



Tychy, Poland

Modernization of Street Lighting Systems in Tychy

The APANET Green System Ltd. created and implemented a new system in the city of Tychy. This Smart Lighting Control System project involved the modernization of the 1150 lamps and replacement of 850 lighting poles and the wiring, on the 35 streets of Tychy. The project known as SOWA is an energy efficient street lighting program, which was supported by grants and loans by the National Fund for Environmental Protection and Water Management (NFEP&WM). Tychy is the only city in this voivodeship (Silesia), which qualified for this project.

According to Anna Warzecha, director of the Department of Municipal, Environmental Protection and Agriculture, the street lighting modernization has been carried out within a framework

of SOWA project, conducted and financed by the National Fund for Environmental Protection and Water Management. 1150 luminaires have been exchanged in years 2014-2015. Before the modernization the city had used the sodium lamps for street lighting. Old HPS lamps have been replaced with modern, environmentally friendly LED luminaires, which are able to reduce a power. The project was carried out in order to improve energy efficiency and reduce electricity consumption. These assumptions can be achieved by implementing a smart control system, that allows us to rationalize energy consumption – for instance, rationalization by adjusting the light intensity to the road conditions or weather. The system allows us to monitor the lighting network through the Internet platform, what reduces maintenance costs. Modern, energy efficient LED luminaires are environmentally friendly and impact on reducing CO₂ emissions significant.



The smart lighting improves also traffic safety. Appropriate lighting adjustments to current atmospheric conditions affect the comfort of pedestrians and other road users. Since January 2016 we began to carry out measurements, so we will be able to determine exactly what energy consumption saving, cost saving or CO₂ emissions reduction we will reach.

The Challenge

The City of Tychy was looking for a street lighting system to create savings associated with the reductions of energy consumption and CO₂ emissions, as well as meet the EU's ISO/IEC 13201 road lighting performance standard, while improving lighting performance on city streets.

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The Solution

The smart lighting control system, consists of:

- the LED luminaires of Polish producer ROSA
- the GLC142 luminaire controller from Apanet
- the Echelon SmartServer system controller
- the monitoring and controlling software from Streetlight.Vision

The smart lighting system can continually survey traffic and weather conditions and respond to any changes immediately – the weather sensors are not installed but the installation can be extended. Lighting failures can be pinpointed and even anticipated by the system; therefore maintenance efficiency and responsiveness can be improved. The entire system incorporates the LonTalk open communications network standard developed by Echelon, which allows interoperability among different manufacturers' products.

The LonWorks technology was key to this solution because it provides the following benefits:

- interoperability and openness
- wide access to the components working in open technology
- easy integration
- reliability of the components and the entire system
- free choice of vendors and manufacturers of products, choice of integrators, choice of service contractors

The Results

This modernization brings benefits to residents of the city – the project has significantly improved a traffic safety as well as an estimated 60% reduction in energy consumption. The system is environmentally friendly, because LED lamps now emit less harmful CO₂ by approximately 418 mg per year.

Another cost advantage, the ability to send technical information from the luminaire about its condition. In case of a failure, the information automatically flows to the panel, without a need to send diagnostician. A conservator arrives only once – to rectify the fault.

For more information visit <http://en.greensys.pl>.



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