



ELENA Completed Project Factsheet
Energy Efficient Reconstruction of Public Lighting
(RePubLEEC)

Location of planned investments	City of Zagreb, Croatia
Final Beneficiary	
Final Beneficiary's address	City Office for Physical Planning Construction of the City, Utility Services and Transport Trg Stjepana Radica 1 - 1st floor 10000 Zagreb Croatia
CoM signatory	yes
Sector	Energy Efficiency in Street Lighting
Total PDS costs	EUR 1,402,213.18
ELENA contribution	EUR 1,261,991.87
Project development services financed by ELENA	The ELENA Technical Assistance (TA) provided support for the preparation and implementation of the EE modernization of approx. 40% of the overall public lighting system in the City of Zagreb by developing an EPC/PPP(*) public lighting documentation. ELENA TA activities were also used to prepare the technical specifications for the energy efficiency related modernisation of some of the remaining lighting systems, not included in the scope of the EPC contract. The ELENA Team was composed of 11 internal staff (project management, procurement, street lighting experts) and seconded experts from REGEA (North West Croatia Regional Energy Agency), who brought the specific needed expertise in EU funds, EPC and PPP schemes. External expertise provided technical and legal advice and supported the preparation of the Street Lighting Action Plan and the development of technical designs (component 2).
Description of ELENA operation	The City of Zagreb as the project coordinator managed, monitored and carried out all project activities. The Zagreb RePubLEEC Project was executed in three key phases: <ul style="list-style-type: none"> • Phase 1 – Development of City Action plan of reconstruction of the public lighting system (based on detailed street lighting energy audits), • Phase 2 – Preparation of tender documentation for PPP/EPC contract (Component 1), tendering procedure for technical designs and execution of technical designs (Component 2); • Phase 3 – Launch of the tender for private partner responsible for the modernization of City of Zagreb public lighting (Component 1), tenders for construction works (Component 2).
Timeframe	January 2018– December 2021

Investment programme description	<p>The overall objective of the RePubLEEC project is the reconstruction and EE modernisation of the public lighting in the City of Zagreb. The project has been divided into two components:</p> <ul style="list-style-type: none"> • Component 1: This component targets the modernisation and the implementation of energy efficiency measures (LED sources) and smart features (regulation, IoT, etc.). This component will be implemented through an EPC/PPP contract in 40% of the street lighting facilities (around 46,800 lighting points). The tender was published at the end of the ELENA contract and the investments will be implemented by the awarded ESCO in a period of 2 years after contract signature. • Component 2: This component targets the street lighting points that needed an upgrade of the infrastructure (electric installations and poles) in addition to the works needed to implement the EE upgrade (LED lighting) resulting in an investment payback not suitable for EPC contracting. This component was financed from the City's budget and implemented through standard construction contracts. The scope of the ELENA contract included around 800 lighting points divided into 25 small investment projects.
Investment in implementation phase	EUR 25.36m
Results expected to be achieved	<p>The total estimated contributions are:</p> <ul style="list-style-type: none"> • Energy Efficiency – Annual total energy saved 23 GWh – 79% vs the initial baseline • CO2 reductions – Annual total reductions of 4,142 t CO2 sq. • Job creation – 316 FTE
Leverage factor achieved	20
Lessons learnt	<ul style="list-style-type: none"> • Strong political commitment from the public decision-makers for the implementation of the programme is essential (and in this concrete case was also a major project risk). • Good understanding of project's background is needed, especially regarding existing legal and organisational issues and technical baseline. • Sound approach to the implementation of the investment programme is needed with a clear time frame for the execution of key activities. • A Project Implementation Unit had to possess adequate capacity in different fields of project preparation and implementation: technical aspects, financing structure, legal aspects (e.g. procurement) and external expertise should be used for the improvement of these capacities. • Rapid technological advancements and price changes in the lighting sector require continuous monitoring of the market and adaptations of the project to new technical standards. Therefore, it is important to focus on setting technical standards instead of equipment specifications.
Further information sources	N/A
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