

Public lighting ESCO project



European Bank
for Reconstruction and Development



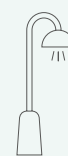
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Upgrading street lighting in Podbablje, Dalmatia, Croatia

In 2016, the city of Podbablje in Croatia modernised its street lighting system by replacing 1,643 lamps – all street lights in the municipality – with high-efficiency Sodium luminaires. Following an ESCO approach, the city outsourced the technical risks and financing of the project to the private bidder with the most economic bid proposal. Technical Assistance from the EBRD, as part of its EU-funded Regional Energy Efficiency Programme (REEP), supported the investment, which was also co-financed by the Croatian Environmental Protection and Energy Efficiency (EPEE) fund.



NUMBER OF LIGHT
POINTS REPLACED

1,643



ENERGY SAVINGS

45%

(480,033 kWh/year)

Regional Energy Efficiency Programme

The EBRD's REEP helps public and private organisations to identify, prepare and finance their energy efficiency investments. Technical assistance and grant elements under REEP are funded by the EU's Western Balkans Investment Framework (WBIF). REEP follows a pragmatic operational and financing approach and is built on a combination of the following pillars:

- 1. Policy dialogue** to support the development of an enabling regulatory framework and of contract templates that facilitate sustainable energy efficiency investments.
- 2. Technical assistance** to support project identification, preparation and implementation and to help build the capacity of public authorities (ESCO Clients).

- 3. Financing instruments and grant elements** for specific energy efficiency or renewable energy investments with clear estimates of energy savings and carbon emissions reductions.

More information and examples of these activities and REEP contact details are available here: www.wb-reep.org

Podbablje, Dalmatia

Podbablje is a small municipality in Croatia, located in the Split-Dalmatia County, consisting of eight villages. Tourism and agriculture are the main activities, and the local economy is well positioned for ongoing development, thanks to its favourable geographical position close to the coast and good road connections. Moreover, local taxes and land costs are relatively low. The municipality already has two established entrepreneurial zones for business development, as well as two tourist zones.

In total, Podbablje municipality has 1,643 street lights in use. The oldest fixtures date back to the second half of 20th Century. Most of the current lights were installed before 1990s and use Mercury and old Sodium technology.



Project description

Podbablje's old and inefficient street lighting system meant high energy and maintenance costs. In 2015, the municipality decided to modernise the system, opting for an ESCO model via public tender. The municipal authorities used technical assistance from the EBRD to provide support for the tender process, as part of an EU-funded REEP. The project was co-financed by the Environmental Protection and Energy Efficiency (EPEE) fund in the form of a capex grant of €138,340, accounting for 61 per cent of the total capital expenditure.

The technical specifications included the replacement of 1,387 old and inefficient Mercury lamps and 256 old Sodium lamps with 1,643 new high-efficiency Sodium lamps. The old fixtures covered 24 metering points, located across the municipal area of Podbablje. Of the new lamps, 1,500 have a nominal capacity

of 70 W and 143 a nominal capacity of 100 W, with a nominal lifetime of 28,000 hours. The project included the replacement of the entire luminaire; columns, cables, cabinets were not part of the works.

Total energy savings from the replacement of the lanterns was calculated at 480,033 kWh per year (or 45 % on previous usage), in addition to annual CO₂ savings of 181 tonnes. Given a relatively high street lighting tariff of 0.13 €/kWh, the cost savings on energy use and maintenance combined was calculated at about € 70,000 per year. Assuming estimated capital expenditure (capex) of € 230,566, the breakeven period was just 3.3 years. The new lanterns, with high efficiency optics, improve overall lighting quality and simultaneously reduce light pollution.

BRODOMERKUR, a local company entering the ESCO market for the first time, won the tender. The Energy performance Contract (EnPC contract) period is 50 months in total. The project will use PHILIPS luminaires with high pressure Sodium lighting technology.



PROJECT IMPACT		
	Before project implementation	After project implementation
Light source	High pressure Sodium / Metal halide/ Mercury	LED
Number of light points	1,643	1,643
Installed capacity	258 kW	141 kW
Energy consumption	1,058,133 kWh/year	578,100 kWh/year
Energy costs	€137,557/year	€75,153/year
Energy savings		45% (480,033 kWh/year)
Energy cost savings		€62,404/year
Maintenance savings		€9,200/year
Total cost savings (energy and maintenance)		> €70,000/year
Simple payback period		3.3 years
Reduction in CO ₂ emissions		181 tCO ₂ /year