



Bydgoszcz, Poland

Smart LED Streetlight Retrofit Project in City of Bydgoszcz Improves Safety and Energy Savings

Polish design, automation, and control systems provider APANET Green System deployed a LED streetlight network in Bydgoszcz, Poland for increased energy efficiency and improving overall safety. 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).

The Challenge

To create a more efficient, safer and more eco-friendly lighting environment, the city managers of Bydgoszcz decided to retrofit more than 7,000 street lights with LED luminaries and a control network—making it one of the largest Smart Street lighting retrofitting projects ever undertaken in this part of Europe. The



LED Streetlight network will be spread across approximately 400 streets utilizing a multivendor networked lighting control solution.

“The Bydgoszcz lighting project is a significant city improvement installation for Eastern Europe,” said Andrzej Lis, CEO of Apanet Green System. “It will vividly demonstrate how LED lighting, in conjunction with the right lighting control technology, can create more efficient, safe and eco-friendly street lighting at the citywide level.”

The Solution

The smart lighting system will continually survey traffic and weather conditions and respond to any changes immediately. 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.

Bydgoszcz selected Apanet Green System GLC142 ballast controller powered by Echelon's powerline networking technology; StreetLight.Vision control system; and LED luminaries. ENERGA Oświetlenie Ltd., also based in Poland, managed the system installation.

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

According to Przemysław Strzelec of Poland's Agencja Rozwoju Przemysłu (Industrial Development Agency), “the GLC132's greatest advantage is the ability to make groups of lamps within circuit and adjusting lighting levels to our actual needs. As a result, we were able to create several lighting schedules dedicated to factories in the zone.”

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The Results

The city hit a 40 percent energy cost savings goal. Bydgoszcz expects its street lighting project to reduce energy consumption and CO₂ emissions, as well as meet the EU's ISO/IEC 13201-road lighting performance standard.

According to Mr. Marcin Kubicki's the supervising inspector for the project, "As a result of this modernization of more than 7,000 luminaries the city of Bydgoszcz has the ability to control the intensity of light according to the actual needs. The light intensity is adjusted to the lighting class of a road. The system is able to adjust the light intensity to the current road conditions such as traffic flow, time of day or night, rain or haze."

In summary, according Mr Łukasz Meller an independent referent for Illumination, the changes have already brought significant savings to the city. These savings will continue to increase into winter, as the days become shorter days and less natural light forces an increase of the exploitation of street lighting. Thanks to the ability to control the power consumption we can reduce running costs. In the coming year we expect to reduce electricity consumption by 65 percent and energy consumption costs will decrease by 50 percent.

Another cost advantage, the ability to send technical information from the luminaries 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.

This modernization brings benefits also to residents of the city - the project has significantly improved a traffic safety. And the quality of the residents life increased - the system is environmentally friendly, because LED lamps now emit 65 percent less harmful CO₂.

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



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