

Public lighting ESCO project



European Bank
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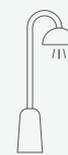
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Upgrading street lighting in Novigrad

In 2016, the city of Novigrad-Cittanova in Croatia modernised its street lighting system by replacing 954 lamps – more than half of all street lights in the municipality – with highly efficient LED lights. 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

954



ENERGY SAVINGS

57%

(297,262 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

Novigrad-Cittanova

The small municipality of Novigrad-Cittanova is located on the north-western coast of the Istrian peninsula. Its main economic activities are tourism and hotels, textiles, transport, construction, agriculture and fisheries.

The city and its surrounding villages has 1,684 street lights, most of which were installed in the second half of the 20th century. In 2006, the system was partly upgraded with sodium technology.

By replacing 954 fixtures with efficient LED lighting systems, the municipality expects to cut its annual energy consumption for street lighting by 57 per cent, generating a total cost saving of €33,062 per year.



Project description

Novigrad-Cittanova's rather antiquated 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 €147,368, accounting for 36 per cent of the total capital expenditure.

The project involved replacing 954 older technology lamps with more efficient LED fixtures. More specifically, 859 sodium lamps and 95 halogen lamps were replaced with 667 LED lamps with a maximum installed power of 39W, 120 LED lamps with a maximum installed power of 78W and 167 LED lamps with a maximum installed power of 110W. The modernisation included the replacement of each light fixture. Supporting columns,

cables and cabinets were not part of the works. The old fixtures covered 16 metering points, of which seven were located in the heart of the old town, four in adjacent areas and another five elsewhere, including in tourist resorts.

These new fixtures will result in total energy savings of 297,262 kWh per year (or 57 per cent of the energy that the city consumes each year for street lighting). Based on street lighting tariffs of 0.11 €/kWh, the total energy and maintenance cost savings of the project were calculated at above €50,000 per year. With a capital expenditure of €411,272, the payback period is 7.8 years. Annual CO₂ emissions reductions are estimated at 112 tonnes. At the same time, citizens benefit from better quality lighting and reduced light pollution.

A consortium of GGE/Javna Rasvetljava won the tender, offering Dizano LED lamp technology. Both are Slovenian companies with a background in

ESCO projects; GGE specialised in the implementation of street lighting and Javna Rasvetljava in maintenance. The city council signed a 98-month Energy Performance Contract with the consortium on 14 January 2016.



PROJECT IMPACT		
	Before project implementation	After project implementation
Light source	High pressure Sodium / Metal halide/ Mercury	LED
Number of light points	954	954
Installed capacity	126 kW	54 kW
Energy consumption	517,609 kWh/year	220,347 kWh/year
Energy costs	€58,160/year	€25,098/year
Energy savings		57% (297,262 kWh/year)
Energy cost savings		€33,062/year
Maintenance savings		€19,080/year
Total cost savings (energy and maintenance)		> €50,000/year
Simple payback period		7.8 years
Reduction in CO ₂ emissions		112 tCO ₂ /year