

Energy efficiency financing models - case: Croatia

Deliverable D.T 2.3.2

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1. INTRODUCTION

As any activity, energy renovation has its related costs, which vary according to the depth of the refurbishment, i.e. number and complexity of implemented energy efficiency (EE) measures. Therefore, any decision on energy renovation of a building must carefully evaluate these costs and ensure financing, in order to reap the benefits after the implementation.

The most usually utilised financing models for EE were presented and discussed in the **Deliverable D.T2.2.1 - Collection of existing financing mechanisms**. They include: own funding, loan financing, ESCO model (Energy Performance Contracting – EPC), public-private partnership (PPP), grant schemes or some combination of the beforementioned models. All financing models may be compared based on several important criteria as demonstrated in the Table below. There is no universally best solution, but for each particular situation (country, region, building) an optimal solution should be tailor-made.

Table 1 - Comparative analysis of considered alternative models

Criteria/ Model	Own financing	Loan financing	Grants	ESCO model	PPP model
Neutral impact on government debt	😊	😞	😊	😐	😊
Administrative procedure complexity	😊	😐	😐	😐	😞
Guarantee of savings / service standard	😐	😐	😐	😊	😊
Capacities and capabilities of the public bodies to implement the model	😊	😐	😐	😐	😞
Estimated multiplier effect	😐	😐	😐	😊	😊
Projects for which the model is appropriate	Simple EE measures with short pay-back periods	Simpler EE measures with shorter pay-back periods	More complex projects, with longer pay-back periods	Highly complex projects, with moderate pay-back periods (up to 10 years)	Highly complex projects, usually with new buildings, long-term

Usually, energy efficiency projects in public buildings combine two financing models. Rarely, more than two financing models are used. Research of usual practices in the Project Partner countries showed that dominantly grants (if available) are combined with own financing.

Recently, with the availability of EU structural and investment funds for energy efficiency across the MS, the blending of such funds with other financing models becomes increasingly interesting. The blending refers to combination of EU grants with other financing mechanism such as loans or ESCO/PPP model.

The deliverables D.T2.2.1 presented available financing models in each participating country and, based on the Project partners' feedback, provided a comparative analysis of availability, current usage and planned usage of different financing models.

This document builds upon the previous data gathered on and analyses of available and desirable financing models and provides the list of all available incentives and financing mechanisms for energy efficiency actions in Croatia.

2. AVAILABLE INCENTIVES AND FINANCING MECHANISMS IN CROATIA

2.1. Overview of financing mechanisms for EE

EE projects in the public sector in Croatia are supported through grants, loans and ESCO model, all based on the Government programmes for energy renovation of public buildings. The 1st Programme was adopted for the period 2014-2015 and was based on the combination of ESCO model with grant of up to 40% provided from the Environmental Protection and Energy Efficiency Fund. The 2nd Programme envisages use of different financing models for energy renovation of public buildings.

The dominant model is based on the EU grants ensured from the European Regional Development Fund. Energy renovation measures must result in the reduction of the energy for heating/cooling by at least 50% on an annual basis, compared to the annual heating/cooling energy consumption before the implementation of the EE measures. Grant rate for energy renovation works is diversified by climate zone (continental and coastal) and the development index of the municipality in which the project is being implemented – the more developed municipality is, the lower grant rate is available for that municipality. In continental area grant rate is in the range from 50 to 60%, while in coastal area it ranges from 35 to 45%. Project documentation, energy performance certificates, visibility, project management and administration activities are co-financed with 85%. If the municipality is not able to ensure the financing for the rest of the investment costs, it is allowed to take a loan from Croatian Bank for Reconstruction and Development (HBOR), which is ensured also from the ERDF, and has very favorable interest rates of up to 0,5%.

ESCO model is still underutilized in the public sector but increasingly considered, while PPP development is still in very early phase.

Table 2 - Overview of financing mechanisms for EE projects in schools

Criteria/ Model	EU Grants	Own financing	Loan financing	ESCO model	PPP model
Availability	√	√	√	√	√
Previous and current usage	-	-	-	-	√
Planned usage	√	√	-	√	-

In table below the sources for more information on financing mechanisms for EE are provided.

Table 3 - Overview of sources for more information about financing mechanisms for EE

Information	Source
General information about EE	Environmental Protection and Energy Efficiency Fund http://www.fzoeu.hr/en/energy_efficiency/



	National Energy Efficiency portal https://www.enu.hr/
Information about loan financing	Croatian Bank for Reconstruction and Development https://www.hbor.hr/en/tema/esif-loans-for-energy-efficiency/ https://www.hbor.hr/en/kreditni_program/loan-programme-for-the-energy-renovations-of-buildings/
Information about ESCO financing	HEP ESCO: https://www.hep.hr/esco/esco-projects/1833 List of energy service providers: https://www.enu.hr/ee-u-hrvatskoj/tko-je-tko-ee-rh/pruzatelji-energetske-usluge/
Information about PPP financing	Agency for Investments and Competitiveness - PPP http://www.aik-invest.hr/en/ppp/ppp-projects/ Center for Monitoring Business Activities in the Energy Sector and Investments http://cei.hr/en/public-private-partnership/

2.2. List of incentives for EE

Analysis of energy efficiency improvements' costs and benefits in the selected schools demonstrated that EE projects need high grants in order to demonstrate financial feasibility. It is, therefore, very important to ensure incentives in form of grants as well as to inform potential users on their existence and terms and conditions for their utilisation.

An overview of available incentives for EE projects in schools in Croatia is given in Table below.

Table 4 - Overview of incentives and financing mechanisms for EE projects in schools

Criteria/ Model	Grant programme 1	Grant programme 2
Name of institution	Ministry of Construction and Physical Planning	Environmental Protection and Energy Efficiency Fund
Name and description of grant	Energy renovation of buildings and use of renewable energy sources in the public sector buildings	Co-financing of energy renewal of non-residential buildings
Max. percentage of grant (%)	85%	40%
Max. value of grant (€)	5.405.405,41	189.189,19 €
Availability	periodical	periodical
Legislative reference	European regional development fund	Law on Environmental Protection and Energy Efficiency Fund
Possible combination with other incentives/financing mechanisms	YES	YES
More info	https://efondovi.mrrfeu.hr	http://www.fzoeu.hr

3. ASSESSMENT OF THE NEED FOR INCENTIVES FOR EE PROJECTS

The feasibility of EE projects depends on both technical potentials of applied measures in terms of energy savings and on the conditions of financing mechanisms available for their support. The financing gap occurs when the investment in EE cannot be paid off from savings on energy costs. The incentives in forms of grants are needed for closing the financing gap. The assessment of the need for co-financing



in EE projects in participating schools in Croatia is performed with assumptions shown in the Table below.

Table 5 - Overview of incentives for EE projects in schools

Criteria/ Model	Value
Interest rate	4%
Discount rate	6%
Life cycle of EE renovation (years)	25
Administrative, legal and architect cost	10%
Other bank cost	3%
ESCO cost	20%
PPP cost	30%
Max % of grant available	85%