

# STANDARD TWINNING LIGHT PROJECT FICHE

## 1. Basic Information

- 1.1 Publication notice reference:
- 1.2 Programme: IPA 2012
- 1.3 Twinning Number: HR 12 IPA EY 01 16 TWL
- 1.4 Title: Strengthening capacities for energy efficiency in building sector in Croatia (CRO nZEB)
- 1.5 Sector: Energy
- 1.6 Beneficiary country: Republic of Croatia

## 2. Objectives

### 2.1 Overall objective:

The overall objective of the project is supporting the Republic of Croatia in achieving the Europe 2020 headline targets of: 20% decrease of greenhouse gas emissions, 20% increase in energy efficiency and energy from renewables compared to year 1990.

### 2.2 Project purpose:

The project purpose is strengthening capacities for energy efficiency in the building sector in the Republic of Croatia and developing the basis for increasing the number of nearly zero energy buildings (nZEB).

### 2.3 Contribution to Accession Treaty/Relevant national documents:

In accordance with the Article 30 of the **Accession Treaty** the Republic of Croatia will be provided with temporary financial assistance to develop and strengthen its administrative capacity to implement and enforce Union law and to foster the exchange of best practice among peers. That assistance shall fund institution-building projects and limited small-scale investments ancillary thereto.

**Position Paper of the Commission Services on the development of Partnership Agreement and Programmes in the Republic of Croatia for 2014-2020** (February 2013) states that a general refocus of spending through the European Structural and Investment (ESI) Funds is necessary, inter alia, towards mainstreaming of climate change objectives and shifting to a resource-efficient low carbon economy. It is also stated that the Republic of Croatia needs to devote adequate ESI investment to support a low-carbon economy, to stimulate the use of renewable energy in order to reduce greenhouse gas emissions, including off-shore and on-shore wind energy as well as solar and biomass energy, looking especially at the potential of innovative technologies.

**Energy Strategy of the Republic Croatia 2008-2020** has the goal to improve energy efficiency in all segments of the energy system. The main challenge is a long-term development of the economy with decreased emission of carbon dioxide (CO<sub>2</sub>). The Strategy support the general trend referring to a more effective use of energy, use of renewable energy

sources, use of energy sources that do not produce greenhouse gas, more efficient transport system with greater use of CO<sub>2</sub> neutral fuels and internalization of external costs of environmental pollution by establishing a price of CO<sub>2</sub> emission.

**National Energy Efficiency Programme 2008-2016** lays down the energy savings objectives and forms a basis for drawing up triennial national plans on energy efficiency for three triennial periods up to 2016.

The realisation of the project will significantly contribute to the capacity of the Ministry of Construction and Physical Planning (MCP) in implementation of the **3rd National Energy Efficiency Action Plan** (NEEAP) referring to the period 2014-2016, in particular in its measure: *B2 Increasing the number of nZEB*. In view of the obligation of achieving the objective for new nZEB by 2020 (2018 for buildings intended for public use), it is assumed that by 2020 new regulations will be continuously adopted with increasingly stricter requirements regarding the energy performance of buildings until the nZEB standard is achieved for construction in the years stipulated above. This measure is complemented by the measure on energy audits and energy certification of buildings which provides information on energy consumption to the potential end-user, thereby directing their choice towards buildings with lower energy consumption and associated costs. It is additionally complemented by measures on the energy renovation of buildings. Measure *P1 Programme of energy renovation of public sector buildings 2014–2015* is currently being implemented by the Croatian Government Real Estate Agency (CGREA), which is implementing NEEAP measure through implementation of energy renovation of public sector buildings and the implementation of measures for improving energy efficiency in public sector buildings, by fostering integral renovation of buildings which includes measures regarding the building envelope, thermal-technical systems, electrical systems, and water supply system works. The expertise gained through this measure will be used in implementation of measure *P2 Programme of energy renovation of public sector buildings 2016-2020* by the MCP.

**National Plan for Increasing Number of nZEB (nZEB Plan)** which MCP published envisages targets for improving the energy performance of new buildings in order to ensure that by 31 December 2020 all new buildings are nearly zero-energy buildings and defines standards for nZEB. Within this Twinning light project recommendations for update of nZEB Plan will be prepared and roadmap for its implementation will be drafted.

This project is fully in line with the energy policy of the Republic of Croatia. It aims at developing the basis for increasing the number of nZEB through strengthening of the institutional and administrative capacities related to nZEB, with the final objective of mitigation of climate changes and protection of the environment.

### **3. Description**

#### **3.1 Background and justification:**

The Republic of Croatia invests continuous efforts to meet the Europe 2020 Strategy requirements regarding the promotion of energy efficiency, renewable energy and reduction of greenhouse gases. Energy efficiency is one of the most cost effective ways to enhance security of energy supply, and to reduce emissions of greenhouse gas and other pollutants. In many ways, the greatest energy saving potential lies in buildings.

Directive 2010/31/EU on the Energy Performance of Buildings (EPBD II) and Directive

2012/27/EU on the Energy Efficiency (EED) are implemented through changes in the national legal framework, such as mandatory energy certification for all new buildings and buildings being sold or leased at the market, apart from for flats, apartments and guesthouses leased for tourist accommodation. Moreover, energy audits of the buildings have been extended to: public sector (for public buildings and public lighting), large consumers (for buildings used for their activities) and other users funded by the Environmental Protection and Energy Efficiency Fund when energy audits have been stipulated by Funds regulations. Adaptation of the construction industry to EPBD II requirements for nZEB is foreseen in gradual increase in building requirements in three-year periods (2012, 2015, 2018) for new buildings and reconstruction of the existing buildings in order to avoid major market disturbances. For this reason Technical regulation on the rational use of energy and thermal protection in buildings was amended in 2013, 2014 and 2015, enforcing by every revision more detailed rules regarding energy efficiency of the new buildings and buildings undergoing major renovation.

The EPBD II lays down requirements as regards increasing the number of nZEB and also sets requirements for energy audits and energy certifications of buildings, including nearly zero ones. It requires regular inspection of heating and air-conditioning systems in buildings and an independent control system for development of methodology for calculating the integrated energy performance of buildings and building units. It also prescribes that data on energy consumption of buildings are available to make informed decision about necessary improvements.

The national objective of energy savings in final consumption is defined by the National Energy Efficiency Action Plan (1st, 2nd and 3rd NEEAP) in accordance with the methodology set out in the Directive 2006/32/EC on Energy End-Use Efficiency and Energy Services (ESD). This objective corresponds to the absolute amount of 9 %, or 10 % of final energy consumption, defined as average energy consumption in the period 2001-2005. Pursuant to the ESD, achievement of this objective is monitored through calculations of achieved savings in comparison to 2007. On the other hand, the 3rd NEEAP, pursuant to the requirements of EED also presents the objective expressed as the absolute amount of final energy consumption in 2020. The aforementioned objective pertains to the revised projections for final energy consumption which take 2010 values as baseline.

Although the national indicative savings target of 19.77 PJ was set in the 2nd NEEAP and was not changed in the 3rd NEEAP, in view of the energy consumption realised in 2012, it will be necessary to draw up new projections for final energy consumption and redefine the objectives expressed as the absolute amount of energy consumption in 2020. By applying the top-down method, the achieved savings in 2012 were at 61 % of the 2016 target, and the target can be expected to be achieved in 2016. In comparison to 2010, savings have increased in every sector, of which industry and transport have had the highest increase. However, analysis of the implementation of each individual measure defined in the 1st and 2nd NEEAP shows that many positive results were achieved due to unforeseen activities, or accidental/one-time positive results, and not due to a systematic implementation of measures.

Buildings are the largest final energy consumers and have great untapped potential for energy, economical end ecological savings. Final energy consumption in buildings was 103,20 PJ for 2013, representing 42,4% of the total energy consumption in 2013. Considering the fact that the largest energy savings can be reached in buildings, it is necessary to direct all the activities regarding energy efficiency towards upgrade of existing buildings and construction of new nZEBs.

EPBD II requires that all new buildings are nearly zero energy by 31st December 2020, while all new public buildings need to be nZEBs from 31st December 2018. Therefore, the public sector should encourage the transformation of buildings that are refurbished into nZEBs and should play a leading role in the field of energy efficiency and map out ambitious goals for public buildings.

The Directive 2010/31/EU (EPBD II) defines that nZEB is a “building that has a very high energy performance. The nearly zero or very low amount of energy required should to a very significant extent be covered by energy from renewable sources, including renewable energy produced on-site or nearby.” Acknowledging the variety in building culture and climate throughout the EU, the EPBD II does not prescribe a uniform approach for implementing nZEB and neither does it describe a calculation methodology for the energy balance. To add flexibility, it requires Member States to draw up specifically designed national plans for increasing the number of nZEBs reflecting national, regional or local conditions. The national plans will have to translate the concept of nZEB into practical and applicable measures and definitions to steadily increase the number of nZEBs. Furthermore, plans should contain detailed application in practice of the definition of nearly zero-energy buildings, reflecting their national, regional or local conditions, and including a numerical indicator of primary energy use expressed in kWh/m<sup>2</sup> per year. Primary energy factors used for the determination of the primary energy use may be based on national or regional yearly average values and may take into account relevant European standards, and intermediate targets for improving the energy performance of new buildings.

In November 2014, the MCPP has published definitions of nZEB standards in the National Plan for Increasing Number of nZEB until 2020, depending on intended use of the building, as a crucial part of changes in technical regulation on energy economy and thermal protection of buildings. The published definitions include definition of standards for nZEB of one-family residential, residential, office, educational, hospital, hotel/motel/restaurant and sports hall buildings. Definitions based on intended use of the building are currently covering most of the buildings, yet the roadmap for implementation of the plan is missing. Moreover, it is necessary to update definitions of the nZEB in terms of balancing energy flow through the system which would further encourage the use of renewable energy sources in nZEB.

Besides the need to update of the key policy recommendations, like nZEB Plan and Technical regulation on the rational use of energy and thermal protection in buildings, and to develop the roadmap to achieve the objectives on increasing the number of nZEB until 2020, capacities of the MCPP, CGREA and other stakeholders also need to be strengthened to ensure quality implementation of the EU requirements in the area of nZEB.

### 3.2 Linked activities:

**Croatian Environmental Protection and Energy Efficiency Fund** announces annual competition for grant funds aiming at co-financing of energy efficiency and use of renewable energy sources projects of local and regional governments, companies, entrepreneurs, for projects using renewable energy (PV, solar panels, stoves and biomass boilers, heat pumps) in households, for the public sector buildings reconstructed on the principles of energy efficiency and sustainable building, for the energy efficient and environmentally friendly public lighting in towns and municipalities.

**Intelligent Energy – Europe project “Zagreb - Energy Efficient City”** started in April 2013 and ended in March 2016. The project objective was to implement energy efficiency measures and renewable energy sources in buildings owned by the local public authority (City of Zagreb). The refurbishment of public buildings included standard energy efficiency renovation measures but also the installation of renewable energy sources (solar panels and collectors) on the very same buildings. Modernization of public lighting is the first project of such size in the Republic of Croatia which will feature LED lamps with regulation during late night hours. By implementing the proposed project measures, it is envisaged that energy savings of 33.526 MWh per year will be achieved as well as 290 MWh of generated green electricity.

**Croatian Telecom and UNDP project “Solar Sunflowers”** started in September 2012 and ended in August 2013. Within this project, solar trekkers were put into operation in 10 schools across the Republic of Croatia. Solar trekker is a device that rotates during the day for the sun, like a sunflower. Solar trekker standalone solar systems "follow" the sun during the day so that the solar modules are targeted at the optimum angle to the sun, which brings in about 30% greater efficiency of the system, and thus more electricity is produced.

**CIP Intelligent Energy project “Build up Skills Croatia – CRO SKILLS”** started in June 2012 and ended in December 2013. The main goal of the project was to define and quantify the needs and possibilities of the Croatian building sectors in contributing to the achievement of ambitious national energy efficiency targets. The project contributed to enhancing practical knowledge of specialized on-site workers, which facilitated an increased deployment of energy efficiency and renewable energy sources into the construction sector daily practices. The project was implemented by the University of Zagreb, Faculty of Civil Engineering.

**IPA 2008 project “Citizen Participation in Energy Efficiency Action Planning (CENEP)”** started in February 2011 and ended in February 2013. The specific goal of the project was to develop a socially responsible national policy in the field of energy efficiency through public consultations and discussions. The overall purpose of the project was to contribute to enacting of the National Energy Efficiency Action Plan and its further implementation, through establishing cross-sectoral partnerships of public and civil society organizations and individuals active in the field of energy, by equipping the stakeholders with knowledge, know-how and experience and by including a wide circle of interested individuals in public consultation on the topic.

**UNDP project “Promoting Energy Efficiency in Croatia”** started in 2005 and ended in 2014. The project was implemented by the UNDP in cooperation with the Ministry of Economy, Ministry of Construction and Physical Planning and Environmental Protection and Energy Efficiency Fund. The project was intended for household sector with the purpose of raising citizens’ awareness of the need for energy management that brings energy efficiency benefits. Comprehensive three-year information and educational campaigns were implemented, aimed to general public. The purpose of the other component of the project referred to energy efficiency of public buildings. Since budgets of Croatian cities and counties bear significant energy costs (natural gas, heating oil, firewood, electricity, water) for buildings that are in their ownership or under their control, the project was primarily aimed at energy savings in buildings owned by local and regional governments, as well as in citizens and other service sector-oriented activities such as national and local information campaigns on energy efficiency, seminars, free initial energy audits and consulting. The project also established precondition for development of the information system for energy management as

a tool for permanent gathering, storing and analysing of data on energy consumption in building and construction sector. This information system has to be further developed in order to provide a complete IT solution for data gathering, data standardization and data evaluation. Project activities also include posting of info kiosk or info points on public places, having advisory purposes for citizens on energy efficiency measures in their homes and local environments. 127 cities and 20 counties have signed Energy Chart. Energy Efficiency and Environmental Protection Policy publically announced 70 cities and 13 counties, having obliged themselves in energy savings of at least 5 % per year. Energy Efficiency offices have been established in 64 cities and 14 counties with 361 trained employees. Register of public buildings with permanent energy savings contains data for more than 6.300 public buildings. 1.126 energy audits were completed. Technical measures of energy efficiency were conducted in 78 public buildings (schools, kindergartens, hospitals).

**UNDP Project “House in Order”** started in July 2005 and ended in October 2013. The project supported the model of continuous and systematic energy management in buildings owned by the Government. The project was based on establishing the organizational structure for energy management, staff education and application of IT tools for continuous monitoring and analysing energy and water consumption in public buildings owned by the State.

### 3.3 Results:

Result 1: Key policy recommendation updated

Indicators of achievement:

- Analysis of Croatian building stock, construction practices, market prices for materials and equipment, relevant legislation and support measures as the baseline for implementation of the nZEB Plan conducted and corresponding report prepared
- Technical and economic requirements<sup>1</sup> needed for update of definition of nZEB standards identified and corresponding report with recommendations prepared
- Simulation of different technological options for improving energy performance of all identified building types performed and corresponding report with recommendations on subsidy percentage based on the type of building and the applied technology<sup>2</sup> prepared

Result 2: Recommendations for update of the nZEB Plan and indicative roadmap for implementation of nZEB Plan for Croatia drafted

Indicators of achievement:

- Analysis of the nZEB Plan conducted and report with recommendations for update of the nZEB Plan drafted, taking into consideration climate, technical and economic factors (sustainability of the nZEB Plan in relation to Croatian GDP)
- Comparative analysis of the nZEB Plan and plans/roadmaps related to nZEB of at least two Member States, determined based on the similar climate and economic factors, conducted and corresponding report with recommendations prepared

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<sup>1</sup> It is envisaged that the identification of technical and economic requirements will take into account all building types and two defined climate zones.

<sup>2</sup> The recommendations will be based on the matrix: building type-technology-subsidy rate.

- Based on the conducted analyses, indicative roadmap for implementation of the nZEB Plan drafted<sup>3</sup>

Result 3: Capacity of the MCPP, CGREA and other stakeholders on implementation of requirements of the EPBD II, in reference to nZEB at the national level strengthened

Indicators of achievement:

- Conducting training needs analysis (TNA) of stakeholders in reference to nZEB Plan and preparing TNA report with training programme and training materials
- Training for at least 5 staff members of the MCPP and CGREA (in total) on implementation of requirements of the EPBD II, in reference to nZEB conducted
- Round table/workshop on defining key barriers for implementation of the nZEB Plan for at least 20 stakeholders<sup>4</sup> conducted

### 3.4 Activities:

**Member State is kindly requested to develop activities in the submitted proposal which are needed in order to achieve the results stipulated in the fiche.**

Minimum two visibility events will be organized in the course of the implementation of the project; Kick-off meeting at the start of the implementation and the Final meeting at the end of the implementation of the project activities.

### 3.5 Means/Input from the MS Partner Administration:

MS Project Leader may participate in the project also as the short-term expert (STE) and in this case the MS Project Leader should satisfy requirements stipulated in the fiche for both the Project Leader and the relevant STE profile.

#### 3.5.1 Profile and tasks of the Project Leader

Profile of the Project Leader

Requirements:

- University level education or equivalent professional experience of 7 years in energy efficiency
- Minimum 5 years of professional experience in the field of energy efficiency
- Experience in project management
- Working level of English language
- Computer literacy
- Proven contractual relation to public administration or mandated body, as defined under Twinning manual 5.4.5

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<sup>3</sup> The drafted roadmap is envisaged to include the exact timeline and institutions involved. The activity is also envisaged to include assessment of feasibility of the drafted roadmap.

<sup>4</sup> Stakeholders will be more precisely defined during the project implementation; tentatively it is envisaged that they will include financial and subsidy institutions, investors, contractors, etc.

Assets:

- Experience in the field of energy efficiency in building sector

Tasks of the Project Leader:

- Overall responsibility of the project, support and coordination of all activities in the Beneficiary Country in cooperation with the BC Project Leader and experts engaged in undertaking activities
- Overall coordination of MS experts' work and availability
- Ensuring sound implementation of envisaged activities
- Coordination and networking with relevant institutions in the BC and in the MS
- Organization of visibility events (kick-off and final events)
- Participation in Steering Committee meetings
- Project reporting
- Ensuring backstopping and financial management of the project in the MS

### 3.5.2 Profile and tasks of the short-term experts

For each of the proposed experts in the submitted proposal the Member State is kindly requested to indicate the expert's profile.

Profile of the short-term expert 1 (STE 1)

Requirements:

- University level education or equivalent professional experience of 6 years in the field of energy efficiency
- Minimum 3 years of professional experience in the energy efficiency of buildings
- Working level of English language
- Computer literacy
- Proven contractual relation to public administration or mandated body, as defined under Twinning manual 5.4.5

Assets:

- Experience in preparation of strategic documents related to nZEB
- Experience in practical application of nZEB standards
- Experience in conducting trainings

Tasks of the short-term expert 1:

- Close cooperation with the Croatian experts in undertaking all activities
- Providing professional advice to Croatian experts during the project implementation period
- Undertaking all activities and achieving the mandatory results related to the energy efficiency of building such as:
  - Conducting analysis of Croatian building stock, construction practices, market prices for materials and equipment, relevant legislation and support measures
  - Identifying technical and economic requirements needed for update of definition of nZEB standards
  - Performing simulation of different technological options



- Conducting analysis of the nZEB Plan and drafting report with recommendations for update of the nZEB Plan, taking into consideration climate, technical and economic factors (sustainability of the nZEB Plan in relation to Croatian GDP)
- Conducting comparative analysis of the nZEB Plan and plans/roadmaps related to nZEB of at least two Member States
- Drafting indicative roadmap for implementation of the nZEB Plan
- Conducting training needs analysis
- Preparing training programme and materials
- Conducting training
- Conducting round table/workshop

#### Profile of the short-term expert 2 (STE 2)

##### Requirements:

- University level education or equivalent professional experience of 8 years in the field of finance
- Minimum 3 years of professional experience in the field of finance
- Working level of English language
- Computer literacy
- Proven contractual relation to public administration or mandated body, as defined under Twinning manual 5.4.5

##### Assets:

- Experience in the field of finance related to energy efficiency in building sector

##### Tasks of the short-term expert 2:

- Close cooperation with the Croatian experts in undertaking all activities
- Providing professional advice to Croatian experts during the project implementation period
- Undertaking all activities and achieving the mandatory results related to financial aspects of the energy efficiency of building such as:
  - Conducting analysis of Croatian building stock, construction practices, market prices for materials and equipment, relevant legislation and support measures
  - Identifying technical and economic requirements needed for update of definition of nZEB standards
  - Performing simulation of different technological options
  - Conducting analysis of the nZEB Plan and drafting report with recommendations for update of the nZEB Plan, taking into consideration climate, technical and economic factors (sustainability of the nZEB Plan in relation to Croatian GDP)
  - Conducting comparative analysis of the nZEB Plan and plans/roadmaps related to nZEB of at least two Member States
  - Drafting indicative roadmap for implementation of the nZEB Plan
  - Conducting training needs analysis
  - Preparing training programme and materials
  - Conducting training
  - Conducting round table/workshop

## 4. Institutional Framework

Beneficiary institutions are the Ministry of Construction and Physical Planning (MCP) and Croatian Government Real Estate Agency (CGREA).

MCP is the central government body responsible for the transposition and implementation of European Directive 2010/31/EU (EPBD II) of the European Parliament and of the Council of 19 May 2012 on the energy performance of buildings (EPBD) into national law and of the requirements of Directive 2006/32 of the European Parliament and of the Council of 5 April 2006 on energy end-use consumption and energy services (ESD) and Directive 2012/27/EU on energy efficiency (EED) in reference to building sector.

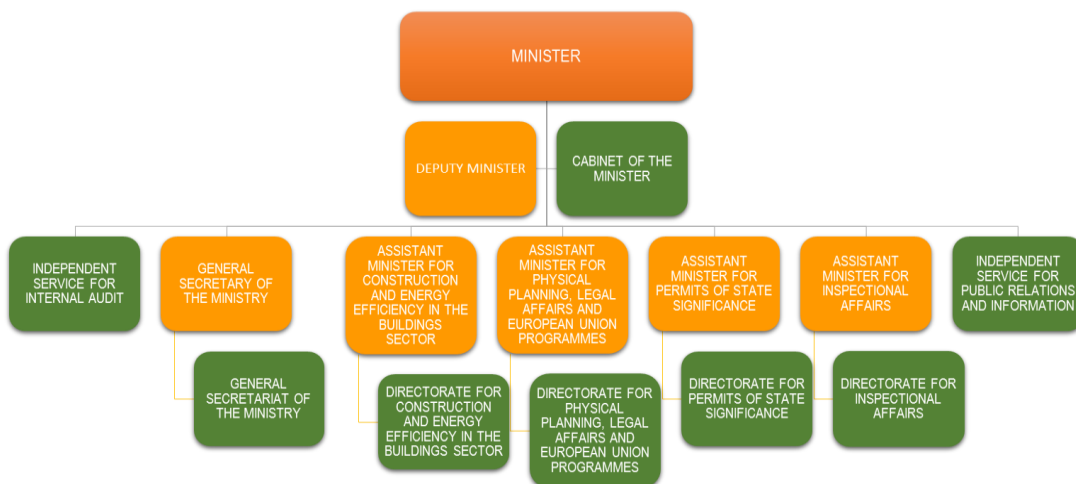


Figure 1: Organizational chart of the MCP

Directorate for Construction and Energy Efficiency in the buildings sector, with 20 employees, performs administrative and other tasks related to energy efficiency in building and participates in the development and implementation of programmes supported by the European Union funds. This Directorate for Construction and Energy Efficiency will be directly involved in Twinning light project activities and will be responsible for coordination of all relevant stakeholders of the project.

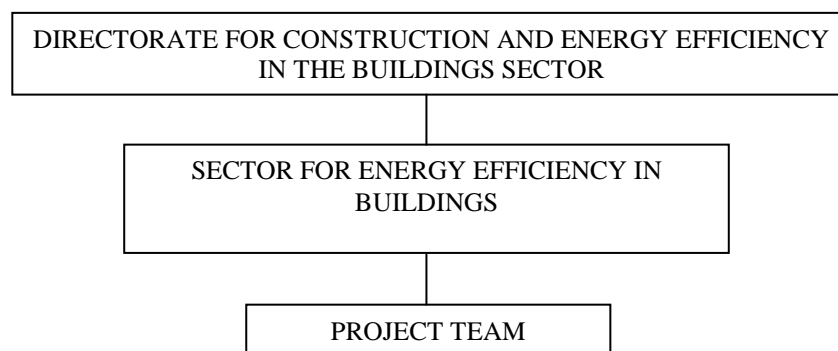


Figure 2: Coordination of the project within MCP

CGREA is established by MCPP for implementation of special programmes in real estate sector and construction. Department for Energy Management in Public Sector with 7 employees will be directly involved in project implementation. Activities of the Department for Energy Management in Public Sector are directly related to implementation of Croatian laws and regulations related to energy end-use efficiency and energy performance of buildings, which is fully harmonized with relevant Directives.

Activities of the project are not expected to lead to the change of the institutional framework as described above.

Two Steering Committee meetings will be held for the purpose of reviewing the progress made under the project as well as to discuss results achieved and/or problems occurred. The first Steering Committee meeting will be held during the third month of project activities implementation in order to discuss and comment the draft start-up report. The second Steering Committee meeting will be organised during the last month of the implementation period of the Action to discuss the draft final report.

It should be noted that the participation of the Member State Project Leader in Steering Committees meetings has to be combined with expert missions in case the Member State Project Leader is also a short-term expert in the Twinning light project. If the Member State Project Leader is not short-term expert in the Twinning light project then his visits to Croatia, (one visit every three months) as part of his overall task to ensure coordination and political steering of the project, should be organised at the same time as the two Steering Committee meetings of the project.

The exact participants of the Steering Committee meetings will be defined during the implementation of the project, but will at least include the following members:

- BC Project Leader
- MS Project Leader
- CFCA Project Manager
- MRDEUF Sector Manager
- CGREA representative

The beneficiary is committed to provide all necessary infrastructure such as office space and desktop computers with internet connection for experts, venue for holding seminars and workshops, and to ensure the necessary local staff/experts inputs.

## 5. Budget

Strengthening capacities for energy efficiency in building sector in Croatia (CRO nZEB)	IPA Community Contribution	National Co-financing	TOTAL
Twinning light Contract	90% 198.000 EUR	10% 22.000 EUR	220.000,00 EUR

*The total amounts of the IPA Community Contribution and National Co-financing stipulated in the above table represent the total maximum amounts and therefore, they may be reduced at the level of the Twinning light contract, while the relevant ratio (percentages) should be maintained as fixed.*

*The co-financing requirement foreseen under IPA will be considered fulfilled according to the provision of the relevant Financing Agreement.*

Interpretation costs will be reimbursed from the budget only for the purpose of workshops and seminars, up to 7% of the Contract amount can be used for translation and interpretation purposes.

Provisions for visibility costs and expenditure verification costs should be included in the budget.

## **6. Implementation Arrangements**

### **6.1 Implementing Agency responsible for tendering, contracting and accounting**

Central Finance and Contracting Agency (CFCA)  
Ulica grada Vukovara 284, Object C  
10000 Zagreb, Croatia  
Mr Tomislav Petric, Director  
Phone: +385 1 604 2400  
Fax: +385 1 604 2599  
E-mail: procurement@safu.hr

Twinning Administrative Office  
Central Finance and Contracting Agency  
Ulica grada Vukovara 284, Object C  
10000 Zagreb, Croatia  
Ms Nirvana Sokolovski, Twinning NCP  
Phone: +385 1 604 2400  
Fax: + 385 1 604 2599  
E-mail: twinning@safu.hr

### **6.2 Main counterpart in the BC:**

Senior Programme Officer (SPO)  
Mr Sandro Nižetić, Deputy Minister  
Ministry of Construction and Physical Planning (MCP)  
Ulica Republike Austrije 20  
10000 Zagreb, Croatia  
Phone: +385 1 3782 444  
Fax: +385 1 3772 822  
E-mail: sandro.nizetic@mgipu.hr

BC Project Leader:  
Ms Nada Marđetko Škoro, Head of Sector  
Sector for Energy Efficiency in Buildings  
Ministry of Construction and Physical Planning (MCP)  
Ulica Republike Austrije 20  
10000 Zagreb, Croatia

### 6.3 Contracts:

It is envisaged that the Project will be implemented through one Twinning light Contract with a maximum amount of 220.000,00 EUR.

### 6.4 Reporting:

The Start-up Report will cover first two months of the contract and will be submitted during the third month.

The Start-up report should:

- Clearly define the aims and purpose of the aid provided by the project,
- Give detailed description of the content of particular parts of the project,
- Work out in detail the activities carried out and the results achieved,
- Work out in detail all modifications agreed with the beneficiary institution,
- Review difficulties met during the implementation of the project and measures that were undertaken for their removal,
- Provide all findings obtained in the meanwhile and preliminary conclusions, and
- Contain a general plan of activities for the implementation of the remained duration of the project.

The Final Report shall be submitted within three months upon the completion of the project activities and in any case within the legal duration of the project, and it should contain the following:

- Complete review of all activities carried out by MS experts during the implementation of the project,
- Achieved progress concerning each activity,
- Summary of all project results, with particular emphasis on mandatory results,
- Estimation of the project impact compared with the project aims and measures of the achieved progress,
- Identification of all important problems met during the implementation of the contract and solutions that have been applied,
- Lessons drawn from the project, and
- Recommendations for further steps in future projects

The reports must be endorsed and countersigned by the Beneficiary, who may make additional comments.

Reports shall be submitted to the Ministry of Construction and Physical Planning, the Croatian Government Real Estate Agency, the Central Finance and Contracting Agency, the Ministry of Regional Development and EU Funds and the concerned service of the European Commission in a form of 4 hard copies and an electronic version. All reports should be written in English.

### 6.5 Language:

Working language of the Twinning light project will be English.

## 7. Implementation Schedule (indicative)

- 7.1 Launching of the call for proposals: 3Q 2016
- 7.2 Start of project activities: 4Q 2016
- 7.3 Project completion: 2Q 2017
- 7.4 Duration of the execution period (number of months): 9 months; the execution period will end 3 months after the implementation period of the Action (work plan) which will take 6 months.

## **8. Sustainability**

Sustainability of the project will be ensured through activities directed towards improvement of energy efficiency in building sector and strengthening capacities of the staff of the both beneficiary institutions.

Project outputs will remain as permanent asset to MCPP and CGREA, while materials prepared during the project implementation will be used even after the project implementation in that way increasing efficiency and quality of the staff performance. It is expected that CGREA will further promote dissemination of aggregated knowledge through its educational activities in public sector.

The project results are expected to have positive impact on implementation of energy efficiency measures as envisaged in national, regional and local strategic documents. It is expected that project will contribute to shaping of the attitude and behaviour of stakeholders in energy efficiency in building sector in Republic of Croatia and have further positive impact on public administration at regional and local level, companies, tenants and building owners.

## **9. Crosscutting issues**

Based on the fundamental principles of promoting equality and combating discrimination, participation in the project will be guaranteed on the basis of equal access regardless of sex, racial or ethnic origin, religion or belief, disability, age or sexual orientation. Equal participation of men and women during the implementation of the project will be assured.

The activities of the Twinning light project are expected to have positive impact on the environment.

## **10. Conditionality and sequencing**

Not applicable.

## **ANNEXES TO PROJECT FICHE**

1. Logical framework matrix in standard format
2. List of relevant laws and regulations
3. List of abbreviations

## Annex 1. Logical framework matrix in standard format

Strengthening capacities for energy efficiency in building sector in Croatia (CRO nZEB)		Programme name and number: IPA 2012	
Ministry of Construction and Physical Planning (MCP) Croatian Government Real Estate Agency (CGREA)		Contracting period expires: 3 years following the date of conclusion of the Financing Agreement	Disbursement period expires: 3 years following the end date for contracting
		<b>Total budget:</b> 220.000,00 EUR	IPA financing: 198.000 EUR (90%) National co-financing: 22.000 EUR (10%) <sup>5</sup>
<b>Overall objective</b>	<b>Objectively Verifiable Indicators</b>	<b>Sources of Verification</b>	
The overall objective of the project is supporting the Republic of Croatia in achieving the Europe 2020 headline targets of: 20% decrease of greenhouse gas emissions, 20% increase in energy efficiency and energy from renewables compared to year 1990.	<ul style="list-style-type: none"> <li>Minimum requirements related to the energy performance of buildings in line with Article 3, Article 4 and Article 5 of Directive 2010/31/EU in the Republic of Croatia implemented</li> </ul>	<ul style="list-style-type: none"> <li>Relevant EC reports and statistics</li> <li>National Action Plan for Energy Efficiency</li> <li>MCP reports and statistics</li> <li>CGREA reports and statistics</li> <li>Croatian Bureau of Statistics, Statistical Database</li> </ul>	
<b>Project purpose</b>	<b>Objectively Verifiable Indicators</b>	<b>Sources of Verification</b>	<b>Assumptions</b>
The project purpose is strengthening capacities for energy efficiency in the building sector in the Republic of Croatia and developing the basis for increasing the number of nearly zero energy building (nZEB).	<ul style="list-style-type: none"> <li>Key policy recommendation updated</li> <li>Recommendations for update of the nZEB Plan and indicative roadmap for implementation of nZEB Plan for Croatia drafted</li> <li>Capacity of the MCP, CGREA and other stakeholders on implementation of requirements of the EPBD II, in reference to nZEB at the national level strengthened</li> </ul>	<ul style="list-style-type: none"> <li>Twinning light project reports</li> <li>Relevant documentation produced under the project (analysis reports, recommendations, training programme, training materials, etc.)</li> <li>List of participants on workshop</li> <li>List of participants on training</li> <li>Draft roadmap for implementation of nZEB Plan</li> </ul>	<ul style="list-style-type: none"> <li>Full commitment of the parties involved and good cooperation among interrelated institutions and project teams</li> <li>Adequate BC experts appointed to participate in project activities</li> <li>Availability of BC experts to participate in trainings and other project activities</li> </ul>

<sup>5</sup> The total amounts of the IPA Community Contribution and National Co-financing stipulated in the above table represent the total maximum amounts and therefore, they may be reduced at the level of the Twinning light contract, while the relevant ratio (percentages) should be maintained as fixed. The co-financing requirement foreseen under IPA will be considered fulfilled according to the provision of the relevant Financing Agreement



Results	Objectively Verifiable Indicators	Sources of Verification	Assumptions
<p>Result 1: Key policy recommendation updated</p>	<ul style="list-style-type: none"> <li>• Analysis of Croatian building stock, construction practices, market prices for materials and equipment, relevant legislation and support measures as the baseline for implementation of the nZEB Plan conducted and corresponding report prepared</li> <li>• Technical and economic requirements needed for update of definition of nZEB standards identified and corresponding report with recommendations prepared</li> <li>• Simulation of different technological options for improving energy performance of all identified building types performed and corresponding report with recommendations on subsidy percentage based on the type of building and the applied technology prepared</li> </ul>	<ul style="list-style-type: none"> <li>• Twinning light project reports</li> <li>• Relevant documentation produced under the project (analysis reports, recommendations, training programme, training materials, etc.)</li> <li>• List of participants on workshop</li> <li>• List of participants on training</li> <li>• Draft roadmap for implementation of nZEB Plan</li> </ul>	<ul style="list-style-type: none"> <li>• Full commitment of the parties involved and good cooperation among interrelated institutions and project teams</li> <li>• Adequate BC experts appointed to participate in project activities</li> <li>• Availability of BC experts to participate in trainings and other project activities</li> </ul>
<p>Result 2: Recommendations for update of the nZEB Plan and indicative roadmap for implementation of nZEB Plan for Croatia drafted</p>	<ul style="list-style-type: none"> <li>• Analysis of the nZEB Plan conducted and report with recommendations for update of the nZEB Plan drafted, taking into consideration climate, technical and economic factors (sustainability of the nZEB Plan in relation to Croatian GDP)</li> <li>• Comparative analysis of the nZEB Plan and plans/roadmaps related to nZEB of at least two Member States, determined based on the similar climate and economic factors, conducted and corresponding report with recommendations prepared</li> <li>• Based on the conducted analyses, indicative roadmap for implementation of the nZEB Plan drafted</li> </ul>		
<p>Result 3: Capacity of the MCPP, CGREA and other stakeholders on implementation of requirements of the EPBD II, in reference to nZEB at the national level strengthened</p>	<ul style="list-style-type: none"> <li>• Conducting training needs analysis (TNA) of stakeholders in reference to nZEB Plan and preparing TNA report with training programme and training materials</li> </ul>		

	<ul style="list-style-type: none"> <li>• Training for at least 5 staff members of the MCPP and CGREA (in total) on implementation of requirements of the EPBD II, in reference to nZEB conducted</li> <li>• Round table/workshop on defining key barriers for implementation of the nZEB Plan for at least 20 stakeholders conducted</li> </ul>		
<b>Activities</b>	<b>Means</b>	<b>Specification of costs</b>	<b>Assumptions</b>
Activities to be implemented correspond to the activities developed in the selected MS proposal.	Consultation, analysis, preparation of documentation, presentation, simulations workshops, trainings.	220.000,00 EUR	In line with the assumptions specified for results.
			Preconditions: n/a

## **Annex 2. List of relevant laws and regulations**

1. Physical Planning and Building Act (Official Gazette 76/07, 38/09, 55/11, 90/11, 50/12)
2. Physical Planning Act (Official Gazette 153/13)
3. Building Act (Official Gazette 153/13)
4. Energy Efficiency Law (Official Gazette 127/14)
5. Ordinance on energy audits of construction works and energy certification of buildings (Official Gazette 81/12, 29/13, 78/13)
6. Ordinance on energy audits of buildings and energy certification (Official Gazette 48/14, 150/14, 133/15, 22/16)
7. Ordinance on requirements and criteria for persons performing energy audits of construction works and energy certification of buildings (Official Gazette 81/12, 64/13)
8. Ordinance on requirements and criteria for persons performing energy audits, energy certification of buildings and regular audits of heating and cooling systems and air conditioning (Official Gazette 73/15, 133/15)
9. Ordinance on the control of energy certificates of buildings and of reports on energy audits of construction works (Official Gazette 81/12, 79/13)
10. Ordinance on the control of energy certificates of buildings and of reports on energy audits of heating and cooling systems and air conditioning (Official Gazette 73/15)
11. Technical regulation on energy economy and heat retention in buildings (Official Gazette 97/14, 130/14, 128/15)
12. Technical regulation for windows and doors (Official Gazette 69/06)
13. Technical regulation on heating and cooling systems in buildings (Official Gazette 110/08)
14. Technical regulation on ventilation systems, partial air conditioning and air conditioning of buildings (Official Gazette 03/07)
15. Technical regulation for chimneys in construction works (Official Gazette 03/07)
16. Ordinance on requirements and criteria for determining the quality of services and works for the certification of installers of renewable energy sources - solar photovoltaic systems (Official Gazette 56/15)
17. Ordinance on requirements and criteria for determining the quality of services and works for the certification of installers of renewable energy sources - solar thermal systems (Official Gazette 33/15, 56/15)

18. Ordinance on requirements and criteria for determining the quality of services and works for the certification of installers of renewable energy sources - small-scale biomass boilers and stoves (Official Gazette 39/15, 56/15);
19. Ordinance on requirements and criteria for determining the quality of services and works for the certification of installers of renewable energy sources - shallow geothermal systems and heat pumps (Official Gazette 56/15)

### **Annex 3. List of abbreviations**

1. CENEP - Citizen Participation in Energy Efficiency Action Planning
2. CGREA - Croatian Government Real Estate Agency
3. EED - Energy Efficiency Directive - Directive 2012/27/EU of the European Parliament and of the Council of 25 October 2012 on energy efficiency
4. EPBD - Energy Performance of Buildings Directive - Directive 2002/91/EC on the energy performance of buildings
5. EPBD II - Energy Performance of Buildings Directive RECAST - Directive 2010/31/EU on the energy performance of buildings
6. ESD - Energy Service Directive - Directive 2006/32/EC on energy end-use efficiency and energy services
7. MCPP - Ministry of Construction and Physical Planning
8. NEEAP - National Energy Efficiency Action Plan
9. nZEB - nearly zero energy building
10. nZEB Plan - National Plan for Increasing Number of nZEB
11. UNDP - United Nations Development Programme