Plaza Mayor paves the way for energy saving using voltage stabilizers

Sustainability

142 shops

Málaga, Spain

Energy Efficiency

KEY HIGHLIGHTS

- Even shopping centres with a low energy consumption can improve their efficiency, achieving energy and costs savings.
- Commitment and focus on improving energy efficiency can lead to finding innovative yet simple solutions that lead to great results.
- Installing voltage stabilizers allowed Plaza Mayor savings of around 16% of the annual consumption with a corresponding cost reduction of €11,700. This translated into a return on investment of two to three years.

SOLUTION

- Installing voltage stabilizers as a way to reduce the input voltage in the shopping centre and consequently generating energy and cost savings.

KEY NUMBERS

Savings of 16%
of the annual consumption

€11,700
saved per year

2/ 3 years
Return On Investment

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- Plaza Mayor
- Málaga, Spain
- 45,991m²
- 142 shops
- 2,957 parking spaces
- Sustainability

Abstract

A voltage stabilizer is an energy saving solution which provides a robust system to optimize the voltage supplied by the national grid. By reducing a building's energy consumption, they can also contribute to carbon emissions reduction and generate cost savings.

In 2016 at Plaza Mayor in Málaga (Spain), Sonae Sierra's shopping centre management team undertook feasibility studies and worked effectively with a supplier in order to gain investment approval for the purchase of voltage stabilizers at a reasonable cost. A year on, our analysis reveals that this technology has helped the shopping centre realise energy savings of 16 percent compared to 2015 figures. With a return on investment of two to three years, voltage stabilizers look to be an attractive energy saving solution and are now being considered across other Sonae Sierra shopping centres.

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Introduction

Sonae Sierra has set portfolio-wide objectives to reduce average electricity efficiency to below 400 kWh/m^2 (mall and toilet area) and maintain GHG emissions below 0.013 (tCO_2e/m^2 GLA), by 2020. Although Plaza Mayor is among the most energy efficient of Sonae Sierra's assets due to being a largely open-air design, the management team was aware that more could be done to optimise the building's energy performance, with positive outcomes in terms of cost savings and carbon reduction.

As they investigated new technologies which could help achieve these aims, the Plaza Mayor team found a supplier, AdvaVolt, which offered a voltage stabilizer system that could be effectively implemented in the shopping centre.

Background

All electrical and electronic systems are designed and manufactured to operate at maximum efficiency with a given supply voltage, called the nominal operating voltage. However, the voltage of the energy distribution system does not remain constant, showing considerable fluctuations in the nominal value, which in turn leads to a loss in efficiency and occasionally the impairment of the electrical and electronic systems in use.

Voltage stabilizers optimize the voltage supplied by the national grid and provide electronic equipment with a stable and secure power supply. The EU grid supplies electricity with an average voltage of more than 230V. The voltage optimizers had been designed for a voltage of 220V which is consistent with existing systems and equipment requirements, reducing the input voltage in the shopping centre and consequently generating energy savings.

Challenge

At the outset, the Plaza Mayor team had some uncertainties about the level of real savings that could be achieved using this new technology.

What is more, the investment costs associated with the voltage optimizers appeared too high. Obtaining information about energy savings guarantees would take a long time, and sufficient proof of an attractive return on investment would be needed to proceed with the investments. Was it worthwhile to go ahead?

Solution

The Plaza Mayor team proved that it was. By working closely with the supplier AdvaVolt, they prepared a feasibility study by taking energy measurements and estimating potential savings over the course of several months. They negotiated a way to obtain the equipment for lower prices than originally budgeted, and were able to submit detailed and convincing investment proposals to support the capital investment required.

With the approval granted, the voltage stabilizers were purchased and their installation was straightforward.

Voltage stabilizers installed at Plaza Mayor

The Plaza Mayor team have found that the savings associated to the project represent around 16% of the annual consumption before the project was implemented with a corresponding cost reduction of around €11,700, translating into a return on investment (ROI) of two to three years.

Plaza Mayor paves the way for energy saving using voltage stabilizers

Closure

Plaza Mayor has shown that installing voltage stabilizers can be a simple and cost effective way to optimise energy consumption. Having shared their experience with Sonae Sierra's Sustainability Office and other shopping centre teams, they have paved the way forward for Sonae Sierra to explore the possibility of rolling out this equipment to other assets within its portfolio.