

Optimising street lighting

Energy-efficient street lighting cuts municipal costs by half!

A Covenant of Mayors 2016 Case Study

In a nutshell

The municipality of Jasło has replaced obsolete street lamps with sodium luminaires that contribute achieving significant cost and energy savings.



Background

Jasło, located in the South-Western part of the Podkarpackie region, counts almost 37,000 inhabitants. The city council, aware of environmental and climate challenges, started taking sustainable energy actions already in 1989 and joined the Polish Network “Energie-Cités”, a Covenant Supporter in Poland. Taking part in various national and international projects, such as the EURONET 50/50 MAX, Jasło has been very active in the field of sustainable energy. The city council invested in a micro-wind power plant for a kindergarden, supported the installation of solar collectors on five public and 558 private buildings and three sports facilities (in the framework of a project financed by a Swiss grant) and uses cogeneration in a biogas plant from a sewage treatment plant.

Jasło has had a municipal energy expert since April 2013 and joined the Covenant of Mayors in August 2015. The city drafted its low-carbon economy plan while finalising its Covenant of Mayors Action Plan linked with the municipality’s updated City Development Strategy for 2007-2020.

Energy-efficient street lighting

One of the key actions Jasło implemented with the aim to reduce CO₂ emissions save energy was the modernisation of street lighting, completed at the end of November 2014. The investment notably consisted in replacing obsolete luminaires which consumed a lot of energy and often failed, the removal of which was expensive and work intensive. 1,495 out of the 3,512 luminaires over 250W were replaced by new sodium luminaires with a capacity of 70, 100 and 150W - according to the requirements of PN-EN 13201, the European lighting standard in force in Poland since 2004. Partial or complete modernisation of the area covered almost the entire city, 112 lighting circuits in total, and each one has a cabinet with installed power regulators and automatic control and monitoring systems.

Jasło in numbers

Number of inhabitants: 36,260

Joined the Covenant of Mayors in 2015

Number of Covenant of Mayors signatories in Poland: 54



Investment and financing

The investment of almost €720,000 was co-financed from the priority programme OWL – Energy-efficient street lighting, which is the sixth part of the Green Investment Scheme carried out by the National Fund for Environmental Protection and Water Management (NFOŚiGW).

Results in energy savings

The replacement of luminaires resulted in a 30% reduction in installed capacity. Additionally, thanks to power limiters the lighting intensity is reduced during night hours - when the traffic of vehicles and pedestrians is low - leading to a 46% reduction in electricity use from the network. This affects also the energy purchase costs, which, beyond a lower consumption level, also reduces fixed charges and ultimately results in an annual 50% reduction in costs for the city.

Operational benefits

The new luminaires do not require much maintenance, which significantly reduces the operating costs. Equipping street lighting with remote monitoring and control enables supervisors to monitor the system operations. The staff involved in the supervision receives information on any failures, disruption, power shutdowns by the electricity company and required interventions, which enables immediate response to equipment failure or malfunction.

Project numbers

1,495 luminaires replaced

46% reduction in electricity use

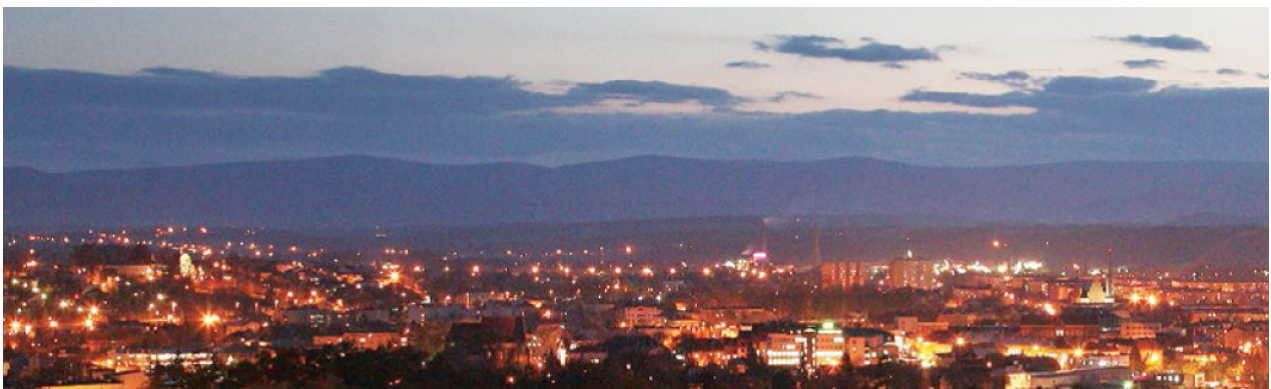
50% reduction in costs

1,116 tonnes of CO₂ saved each year

€720,000 invested

Environmental results

The investment allowed the city to reduce CO₂ emissions by 1,116 tonnes per year. The first report submitted to the NFOŚiGW for 2014 shows that, while fully-upgraded lighting had been in operation for only one month back then (in December 2014), the emission reduction has cumulatively been growing with any newly-installed luminaire and controller. CO₂ emissions amounted to almost 372 tonnes in 2014, which is equal to 15% of measured emissions before modernisation. The city expected to reach a 46% decrease within a year. Achieving 1/3 of the expected annual reduction in such a short period of time confirms that the investment will meet its objectives.



For more information on the project, please contact:

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