United Nations Development Programme
Country: fyr Macedonia
Project Document

Project Title

Creating an enabling environment for energy management in the Municipality of Karposh

UNDAF Outcome(s):

By 2015 central and local authorities have improved capacities to integrate environment and disaster risk reduction into national and local development frameworks, while communities and SCOs participate more effectively in environmental protection and disaster risk reduction planning, implementation and monitoring

Expected CP Outcome(s):

3.1. By 2015, national policies better address climate change adaptation and mitigation needs and demonstration programmes respond to climate change challenges;

Expected Output(s):

1) Demonstration energy efficiency measures implemented in at least two public buildings in the municipality of Karposh

2) Energy consumption register and upgraded energy monitoring information system developed, including remote metering of energy consumption in public buildings and GIS streetlight energy monitoring system

3) Capacity of the municipality of Karposh for energy monitoring improved and knowledge and awareness on energy efficiency issues increased

Executing Entity: UNDP

Implementing Agency:
UNDP

Brief Description

The project aims at creating sustainable environment for mitigating climate change in the country through improving energy efficiency on a municipal level and enhanced awareness and capacities of stakeholders involved in municipal energy management issues. The project will be focused on creating the Municipality of Karposh as a pilot municipality for improved energy management on local level that can serve as example for other local self-governments in the country, **.**
On a long term, the activities will contribute to reduction of energy consumption on a municipal level, thus reducing municipal energy demand, energy losses and greenhouse gas emissions, This will be achieved through
promotion of energy efficiency benefits that can be achieved by implementation of energy efficiency measures in municipal buildings, improved technical tools for energy monitoring, and capacity building and public awareness activities.

Programme Period:	2010 - 2015
Key Result Area (Strategic Plan)	Environment and Sustainable Development_____
Atlas Award ID:	49896
Start date:	December 2012
End Date	December 2013
LPAC Meeting Date (	
Management Arrangements	_____

Total resources required	300.000$
Total allocated resources:	300.000$
• Regular	150.000$
• Other:	
• Municipality of Karposh –	150.000$
Unfunded budget:	N/A

Agreed by (Municipality of Karposh): Stevcho Jakimovski – Mayor

Agreed by (UNDP): Alessandro Fracassetti – UN Deputy Resident Representative

I. SITUATION ANALYSIS

Large number of literature suggests that energy efficiency is essential (IAE, UNEP, IPCC) for decreasing the global energy usage and climate change mitigation. As the European Union (EU) candidate country, fyr Macedonia should follow the European policy regarding energy and climate change. Namely, the objectives proclaimed by the EU in the energy field until 2020 are: decrease of final net energy consumption by 20%, provision of energy from renewable energy sources in the amount of 20% of final energy consumption, and reduction of the emission of greenhouse gases by 20%.

According to the "Strategy for Energy Development in the Republic of Macedonia until 2030", the energy consumption will reach the level of 2618 ktoe in the year 2020, while energy efficiency would allow maintaining the consumption of only 2466 ktoe (appx. 6% below the business as usual level). Expected energy savings in 2020 are assumed to be 241 ktoe (14.73% less than the average energy consumption in the period 2002-2006). Therefore, it was essential for the Government to develop a National Strategy for Energy Efficiency (NSEE) and an Action Plan for the structural implementation of energy efficiency measures in an organized manner.

In parallel, as an obligation under the Law on Energy, local governments in the country, starting from the end of the last decade, have begun to develop Local Energy Efficiency Programmes (LEEP), in a frame of Local Environmental Action Plans or as separate strategic documents.

Moreover, according to the new Law on Energy adopted in 2011 there are number of new obligations delegated to the local authorities without providing the necessary tools and methodologies for their implementation.

In 2008 the Municipality of Karposh prepared a Programme for energy efficiency for the period 2008-2012. According to the data stated, the overall annual energy consumption of the municipal public buildings is 9819,2 MWh/yr and total expenses for energy is 33.807.602 MKD .

Public buildings under jurisdiction of the Municipality of Kaprosh

There are 20 buildings under municipal jurisdiction: 10 elementary schools, 9 kindergartens and 1 administrative building under construction.

Table 1. Public buildings in the municipality of Karposh

Building	Heated area (m^2)
OU Avram Pisevski	1.500
OU Bratstvo Edinstvo	2.500
OU Jan Amos Komenski	3.218
OU Dimo Hadzi Dimov	3.402
OU Vojdan Chernodrinski	5.036
OU Vera Ciri Viri Trena	3.600
OU Lazo Trpovski "	6.492
OU Hristijan Todorovski Karposh	3.545
OU Vlado Tasevski	4.745
OU Petar Pop Arsov	4.746
DG Majski Cvet RE "Rimska"	1.500
DG Majski Cvet RE "Varshavska"	1.500
DG Majski Cvet RE "Zhanevska" и "Hashka"	1.500
DG Orce Nikolov RE Karposh 2	888
DG Orce Nikolov RE Karposh 3	1.920

DG Orce Nikolov RE Karposh 4	1.794
DG Raspeana Mladost	1.200
DG Prolet, RE Kozle	2.848
DG Prolet, RE Vlae "Sonchoglkedi"	1.300

The table represents the public buildings and the heated area in the sectors education and social protection. The calculated average specific energy consumption for the education sector is 131KWh/m^2 and for the social protection buildings is 134KWh/m^2. It is clear that almost all municipal buildings are spending much more than the European standards for such type of buildings. The total energy consumption in the sector municipal buildings is 9.819,2KWh/yr and the potential energy savings from the municipal buildings represents approximately 30% of the present energy consumption stated in the Programme foe Energy Efficiency. The Municipality of Karposh invested in reconstruction of buildings and development of a modern energy monitoring system can be considered as a logical step forward in decreasing the energy dependency of the Municipality.

- Public light system under the municipal jurisdiction

Public light system is one of the significant communal services of the local self-governments and the municipalities are responsible for its functioning, maintenance and improvement. The financing model for covering the energy expenses from public light system encourages the municipal authorities to invest in its modernization. Investment in energy efficient public light system has a potential to provide direct budget savings. This was recognized as well by the Government that recommended to the local governments to replace the high pressure mercury lamps (HPML) throughout the country by the end of 2013.

The overall energy consumption in the Municipality of Karposh in the sector public light is 2.314 KWh/yr and the potential energy savings in this sector represents approximately 30% of the present energy consumption.

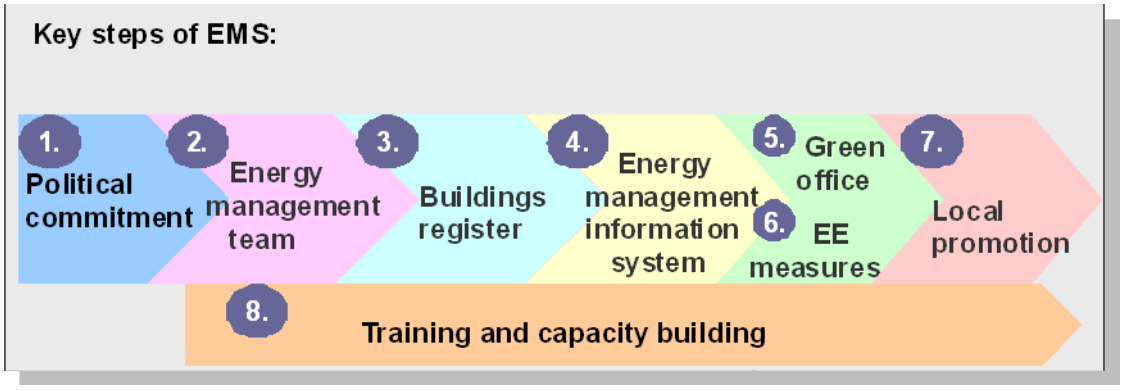
II. STRATEGY

UNDP has extensive experience worldwide in implementation of successful energy efficiency programmes and projects on national and local level. Models developed and lessons learnt from these projects will be utilized for introduction of energy management on local level in the municipality of Karposh.

Moreover, in the last three years, the CO implemented a very successful project on energy efficiency in public buildings. The outputs and results of this project such as: the energy information system called ExCITE (External Climate and Inventory Tool for Energy Efficiency), register of public buildings, training curicula, public awareness materials, etc. will be further upgraded in the course of the project implementation.

The municipality of Karposh expressed interest and commitment to work and joint the resources with UNDP in implementation of a model for energy management that can be later replicated throughout the country.

The introduction of a model for energy management on local level consists of the following steps:



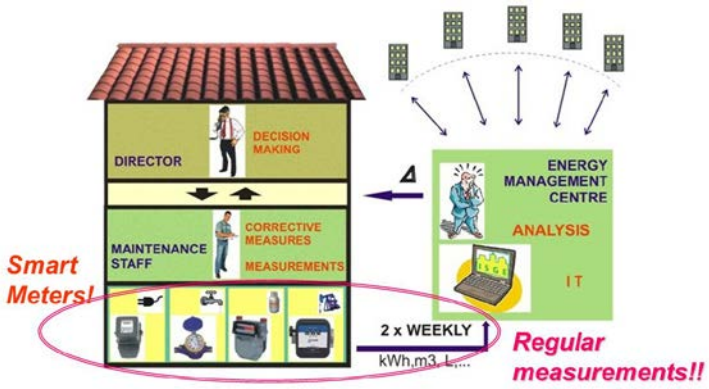
1. Political Commitment

The process of introducing energy management in cities starts with a political statement on determination to address energy efficiency issues. In this way, the local authorities are publicly declaring their commitment to promote energy efficiency, renewable energy sources and sustainable energy management in buildings and communal services. For this purpose a public event shall be organized.

2. Energy Managers and Energy Efficiency Teams

Every local authority (LA) appoints an energy manager (EM) or an EE team in bigger cites. They are part of the organizational structure and they assume the obligation of energy management for all public buildings of LA. Furthermore, every building in the LA jurisdiction appoints a person (usually technical or maintenance) responsible for energy management in that building – Local Energy Manager (LEM). The Local Energy Managers (LEM-s) are responsible for regular collection of energy consumption data of individual buildings and regular data delivery to Energy manager or EE team at the LA via established IT infrastructure or an Energy Management Information System.

The Energy management team (EE team) is also responsible for regular analysis of collected data individually per building, in cooperation with LEM-s, and aggregated analysis for all public buildings. The process of regular energy use measurement and analysis provides relevant indicators needed for identification of measures that will lead to the increase of energy performances of buildings.



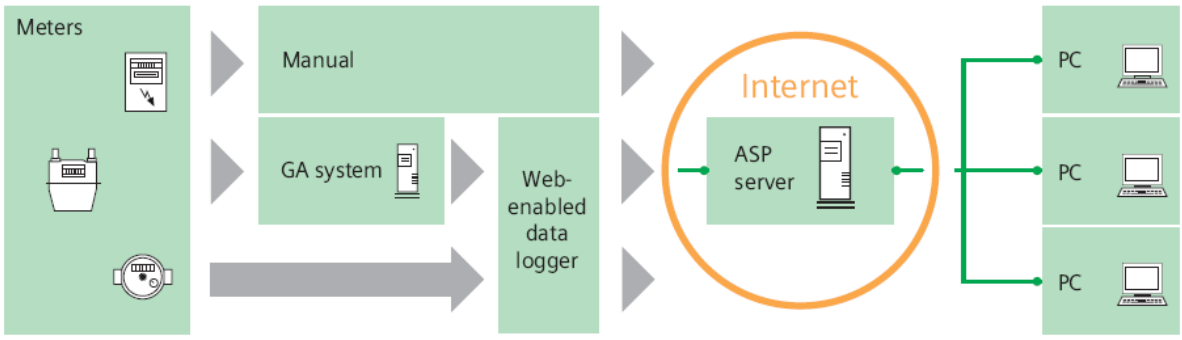
3. Building Stock Register

Data for all buildings owned by the LA has to be collected and entered into the Building Stock Register. The Building Stock Register is established in a form of a database containing all relevant data on building and consumer systems which influence energy and water consumption.

The starting point is to list all facilities owned and managed by the local authority, i.e. all facilities for which a LA is paying bills for energy and water consumption. The Register is a relational data base that enables further continuous entry of energy consumption and energy expenses for each building.

4. Energy Information System

The maintenance of a Building Stock Register must be supported by a specialized software application which enables data collection, storage and analysis of energy and water consumption for each building, groups of similar buildings or for all the buildings in a LA. It must be a web-based application that allows manual data entry from individual buildings or automated meters reading.



5. Green Office Practice

In parallel with the energy management system, a Green Office practice should be implemented as part of an everyday routine to reduce adverse environmental impacts and increase the efficiency of all use of resources. The introduction of the Green Office starts by presenting the concept and the guidelines for preparing an action plan. It is followed by the continuous support for analysing performance, setting goals and implementing all activities that lead to the best practice in managing energy use as well as reducing the waste produced by the office activities.

Additionally, the EE team might initiate green public procurement practices to stimulate EE market transformation by utilizing public sector's huge purchasing power.

6. Identifying EE Improvement Measures

Economical feasible measures could be identified by the EE team or by an outside energy audit service provider. The EE measures could be categorized as no-cost, low-cost and high-cost. The no-cost measures usually require a change in behaviour of the personnel, modified operating regime for equipment, modified use of heating and cooling systems, and that is where the Green office practice finds it role. For low- and high- cost EE measures, appropriate feasibility analyses need to be conducted.

The refurbished buildings shall be developed as demonstration projects and are proved to be useful to provide data on technical and economic feasibility, which can be used in general information. They are also an important part of the 'marketing' of energy efficiency. They demonstrate that energy efficiency gains are possible without compromising the quality of services delivered and at a reasonable cost.

7. Local Promotion Campaigns

In parallel with the Energy Management System introduction, a local EE promotion and awareness campaign must be carried out, targeting the general population. It should be very visible and attractive, present in all public media, and include specific topical summer and winter campaigns.

8. Training and Capacity Building

To improve skills and competence level for EE in the public buildings, all EE teams and LA employees have to participate in a training programme. Training activities are tailored to the needs of target groups and delivered through different modules.

Project Objective

The main objective of the project in to create an enabling environment for mitigating climate change by improving energy efficiency on a municipal level and enhanced awareness and capacities of stakeholders involved in municipal energy management issues. The Municipality of Karposh will be a model municipality for testing the introduction of a system for energy management on local level.

Project objectives and activities:

OUTPUT 1 Demonstration energy efficiency measures implemented in at least two public buildings in the municipality of Karposh

The refurbished buildings, developed as demonstration projects, have shown that there is an enormous potential to reduce (or slow the growth of) energy consumption and CO_2 emissions in the building sector, often in a very cost-effective way. Large savings can be achieved by optimizing the entire building system instead of improving each element individually. This can only be done during construction or during major renovations.

The tentative activities shall consist of: selection of buildings, development of a technical documentation (main design and revision) and actual construction works for refurbishment of at least two public buildings.

The experience gained in the previous project through refurbishment of the Kindergarten Orce Nikolov in the Municipality of Karposh will be utilized while implementing this activity. The feasibility study for reconstruction of Orce Nikolov indicated that appx. 60% of energy savings is an achievable target with the lowest payback period of the investment. The measures included changes of the façade openings, additional insulation of the roof and walls, installation of solar system for hot sanitary water and isolation of pipes for the heating sub-station and internal improvement of efficiency of the light system are.

Replication of this activity as a role-model for reconstruction in other public buildings in the Municipality of Karposh can lead to significant decrease of municipal energy consumption and will result with significant savings in the municipal budget.

Tentative activities:

1. Activity result: At least two public buildings refurbished as demonstration facilities in the Municipality of Karposh
    1.1. Selection of public buildings
    1.2. Development of technical documentation (main design and revision)
    1.3. Hiring technical supervision
    1.4. Refurbishment of municipal buildings

Baseline:

- Guidelines for refurbishment of public buildings developed
- Two public buildings refurbished in the frame of previous activities

OUTPUT 2: Energy consumption register and upgraded energy monitoring information system developed, including remote metering of energy consumption in public buildings and GIS streetlight energy monitoring system

External Climate and Inventory Tool for Energy efficiency (ExCITE) application is software that was developed by UNDP and is used for continuous energy monitoring in public buildings and streetlight system. The software includes a database of climate and inventory data combined in one overall system. ExCITE is a software tool that connects processes of entering data for buildings, street lighting, energy consumption and energy expenses on the one side and climate data needed for calculating energy performance on the other. For ease of use and access, the software is conceived as an internet application.

Changes of the Law on Energy are in procedure that will make usage of ExCITE a mandatory tool for all public institutions in the country.

Typical energy performance indicators that can be calculated by ExCITE, for any particular building or group of buildings that are in the system are:

- Total energy consumption by energy type for selected time period
- Total costs per energy type for selected time period
- Total energy consumption of all energy types for individual object for selected time period (expressed in kWh and in units of supply e.g. m^3 for natural gas, litres for heating oil etc.)
- Total costs per energy type for individual object for selected time period
- Cumulative energy consumption per energy type for selected time period
- Cumulative energy costs per energy type for selected time period

- Specific energy consumption per energy type for individual object per m^2 of floor area, m^3 of building volume, per persons working in building, etc.
- Comparison of energy consumption of similar individual buildings or group of similar buildings
- Comparison of energy consumption of building for different time period (e.g. same month of different years.)
- Calculation of CO_2 emissions per energy type for individual object or group of objects

For the purposes of the Municipality of Karposh the software will be updated for the following options:

- Remote metering of the energy consumption indicators
- Global Information System for the street light network included
- Calculation and display of energy – temperature curve (E-T curve) for individual objects
- Direct communication between local authorities and building technical personnel.

Expanding the inventory database with all of the buildings in jurisdiction of the municipality is essential for baseline calculation of municipal overall energy consumption. Automatic hour-to-hour energy consumption data gathering, along with the data for the outside temperature, can allow the system to create precise Energy/Temperature (E/T) curve that can easy indicate any malfunction in the system that results with increased consumption. That will allow the municipal energy efficiency teams and building technical personnel an immediate reaction and avoid unnecessary energy loses in the heating system.

Moreover, creating a GIS tool for streetlight system as part of the ExCITE software will improve regulation of energy expenses, decrease the maintenance costs and increase the overall efficiency of this very important communal service.

Tentative activities:

2. Activity result: ExCITE software upgraded according to international best practices
   - 2.1 Drafting a new technical and functional specification for ExCITE and updating the code for ExCITE
   - 2.2 Updating the climate database with average daily temperatures from Hydro-meteorological institute or automatic thermometers
   - 2.3 Updating the inventory database with public buildings bellow $1000m^2$ and in-depth data for the technical systems
   - 2.4 Drafting a specification for (automatic) remote energy metering equipment
   - 2.5 Creation of GIS street light monitoring system and connection to ExCITE
   - 2.6 Procurement and installation of equipment

Baseline:

- ExCITE will be a legal obligation for the local communities with the upcoming changes of the Energy Law.
- Inventory of public buildings above $1000m^2$ created
- Municipal team passed the training for ExCITE usage
- Existing Memorandum of Understandings with Toplifikacija and EVN Macedonia
- Climate database created till December 2009.

Possible Partners:

- EVN Macedonia and Toplifikacija in usage of their remote control system

OUTPUT 3: Capacity of the municipality of Karposh for energy monitoring improved and knowledge and awareness on energy efficiency issues increased

During the previous project, a Local Energy Manager and a Local Energy Administrator were nominated but there is lack of communication between the municipal authorities and the technical maintenance from the individual buildings that are under the responsibility of the municipality. Also, the capacity of the technical maintenance staff at the moment cannot satisfy the requirements of a modern Energy Management System. Additional training of the technical personnel working on maintenance of the

public buildings is necessary for successful and fast response to possible malfunctions of the energy systems in the buildings.

Building upon this basis, the project will further invest in more extensive capacity building programme that will enable the municipal energy teams to better address energy saving issues.

Additionally, a Green Office practice shall be implemented as part of an everyday routine to reduce adverse environmental impacts and increase the efficiency of all use of resources. The introduction of the Green Office will lead in managing energy use as well as reducing the waste produced by the building activities.

The EE team will also answer citizens' questions about energy efficiency improvements in their homes. This will be institutionalized by establishing an on-site EE info points under the auspices of Municipality of Karposh and a web info-points on their webpages offering free advices to general public. Info-points will be connected to already establish Info Centre in the frame of the City of Skopje.

Furthermore, a study-visit will be organized for representatives of municipal personnel in Croatia in the town of Sisak. Sisak represent a pilot city where a modern energy management is being implemented by UNDP Croatia. The study visit will aim to strengthen the capacities of the municipal authorities regarding the latest technology, best practices and financial modalities accessible for successful implementation energy monitoring as well as the municipal energy efficiency programme.

Tentative activities:

3. Activity result: Energy management team created and their capacity improved
   - 3.1 Implementation of a comprehensive capacity building programme for the municipal energy team
   - 3.2 Creation of the on-site and web info-points
   - 3.3 Opening a free info line for the Info point
   - 3.4 Organization of a study visit to the town of Sisak for the municipal EE teams

Baseline:

- Municipal team created
- Energy efficiency team trained on general energy efficiency issues and ExCITE
- Training materials for ExCITE and EE prepared
- Book of rules under preparation
- Communication strategy for energy efficiency prepared
- Posters adopted

Possible Partners:

- GIZ local office- Energy efficiency in capital cities project

III. RESULTS AND RESOURCES FRAMEWORK

Intended Outcome as stated in the Country Programme Results and Resource Framework: challenges3.1. By 2015, national policies better address climate change adaptation and mitigation needs and demonstration programmes respond to climate change challenges;				
Outcome indicators as stated in the Country Programme Results and Resources Framework, including baseline and targets: Indicator: Number of developed (a)energy efficiency and (b)renewable projects baseline Baseline: (a)0 and (b)0, Target: (a)4 and (b)4				
Applicable Key Result Area (from 2010-15 Strategic Plan):				
Partnership Strategy				
Project title and ID (ATLAS Award ID): 00049238				
INTENDED OUTPUTS	***OUTPUT TARGETS FOR (YEARS)***	***INDICATIVE ACTIVITIES***	***RESPONSIBLE PARTIES***	***INPUTS***
Output 1 ***Demonstration energy efficiency measures implemented in at least two public buildings in the municipality of Karposh*** Indicators 1. CO2 emissions decreased per object Gender Marker Rating and Motivation :0 - Outputs that are not expected to contribute noticeably to gender equality	Targets - Public buildings selected - Technical documentation prepared - Public buildings refurbished with energy efficiency measures	***Activity result***: Public buildings refurbished as pilot building throughout the Municipality of Karposh • Selection of public buildings • Development of technical documentation • Hiring technical supervision • Refurbishment of municipal buildings	*UNDP Local Office – implementing partner* *Municipality of Karposh - implementing partner*	Guidelines for refurbishment of public buildings developed Two public buildings refurbished in the frame of previous activities 150.000$ co-funding from the Municipality of Karposh
Output 2 ***Energy consumption register and upgraded energy monitoring information system developed,***	Targets: -ExCITE version updated according to international best	***Activity result***: ExCITE software upgraded according to international best practices	*UNDP Local Office – implementing partner*	ExCITE will be a legal obligation for the local communities with upcoming changes of the Energy Law.

including remote metering of energy consumption in public buildings and GIS streetlight energy monitoring system Indicators: 1. Number of data gathered in ExCITE 2. Percentage of energy consumption decreased Gender Marker Rating and Motivation[1]:0 - Outputs that are not expected to contribute noticeably to gender equality	practices -Remote-metering system installed and energy management system installed	• Drafting a new technical and functional specification for ExCITE according to Croatian Energy Monitoring Information System EMIS • Updating the code for ExCITE according to Croatian EMIS • Updating the climate database with average daily temperatures from Hydro-meteorological institute or automatic thermometers • Updating the inventory database with public buildings bellow 1000m^2 • Drafting a specification for (automatic) remote energy meter equipment • Creation of GIS street light system and connection to ExCITE • Procurement and installation of equipment	*Municipality of Karposh - implementing partner* *UNDP Croatia – Mentor organization*	Inventory of public buildings above 1000m^2 created Municipal teams passed the training for ExCITE usage Existing MoUs with Toplifikacija and EVN Macedonia Climate database created till December 2009.
Output 3 ***Capacity of the municipality of Karposh for energy monitoring improved and knowledge and awareness on energy efficiency issues increased*** Indicators	Targets -Energy management team created -Capacity of municipal energy management team increased	***Activity result:*** Energy management team created and their capacity improved • Implementation of a comprehensive capacity building programme for the energy team • Creation of the on-site and web info-points	*UNDP Local Office – implementing partner* *Municipality of Karposh - implementing partner* *UNDP Croatia – Mentor*	Municipal teams created during previous activities. Energy efficiency team trained on general energy efficiency issues and ExCITE Training materials for ExCITE and EE prepared Book of rules under

[1] ***Gender Rating:*** ***3-*** *Gender equality is a principal objective of the output;* ***2-*** *Gender equality is a significant objective of the output;* ***1-*** *Outputs that will contribute in some way to gender equality but not significantly;* ***0-*** *Outputs that are not expected to contribute noticeably to gender equality. Include a one sentence motivation as to the reason for the chosen rating. For more details, please see* Guidance Note: Tracking Gender-Related Investments and Expenditures in ATLAS

1. Number of municipal personnel assigned and trained 2. Number of educational materials developed Gender Marker Rating and Motivation 0 - Outputs that are not expected to contribute noticeably to gender equality		• Opening a free info line for the Info centre • Organization of study visit to the town of Sisak for the municipal EE team	*organization*	preparation

IV. ANNUAL WORK PLAN

Year: 2012

EXPECTED OUTPUTS *And baseline, indicators including annual targets*	***PLANNED ACTIVITIES*** *List activity results and associated actions*	***TIMEFRAME***				***RESPONSIBLE PARTY***	***PLANNED BUDGET***		
		Q1	Q2	Q3	Q4		Funding Source	Budget Description	Amount
Output 1 ***Demonstration energy efficiency measures implemented in at least two public buildings in the municipality of Karposh***	***Activity result***: Public buildings refurbished as pilot building throughout the Municipality of Karposh					*UNDP - Local Office* *Municipality of Karposh - implementing partner*			
	Selection of public buildings				***X***		UNDP Local Office Municipality of Karposh	N/A	N/A
	Development of technical documentation				***X***		Municipality of Karposh	72100 Contractual Services – Companies	5.000$
Indicators 1. CO2 emissions decreased per object	Hiring technical supervision				***X***		Municipality of Karposh	72100 Contractual Services – Companies	2.000$

Gender Marker Rating and Motivation :0 - Outputs that are not expected to contribute noticeably to gender equality Targets: -Number of public buildings refurbished *Related CP outcome: National policies better address climate adaptation measures and demonstration programmes respond to climate change challenges*	Refurbishment of public buildings				***X***		UNDP Local Office	72100 Contractual Services – Companies	21.700$
Output 2 ***Energy consumption register and upgraded energy monitoring information system developed, including remote metering of energy consumption in public buildings and GIS streetlight energy monitoring system*** Indicators: 3. Number of data gathered in ExCITE	***Activity result***: ExCITE software upgraded according to international best practices					*UNDP - Local Office* *Municipality of Karposh - implementing partner* *UNDP Croatia –*			
	Drafting a new technical and functional specification for ExCITE according to Croatian Energy Monitoring Information System EMIS				***X***		UNDP - Local Office	71300 Local consultants	1.000$
	Updating the code for ExCITE according to Croatian EMIS				***X***			72100 Contractual services - companies	12.000$

4. Percentage of energy consumption decreased Gender Marker Rating and Motivation[2]:0 - Outputs that are not expected to contribute noticeably to gender equality *Related CP outcome: National policies better address climate adaptation measures and demonstration programmes respond to climate change challenges*	Updating the inventory database with public buildings bellow 1000m^2				***X***	*Mentor organization*		72100 Contractual services - companies	500$

[2] ***Gender Rating:*** ***3-*** *Gender equality is a principal objective of the output;* ***2-*** *Gender equality is a significant objective of the output;* ***1-*** *Outputs that will contribute in some way to gender equality but not significantly;* ***0-*** *Outputs that are not expected to contribute noticeably to gender equality. Include a one sentence motivation as to the reason for the chosen rating. For more details, please see* Guidance Note: Tracking Gender-Related Investments and Expenditures in ATLAS

Output 3 ***Capacity of the municipality of Karposh for energy monitoring improved and knowledge and awareness on energy efficiency issues increased*** Indicators 1. Number of municipal personnel assigned and trained 2. Number of educational materials developed Targets - Energy management team created -Educational materials prepared Gender Marker Rating and Motivation 0 - Outputs that are not expected to contribute noticeably to gender equality *Related CP outcome: National policies better address climate adaptation measures and demonstration programmes*	***Activity result:*** Energy management team created and their capacity improved					*UNDP - Local Office* *Municipality of Karposh - implementing partner* *UNDP Croatia – Mentor organization*			
	Creation of the on-site and web info-points				***X***		UNDP - Local Office	72100 Contractual services - companies	1.000$
	Opening a free info line for the Info centre				***X***		Municipality of Karposh	72100 Contractual services - companies	500$

respond to climate change challenges	Organization of study visit to the town of Sisak for the municipal EE team				***X***			71600 Travel 72100 Contractual services – companies 72400 Communication and visibility	4.000$ 500$
Activities Total									48.200$
71400 Contractual services – individual									1.700$
Total									49.900$

Year: 2013

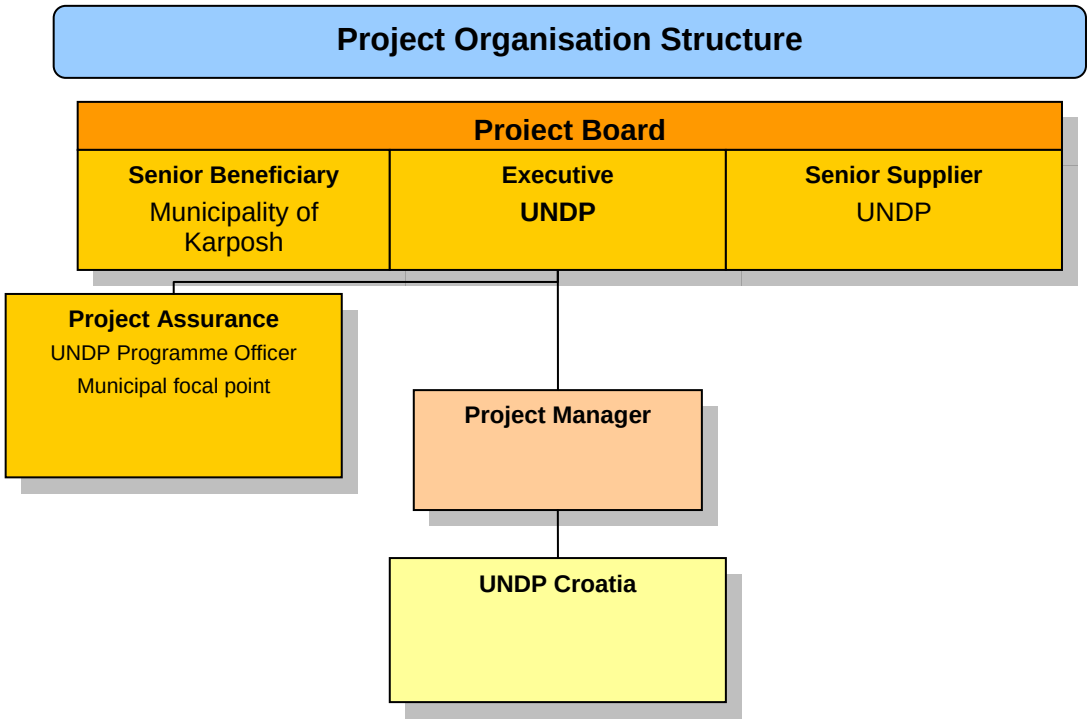
EXPECTED OUTPUTS *And baseline, indicators including annual targets*	***PLANNED ACTIVITIES*** *List activity results and associated actions*	***TIMEFRAME***				***RESPONSIBLE PARTY***	***PLANNED BUDGET***		
		Q1	Q2	Q3	Q4		Funding Source	Budget Description	Amount
Output 1 ***Demonstration energy efficiency measures implemented in at least two public buildings in the municipality of Karposh***	***Activity result***: Public buildings refurbished as pilot building throughout the Municipality of Karposh					*UNDP - Local Office* *Municipality of Karposh - implementing partner*			
	Hiring technical supervision	***X***					Municipality of Karposh	72100 Contractual services - companies	2.000$
Indicators 1. CO2 emissions decreased per object Gender Marker Rating and Motivation :0 - Outputs that are not expected to contribute noticeably to gender equality Targets: -Number of public buildings refurbished *Related CP outcome: National policies better address climate adaptation measures and demonstration programmes respond to climate change challenges*	Refurbishment of public buildings	***X***	***X***				Municipality of Karposh UNDP Local Office	72100 Contractual services - companies	139.500$ 37.700$

Output 2 ***Energy consumption register and upgraded energy monitoring information system developed, including remote metering of energy consumption in public buildings and GIS streetlight energy monitoring system*** Indicators: 5. Number of data gathered in ExCITE 6. Percentage of energy consumption decreased Gender Marker Rating and Motivation[3]:0 - Outputs that are not expected to contribute noticeably to gender equality *Related CP outcome: National policies better address climate adaptation measures and demonstration programmes respond to climate change challenges*	***Activity result***: ExCITE software upgraded according to international best practices					*UNDP - Local Office* *Municipality of Karposh - implementing partner* *UNDP Croatia – Mentor organization*			
	Updating the climate database with average daily temperatures from Hydro-meteorological institute or automatic thermometers	***X***						72100 Contractual services - companies	2.500$
	Drafting a specification for (automatic) remote energy meter equipment	***X***						71300 Local consultants	1.500$
	Creation of GIS street light system and connection to ExCITE	***X***	***X***	***X***	***X***			71300 Local consultants 72100 Contractual services - companies	1.500 10.000$
	Procurement and installation of equipment	***X***	***X***	***X***	***X***			72100 Contractual services - companies	30.000$
Output 3 ***Capacity of the municipality of Karposh for energy monitoring***	***Activity result:*** Energy management team created and their capacity improved					*UNDP - Local Office*			

[3] ***Gender Rating:*** ***3-*** *Gender equality is a principal objective of the output;* ***2-*** *Gender equality is a significant objective of the output;* ***1-*** *Outputs that will contribute in some way to gender equality but not significantly;* ***0-*** *Outputs that are not expected to contribute noticeably to gender equality. Include a one sentence motivation as to the reason for the chosen rating. For more details, please see* Guidance Note: Tracking Gender-Related Investments and Expenditures in ATLAS

improved and knowledge and awareness on energy efficiency issues increased Indicators 3. Number of municipal personnel assigned and trained 4. Number of educational materials developed Targets - Energy management team created -Educational materials prepared Gender Marker Rating and Motivation 0 - Outputs that are not expected to contribute noticeably to gender equality *Related CP outcome: National policies better address climate adaptation measures and demonstration programmes respond to climate change challenges*	Implementation of a comprehensive capacity building programme for the municipal Energy team	***X***	***X***	***X***	***X***	*Municipality of Karposh - implementing partner* *UNDP Croatia – Mentor organization*	UNDP Local Office Municipality of Karposh	72500 Supplies 72400 IT Equipment 72100 Contractual services – companies Communications and visibility	200$ 300$ 5.000$ 1000$
								Activities Total	229.700$
								71400 Contractual services – individual	20.400$
								TOTAL	250.100$

V. MANAGEMENT ARRANGEMENTS



The Project will be executed according to the National Implementation Modality (NIM) under the overall responsibility of the Municipality of Karposh. UNDP (CO) will provide support to the execution of the project through provision of technical assistance and policy advice. The Municipality of Karposh and UNDP will be responsible for timely and quality delivery of the project results, and will ensure close collaboration and coordination with all relevant stakeholders on national and local level.

UNDP and the Municipality of Karposh agree that the UNDP Country Office will provide the following support services for the project activities at the request of the Municipality of Karposh:

(a) Identification and/or recruitment and solution of administrative issues related to the project personnel;
(b) Procurement of commodities, labor and services;
(c) Identification and facilitation of training activities, seminars and workshops;
(d) Processing of direct payments;
(e) Financial monitoring and reporting;
(f) Supervision of project implementation, monitoring and assistance in project assessment;
(g) Communication with an aim to ensure transparency, accountability and results reporting.

In providing such support services, the UNDP Country Office shall ensure that the capacity of the Municipality of Karposh is strengthened especially through participation of the Municipality of Karposh representative in the evaluation committees and recruitment panels with a voting right.

When providing the above support services, the UNDP Country Office will recover the costs for providing Implementation Support Services on the basis of actual costs and transaction fee based on the Universal Price List and other corporate policies.

The procurement of goods and services and the recruitment of project personnel and consultants by the UNDP Country Office shall be in accordance with the UNDP regulations, rules, policies and procedures.

A Project Board (PB) will be established to serves as a main project coordinating body that will formally steer the implementation of the project.

The core responsibilities include:

- Facilitation of the institutional arrangements that are necessary for effective project implementation;
- Endorsement of work plans and ensuring of their adherence to project priorities;
- Periodic oversight of financial activities and programme achievements; and
- Review and endorsement of financial and project progress reports.

The Project Board will comprise of the Mayor of the Municipality of Karposh or a representative nominated by him, the Deputy Resident Representative of UNDP CO or other senior level person nominated by him and a representative from the Association of Local Self-Governments ZELS). The Project Board meetings will be organized as needed, but not less than once a year.

The Municipality of Karposh will appoint a focal point to coordinate activities with the UNDP Programme Officer (PO) and to provide technical inputs to the day-to-day implementation of the project. The Municipality of Karposh Focal Point and UNDP Programme Officer will play a role of a Project Assurance.

The Project Manager (PM) under the guidance of the Project Board and in close collaboration with the Municipality of Karposh delivers the project results, provides advisory services to the national counterparts and ensures the transfer of UNDP's worldwide experience and knowledge in the respective areas to the project partners and beneficiaries.

Any assets purchased with the project funds will be transferred to the national counterpart and/or project beneficiary as per the standard UNDP procedure.

VI. MONITORING FRAMEWORK AND EVALUATION

In accordance with the programming policies and procedures outlined in the UNDP User Guide, the project will be monitored through the following:

Within the annual cycle

- On a quarterly basis, a quality assessment shall record progress towards the completion of key results, based on quality criteria and methods captured in the Quality Management table adopted by the Project Board.
- An Issue Log shall be activated in Atlas and updated by the Project Manager to facilitate tracking and resolution of potential problems or requests for change.
- Based on the initial risk analysis (Annex 1), a risk log shall be activated in Atlas and regularly updated by reviewing the external environment that may affect the project implementation.
- Based on the above information recorded in Atlas, a Project Progress Reports (PPR) shall be submitted by the Project Manager to the Project Board through Project Assurance, using the standard report format available in the Executive Snapshot.
- A project Lesson-learned log shall be activated and regularly updated to ensure on-going learning and adaptation within the organization, and to facilitate the preparation of the Lessons-learned Report at the end of the project.
- A Monitoring Schedule Plan shall be activated in Atlas and updated to track key management actions/events.

Annually

- ***Annual Review Report***. An Annual Review Report shall be prepared by the Project Manager and shared with the Project Board and the Outcome Board. As minimum requirement, the Annual Review Report shall consist of the Atlas standard format for the QPR covering the whole year with updated information for each above element of the QPR as well as a summary of results achieved against pre-defined annual targets at the output level.
- ***Annual Project Review***. Based on the above report, an annual project review shall be conducted during the fourth quarter of the year or soon after, to assess the performance of the project and appraise the Annual Work Plan (AWP) for the following year. In the last year, this review will be a final assessment. This review is driven by the Project Board and may involve other stakeholders as required. It shall focus on the extent to which progress is being made towards outputs, and that these remain aligned to appropriate outcomes.

Financial Audit

The project will be subject to an audit, at least once during its life span and according to applicable UNDP rules and procedures.

VII. LEGAL CONTEXT

This project document shall be the instrument referred to as such in Article 1 of the SBAA between the Government and UNDP, signed on October 30th 1995.

Consistent with the Article III of the Standard Basic Assistance Agreement, the responsibility for the safety and security of the executing agency and its personnel and property, and of UNDP's property in the executing agency's custody, rests with the executing agency.

The executing agency shall:

a) put in place an appropriate security plan and maintain the security plan, taking into account the security situation in the country where the project is being carried;

b) assume all risks and liabilities related to the executing agency's security, and the full implementation of the security plan.

UNDP reserves the right to verify whether such a plan is in place, and to suggest modifications to the plan when necessary. Failure to maintain and implement an appropriate security plan as required hereunder shall be deemed a breach of this agreement.

The executing agency agrees to undertake all reasonable efforts to ensure that none of the UNDP funds received pursuant to the Project Document are used to provide support to individuals or entities associated with terrorism and that the recipients of any amounts provided by UNDP hereunder do not appear on the list maintained by the Security Council Committee established pursuant to resolution 1267 (1999). The list can be accessed via http://www.un.org/Docs/sc/committees/1267/1267ListEng.htm. This provision must be included in all sub-contracts or sub-agreements entered into under this Project Document.

VIII. ANNEXES

Annex 1 – Risk Analysis

Risk Description	*Category*	*Impact & Probability*	*Countermeasures / Management response*	*Owner*	*Author*	*Date Identified*	*Last Update*
Deficiency of appropriate and reliable data and/or unwillingness of institutions to provide data/information in their possession	Political	Medium	The project team will take stock of all relevant resources of data/information and will invite related institutions to participate in the project implementation. The Law on Free Access to Information also provides legal framework for getting the required data	Municipality of Karposh	Project Manager	September 2012	September 2012
Election on local level could delay implementation of activities	Political	Medium	The project team will have to adjust the project work plans if necessary	UNDP	Project Manager	September 2012	September 2012
Exchange Range fluctuation	Financial	Medium	The project team will monitor the exchange fluctuation during the project implementation and if necessary, to readjust the AWP and delivery projections	UNDP	Project Manager	September 2012	September 2012
Insufficient interest and knowledge on energy efficiency issues especially on local level	Strategic	Medium	The project will utilize the lessons learnt from similar projects that involved stakeholders on local level and develop specific activities that will increase the awareness and knowledge of targeted groups of stakeholders	UNDP	Project Manager	September 2012	September 2012

Annex 2:

Terms of Reference
Project Manager

DUTIES AND RESPONSIBILITIES

Under the direct supervision of the National Project Coordinator (NPC) and UNDP Programme Officer (PO) and the overall guidance of the Project Board (PB), the Project Manager will assume the following responsibilities:

S/he will:

- Ensure timely preparation and submission of yearly/quarterly project work and budget plans and reports;
- Manage funds (budget planning and ensuring payments) and delivery of substantive results in line with the work plan approved by PB;
- Record and resolve project issues occurring during the implementation within the tolerance level initially defined by PB;
- Report issues to the Project Board with recommendations to seek for solutions to project issues that exceed the defined tolerance level;
- Identify specific activities and timing in which support of consultants or by specific project personnel is required , and engage them in accordance with UNDP rules and regulations;
- Provide appropriate technical inputs both to the project and the Municipality of Karposh when required;
- Assist with the organization of the project board meetings;
- Analyse and evaluate achieved results regularly to ensure that the project is meeting the target beneficiaries' needs, while communicating them to all PB members;
- Contribute to formulation of new project concepts complementary to the on-going project initiatives;
- Contribute to resource mobilization for the projects related to the disaster risk management.

QUALIFICATIONS

Knowledge and Skills	University degree in related field (higher an asset). Strong knowledge of energy efficiency is preferred. Excellent computer literacy (MS Office; Windows XP), excellent communication, negotiation, report writing and analytical skills.
Experience:	Three years of professional experience in project management and the related administrative and/or financial operations, preferably on similar projects.
Languages:	Language proficiency in both written and oral English and Macedonian.