieve the current results, with the change in technologies of PowerStudio for the SGIEE, based on a multi-user Web application, as well as the changes associated with the improvement of communication technologies (Communications network of the UPO expanded to 10 GB).

The serial converters that were initially installed were replaced with units that use IP technology. This allowed us to excel in field element control.

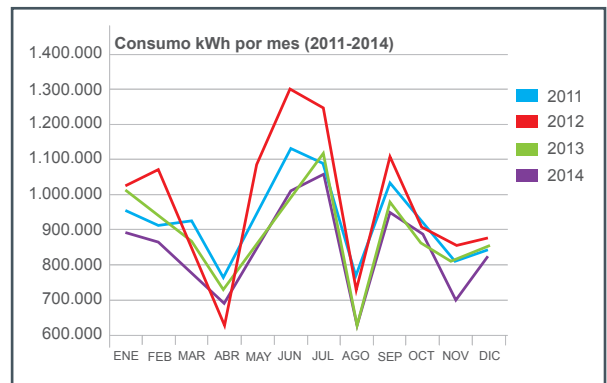
Over the 2014-2015 period, we have worked on the requirements of the UNE-EN ISO 50001 Standard, with the purpose of implementing them in our SGIEE (Policies, Objectives and Goals, Action Plan, Energy performance indicators, processes and procedures, documentation and log management and control, training and awareness, internal audits and management reviews, improvement plans).



## Results

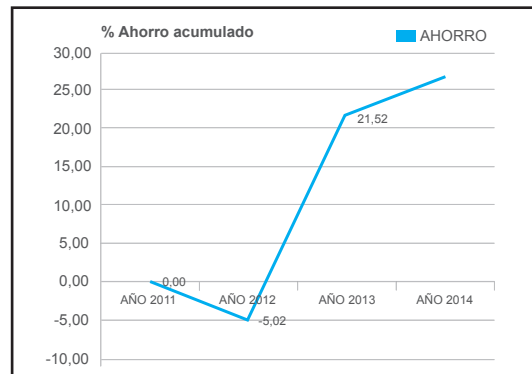
An energy audit of the UPO was performed in 2011. The audit information was used to establish the Baseline of the reference measurements. The Baseline is currently in the re-definition phase.

- Graphic with the evolution of electricity consumption in the UPO:



## Most significant results

SAVINGS, INVESTMENT, AMORTISATION, PROFITABILITY, etc.



- The cumulative savings from 2011 to 2014 were 26.47 %, compared to the 2011 Reference Baseline.
- It is worth mentioning that phases II and III of the Library were started in 2012, which led to high monthly consumption figures. The consumption of this building was further reduced years later by implementing more exhaustive controls.
- This has resulted in savings of approximately 200,000 euros per year.

- Preventing the costs of using energy, including the corresponding estimates in the annual budgets of the UPO.

To achieve these objectives, the Pablo de Olavide University is currently operating an Installation and Energy Efficiency Management System (SGIEE), certified by Bureau Veritas in June 2015, in compliance with the requirements of the ISO 50001:2011 Standard for the activities described in the following scope:

"The Installation and Energy Efficiency Management System covers the Management of the campus installations of the Pablo de Olavide University in Seville, which are used for Teaching, Research and Administrative Management".

This initiative is part of the Strategic Plan, which specifically includes the University's objective to "become a leader in the preparation and implementation of ecological preservation policies and programmes, such as energy conservation and saving, with the purpose of creating a biodiverse campus of

international renown", as well as "implementing energy efficiency and saving policies and fostering the use of renewable energies in the campus". Lines of action 6.2.4 and 6.2.5.

## Most significant results

SAVINGS, INVESTMENT, AMORTISATION, PROFITABILITY, etc.

- The cumulative savings from 2011 to 2014 were 26.47 %.
- Anyone can check the information of the SGIEE. Log in with user/ password: anónimo/anónimo. More information at <https://www.upo.es/infraestructuras>.
- With an ongoing investment of 150,000 euros per year, the aim is to improve infrastructures and installations, with the purpose of achieving the required levels of reliability, availability, zero interruptions and safety, with a 5-year payback period.
- This has resulted in savings of approximately 200,000 euros per year, which are invested to improve the installations. ▀

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