Intelligent management system for street lighting

Case study

CIRCUTOR

Energy efficiency technology

Intelligent management system for street lighting

PROJECT
Efficient street lighting management

SECTOR
Street lighting / Municipalities

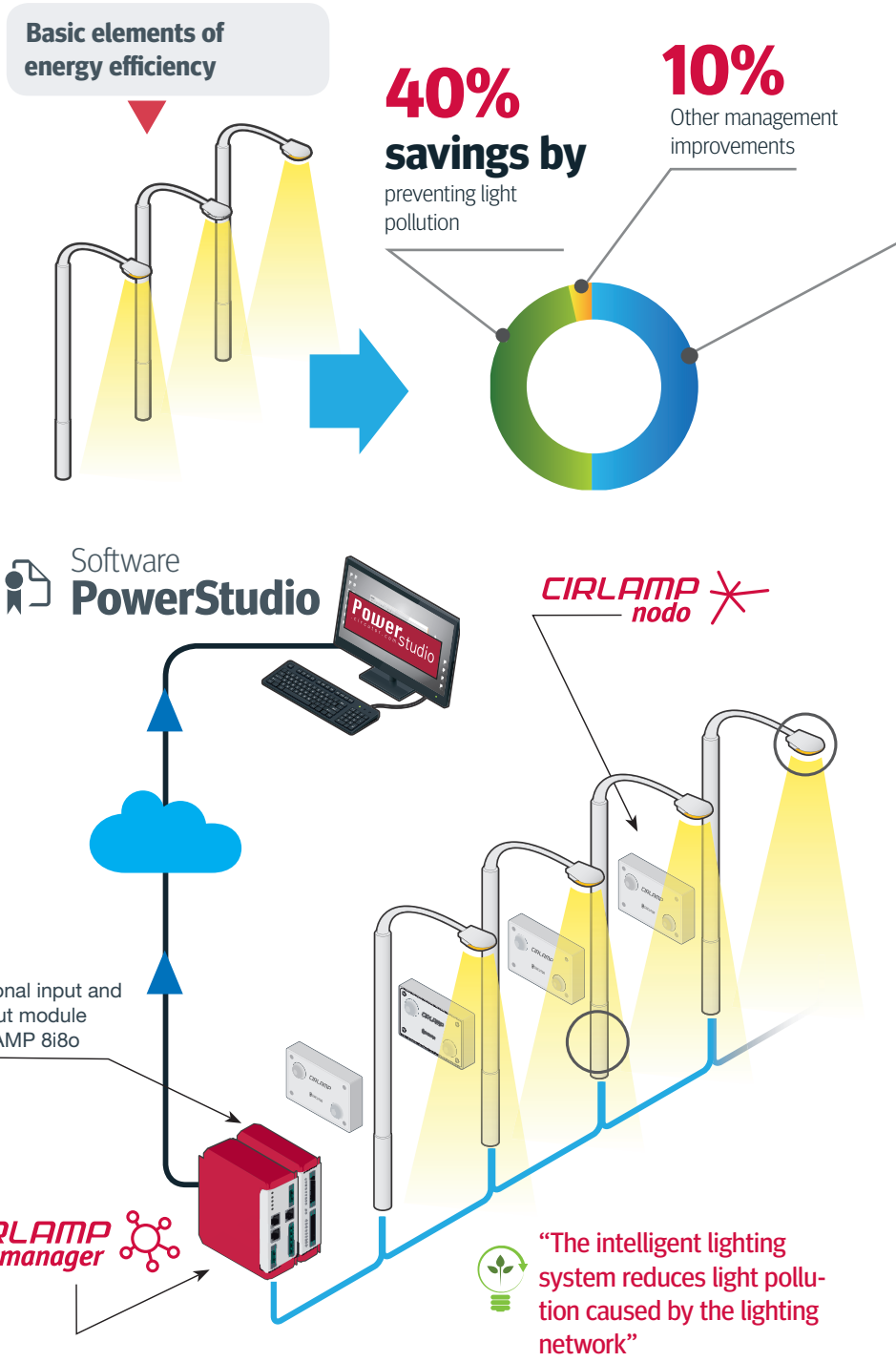
CLIENT
Municipality

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.

Other additional objectives were achieving global lighting management, and more efficient incident resolution.

Solution

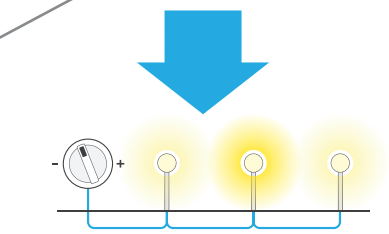
A suitable reduction in consumption was obtained, together with improved service with two types of actions:

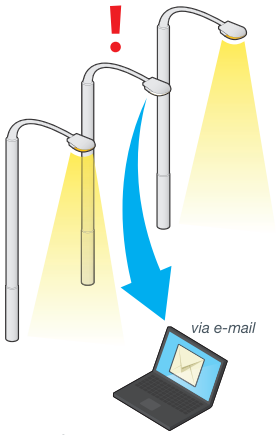
1. First, the old mercury vapour lights were replaced with more energy efficient lights, specifically LED lights, without lowering performance.

2. Second, more efficient management of the points of light was obtained with the help of the **CIRCUTOR CirLAMP** intelligent street lighting system.

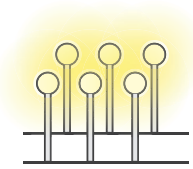
The **CirLAMP** system comprises **CirLAMP NODES** modules (Bi-level or 1...10V) installed at the points of light, and **Cir-**

50%
del tiempo
the power is regulated





Identification
of an incident in
real time



Street lighting
represents
40%
of the energy consumption in municipalities

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.

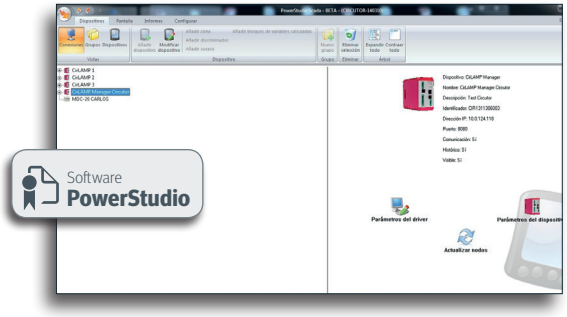
Another one of the results obtained with the **CIRCUTOR** intelligent street lighting control system was that the client was able to reduce response times to incidents because it had real time information on the status of the installation.

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.

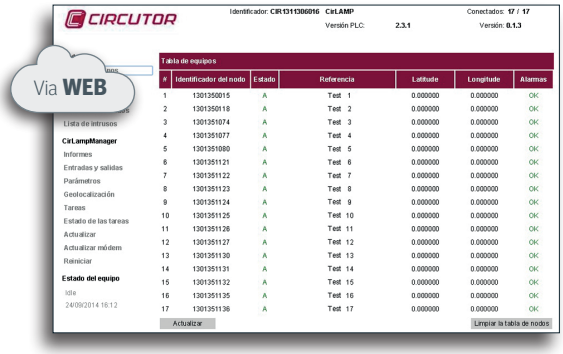
Improved preventive maintenance that increases the useful life of the lights: The unit made it possible to report the operating time of each light, which in turn enabled changing them when they were reaching the end of their useful life. The system reported an event to the manager when reaching the programmed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

› Unit edition screen



› Lighting status monitoring map

› Query via web for lighting management



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 8i8o** 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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