



First municipality of Oporto's Metropolitan Area to replace the entire street lighting infrastructure with LED technology

Valongo Municipality

GOALS

Valongo municipality, the 25th Portuguese county with higher population index, around 100.000 inhabitants - had about one third of the luminaires turned off due to financial reasons.

The challenge was to restore the street lighting properly, giving back quality and safety to the inhabitants, achieving energy goals and sustainability, without requiring an investment higher than the municipality could support.

Project implemented in 2018.



TESTIMONY

"Through the "ECO.AP Program"¹, it was possible to replace with LED technology the entire traditional street lighting system, gaining energy efficiency and, consequently, savings.

Thus, so we were able to finally light the entire county, turning on all luminaires, addressing one of the inhabitant's biggest concerns, increasing the feeling of safeness, with an innovative, economic and environmentally friendly solution.

The project covers all the parishes of the Valongo municipality and was developed with EDP Comercial as an ESCo² partner, and with ARQUILED, as a technology partner, based on energy savings, with long term duration, allowing a significant reduction of the monthly energy bill while renewing the installed luminaires.

LED technology ensures longer life, less maintenance costs and less CO₂ emissions.

In total, this investment represents about 7.7 million euros that will be paid with the savings generated, and the municipality will not have to spend its own funds.

From now on we spend less, save more, and are surely an example for all municipalities in Portugal."

José Manuel Ribeiro
(Mayor of Valongo Municipality)

¹ Energy Efficiency Program in Public Administration, launched by the XVIII Constitutional Government through Resolution of the Council of Ministers no. 2/2011, of January 12.

² ESCo - Energy Services Company

INSTALLED SOLUTION

The proposed solution was based on the 100% replacement of the traditional street lighting system with LED luminaires.

The project is operated under a contract with an ESCo partner and is based on long-term energy saving principles in which the municipality will benefit from a significant reduction on the monthly energy bill and, on the other hand, upgrade the street lighting system, with the replacement of traditional lighting by LED technology, which by itself already allows consumption reductions. The intelligent flux regulation system was added to the installed solution optimizing the savings even more.

In a grid of approximately 16.000 luminaires, around 5.000 were switched off and were reactivated to increase the quality of life and the sense of security of the inhabitants, with an innovative, economic and less environmental impact.

The project covers all the parishes of the municipality of Valongo: Alfena, Ermesinde, Campo, Sobrado and Valongo.

MAJOR ESCo LED STREET LIGHTING PROJECT

This project is one of the largest street lighting projects in Portugal. A total of 15.901 luminaires installed, which 14.263 are road luminaires - ARQUICITY R1 EFFICIENCY - and the remaining 1.638 luminaires are decorative - HAMLET and OCTANS - representing 90% and 10%, respectively.

total nr. luminaires 15.901	nr. luminaires reactivated 4.754
total nr. inhabitants ⁴ 95.411	more SAFETY
annual savings 4.155 GWh	less ENVIRONMENTAL IMPACT

During the 16-year contract, energy consumption will be reduced by more than 60% with savings of 34%³ in the municipality's expenses with street lighting. The annual savings should reach 600 thousand euros, reaching 4.2 million kWh / year³.

The replacement of traditional lighting by LED luminaires is also reflected in the minimization of the environmental impact in about 1.495 tons of CO₂ emissions throughout the project.

INTELLIGENT MANAGEMENT SYSTEM



In this project, the ECCOS STREET intelligent management system was added to the ARQUICITY R1 EFFICIENCY luminaires, a system that allows additional energy savings and increases the efficiency of street

lighting systems and consequently reduces CO₂ emissions.

The ARQUILED ECCOS STREET allows the luminous flux regulation management that commands and controls the luminous intensity of the luminaires through a micro-cut system responding to the various challenges of road and urban lighting in Valongo municipality.



³ Total value for the 16-year contract, according to EDP Comercial - ESCo allocated to this project.

⁴ Data from the CCDR-N report available at http://www.ccdr-n.pt/sites/default/files/ficheiros_ccdrn/norte_estrutura_02_verao.pdf.

BENEFITS

The investment is fully supported by the ESCo partner - meaning "zero" investment from the municipality. The "ECO.AP" contract format allows Valongo municipality to settle the investment of 7.7 million euros with its own savings over the 16 years of the contract, without increasing public expenses.

It is also important to emphasize the reactivation of 4.754 luminaires that were previously switched off allowing to increase a sense of safety and well-being, of about 100.000 inhabitants of the county.

Besides the above-mentioned benefit, this project enables the municipality of Valongo:

- Benefit from a significant reduction in the energy bill;
- Renew and improve the quality of street lighting;
- Reduce costs from the first month - project with immediate savings;
- Guarantee quality of service throughout the contract, with maintenance included;
- Contribute to decarbonization by minimizing the environmental impact, with reduction of CO₂ emissions.



ARQUILED

Arquiled is a general LED lighting manufacturer, specialized in professional luminaires for street lighting, systems and services.

Headquartered in Mora-Alentejo, is a Portuguese industrial company, pioneering the market since 2005, that designs and develops its own products and solutions.

ARQUILED is committed to develop smart management solutions focused on reducing energy consumption and decarbonization, contributing to sustainable urban clusters.

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