LONMARK® INTERNATIONAL

CASE STUDY

Tarnobrzeg, Poland

Poland's Tarnobrzeg Special Economic Zone Shines with LonMark-Certified Smart Lighting System from APANET

The Tarnobrzeg Special Economic Zone EURO-PARK WISŁOSAN was established in 1997 to facilitate business investment in Poland. Businesses in the zone, which has a total area 1664.86 hectares (or more than 16.6 million acres) include Korean-based LG Philips LCD; ATS Stahlschmidt & Maiworm, a German car manufacturer; and various Polish manufacturers.

The Challenge

In 2013, the TSEZ needed to upgrade its existing lighting system, which consisted of 190 luminaires and two segment controllers. The biggest challenge was two-fold: install controllers in the existing lighting with no interference in the luminaries, and build a modern installation of smart control street lighting systems that cooperate with the existing lighting system.

The Solution

APANET Green System Ltd., established in 2010, is the first, and so far, the only Polish company producing open lighting control system devices certified by LonMark International. LonMark is a non-profit corporation supporting the testing and certification of products, people and companies supporting the ISO/IEC 14908 body of control networking standards and the Industrial Internet of Things.

APANET's GLC132 allows full control in the outdoor lighting systems of an entire city down to a single street lamp – on/off powering, dimming, as well as calculating electricity consumption of a single lamp. System GreenLight reduces lighting parameters whenever possible. The system is able to reduce lighting parameters or completely switch off some of the lamps. Such systems allow a significant reduction in electricity consumption, and therefore, contribute to substantial savings.

The system, easily implemented within existing lighting installations, allows:

- full control over all individual lamps from the control system's website
- the permanent energy audit of the whole network
- immediate information about possible lamps or any network's malfunctions
- division into groups (virtual circuits) and control-dependent
- counting the uptime of individual lamps and planning the light sources exchange

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."

APANET's GLC132 Lighting Controller

The Result

In the months since the installation, the Tarnobrzeg Special Economic Zone has realized a sharp reduction in:

- energy usage (by 45 percent)
- light pollution and CO_2 emission (about 166,6 mg CO_2)
- overall costs 30 058 PLN (7 331 EUR) a year
- driver incidents due to the ability to instantly inform them of any type of lighting network malfunction so it can be immediately fixed

"It's evident that upgrading our existing lighting system with APANET's LonMark-certified technology has been a huge benefit to the TSEZ," Strzelec added. "Not only was it easy to install, but it is has proven highly reliable, is easily accessible to all components and gives us the possibility of adapting the algorithms to current needs."

	The average energy consumption during 24h [kWh]		
	Before installation*	After installation**	Savings [%]
Peak hours	106,15	58,56	44,8
Off-peak hours	419,27	227,63	45,7

Data compiled basing on invoices for electricity in the period 12.03.2013- 22.04.2013* and 19.03.2014- 15.04.2014**.

LONMARK® INTERNATIONAL

550 Meridian Avenue
San Jose, CA 95126, USA
Tel: +1 408-938-5266
www.lonmark.org

Contact:

APANET Green System Sp. z o.o.
ul. św. Antoniego 7, 50-073 Wrocław, Poland
+48 71 783 29 30
+48 71 783 29 31
apanet@apanet.pl
www.greensys.pl