



Optimisation of the electricity tariffs in municipal buildings

AREAC – Agência Regional de Energia e Ambiente do Centro Portugal

Summary

This project was developed in 5 counties of AREAC's intervention area, namely, in Vila Nova de Poiares, Figueiró dos Vinhos, Pedrógão Grande, Miranda do Corvo and Góis.

The main objectives were to reduce the costs of electricity in municipality buildings by adjusting the electricity contracts to the consumer needs and identifying Rational Use of Energy (RUE) opportunities, in order to achieve energy savings.

On average, the economic savings expected for each municipality are about € 10.000/year.

End-user area	Target Audience	Technical
New buildings	Citizens	Energy efficiency
Refurbishment of buildings	Households	Heating
Transport and mobility	Property owners	Cooling
Financial instruments	Schools and universities	Appliances
Industry	Decision makers	Lighting
Legal initiatives (regulations, directives, etc)	Local and regional authorities	CHP
Planning issues	Transport companies	District Heating
Sustainable communities	Utilities	Solar energy
User behaviour	ESCOs	Biomass
Education	Architects and engineers	Wind
Other	Financial institutions	Geothermal
	Other	Hydro power
		Other

Context

AREAC, the Centre Region Energy and Environmental Agency, is a SAVE agency which has as founder members the Municipalities of Cantanhede, Castanheira de Pêra, Coimbra, Figueira da Foz, Figueiró dos Vinhos, Góis, Lousã, Miranda do Corvo, Montemor-o-Velho, Pedrógão Grande, Penela and Vila Nova de Poiares.

One of the first tasks asked to AREAC from the associated members was to help them to reduce their energy bills.

In this context, AREAC understood that there was a great potential to reduce costs through the analysis of electricity contract conditions and optimising the electricity tariff according to the consumer reality.

AREAC began this work in 5 counties of the region - Vila Nova de Poiares, Figueiró dos Vinhos, Pedrógão Grande, Miranda do Corvo and Góis.

Objectives

The main objectives were to reduce the costs of electricity in municipality buildings by adjusting the electricity contracts to the consumer needs and identifying Rational Use of Energy (RUE) opportunities, in order to achieve energy savings.



Process

The project includes the following tasks:

- collect and analyse each building's electricity invoices and contracts for a year period;
- identify situations of reactive energy payment, great differences between contracted capacity and needs, contracts where no energy is consumed, etc.
- analyse the most appropriate tariff for each case through a software (data sheet) developed by us to simulate different options and help to achieve the most indicated;
- develop a report for the municipality indicating, whenever needed, how to intervene and the opportunities to implement RUE measures;
- follow-up the implementation of the proposed measures and introduce RUE concepts to the building users.

Financial resources and partners

This project was carried out by AREAC. Each one of the municipalities involved committed to a yearly payment of half of the economic savings during the same period. The project cost in total € 655 833 in energy investments.

Results

In this project, AREAC analysed and reported the energy consumption of 391 municipality buildings in 5 counties of the region.

The following data table contains the economic savings expected for one year in each municipality, based in the energy data from 2003.

Municipality	Year 2003			After implementation of the proposed measures	
	Number of buildings	Energy consumption (MWh)	Energy costs (€) total	Economic savings (€)	Economic savings (%)
Figueiró dos Vinhos	89	1.480	149.515	16.251	11
Góis	106	917	110.192	4.478	4
Miranda do Corvo	75	1.911	175.326	13.800	8
Pedrógão Grande	53	339	45.474	4.200	9
Vila Nova de Poiares	68	1.955	175.326	9.915	6
Total	391	6.602	655.833	48.644	8

The introduction of some RUE measures in these buildings is also foreseen, which shall lead to economic savings and especially energy savings.



Lessons learned and repeatability

The results obtained with this project were very positive. Local authorities became aware of the economic impacts driven by the implementation of the proposed measures. However, after delivering the report it is very important to accomplish the implementation phase in order to assure that it will not be forgotten.

The project has very high repeatability in all AREAC associated municipalities.

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