Intelligent management system for street lighting
Case study
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PROJECT
Efficient street lighting management

SECTOR
Street lighting / Municipalities

CLIENT
Municipality

Information of interest
Regulated lighting
50% of the time

Energy consumed by street lighting
About 40% in most municipalities

Estimated savings
Between 30% - 35%

TARGET ACHIEVED:
Control of the lighting, faster reaction time in the event of an incident and improved preventive maintenance

Initial situation
Street lighting, including maintenance, represented 40% of a municipality’s total expenditures. This fact, together with the constant increase of electrical energy prices, made energy efficiency one of this entity’s main objectives. At the same time, the client was incurring constantly increasing maintenance costs due to the lighting, together with sporadic complaints of poor service from citizens.

Objectives
The main objectives of installing the intelligent street lighting management system were:
› Improved energy efficiency of the street lighting.
› Improved maintenance and related cost savings.

Solution
A suitable reduction in consumption was obtained, together with improved service with two types of actions:
1. First, the old mercury vapour lights were replaced with more energy efficient lights, specifically LED lights, without lowering performance.
2. Second, more efficient management of the points of light was obtained with the help of the CIRCUTOR CirLAMP intelligent street lighting system.

The CirLAMP system comprises CirLAMP NODES modules (Bi-level or 1...10V) installed at the points of light, and Cir-

“The intelligent lighting system reduces light pollution caused by the lighting network”
Results

The client was able to lower its electricity bill for lighting by 30% to 35% with the installation of the CirLAMP intelligent lighting system.

Another one of the results obtained with the CIRCUTOR intelligent street lighting control system was that the client was able to reduce response times to incidents because it had real time information on the status of the installation.

The CIRCUTOR CirLAMP system provided additional benefits such as:

**Faster response times to incidents:** With fault identification, it is possible to know the status of alarms such as, for example, burnt out lights, lights in blinking mode and open capacitors.

**Improved preventive maintenance that increases the useful life of the lights:** The unit made it possible to report the operating time of each light, which in turn enabled changing them when they were reaching the end of their useful life. The system reported an event to the manager when reaching the programmed maximum operating time.

LAMP MANAGER for managing the network of units, which is installed in the main electric panel.

The CirLamp NODES can make an installation more flexible and adaptable to each need, because it can be installed: in the base of the light, thereby saving on installation costs, or on the lamp post to increase the security of the installed unit. These modules communicate with the CirLAMP MANAGER via PLC, taking advantage of the electrical network. This is an advantage because there is no need to install extra communication cables or open conduits underground, thereby saving time and costs.

After the nodes are connected, the CirLAMP MANAGER gathers all the information and is able to manage each light point-to-point. The system enables controlling up to 4 time slots with different brightness levels according to the time of night and road conditions, which results in substantial energy consumption savings. Programming is controlled by an internal astronomical clock that automatically opens and closes the circuit according to the local sunrise and sunset (with the addition of the CirLamp 8180 input and output module).

Together with the efficiency of the brightness control, the CirLAMP MANAGER can send information by email to the head of maintenance according to the different event types, so that quick and effective action can be taken if a system anomaly occurs, thereby saving on maintenance costs.
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