

## **RESPONSE TO COMMENTS FROM COUNCIL MEMBERS**

### **FRANCE**

“This project lists the products and technologies typically used for electricity demand management: energy-saving lighting, controlled and efficient air conditioning, solar water heating, and the like. The classic actions for assisting decision making and promoting awareness (preparation of guides, seminars, advertising campaigns, diagnostic studies) are listed, but no details are provided. The brief does not provide enough information of electricity tariffs and usage patterns for the reader to determine whether simple measures proposed will prove effective. The description of the arrangements for implementing demand side management is superficial”.

#### **Response**

The project outputs and activities have been elaborated in greater detail in the project document. Additional, updated information on electricity tariffs, usage patterns and general energy sector reform process has been added (see pages 6-17).

Due to the complications encountered with the involvement of the local power utility, the situation in terms of introducing the concept of Demand Side Management has been updated and the implementation arrangements of the CFL component have been revised accordingly.

Some additional details have been included to elaborate the foreseen content and to monitor the progress of the public awareness raising activities (e.g see Annex X, the Monitoring and Evaluation Plan). It is suggested, however, that best results are achieved, if some flexibility will be left for the project management team and a detailed implementation plan and the selection of the most effective channels and methods to raise the public awareness will only be finalized at the outset project operations after the situation in terms of the current level of awareness and the best channels to raise it have been re-evaluated.. It should also be noticed that the free “walk-through” energy audits are considered to be some of the main tools to raise the awareness of the management and operating personnel of the commercial and public buildings on the available, cost effective energy saving measures.

### **Switzerland**

#### **General Commentaries**

“The proposed project relates well to the GEF Operational Program #5 and national/regional priorities. It aims at product based energy efficiency measures such as the massive introduction of efficient lighting (CFL). The CO<sub>2</sub> abatement costs seem quite favorable. The project seems very suitable for residential sector, where the product approach can certainly have a large impact.”

#### **Main Concerns**

“The supply driven approach, mainly product based (efficient lighting, efficient burners, etc.) is likely to be of limited impact. The largest CO<sub>2</sub> abatement potential in hotels is certainly in a global energy efficiency approach, which includes demand side management (e.g. HVAC system

optimization, ...) and which does not always require investment. Energy efficiency impact can only be sustainable when hotels staff are trained for energy efficiency management on site.”

## **Conclusions and Recommendations**

“It would be recommended to consider strategies of intervention in the service sector based on active participation of the hotel industry in the form of working groups. The co-ordination with the project financed by the Government of Norway in Croatia entitled “Industrial Energy Efficiency Network in Croatia”, (which is of very short duration) should be encouraged.”

*Pilot and demonstration cases integrating energy efficiency measures without investment as well as with investment (e.g. CFL, new boilers,..) well documented and shared among the hotel industry would help in developing sustainable energy efficiency approach in the hotel industry.*

## **Response**

The recommendations are valid and have been taken into account in the project document and will be taken into account during its further implementation.

The possible role of both investment and non-investment measures in the supply and demand side have been highlighted e.g. in pages 12-13. The objective of the project is indeed to have an integrated approach to improving the energy efficiency of the targeted clients, starting with energy audits that are to evaluate the possibilities for both supply and demand side measures.

Through its monitoring and evaluation component, one of the envisioned key outcomes of the project is to document and share the results, experiences and lessons learnt with the first demonstration projects. The representatives of the hotel industry and other key stakeholders will be involved in the implementation of the project e.g. through seminars, workshops and, as applicable, through the establishment of specific working groups.

The Energy Institute Hrvoje Pozar will be responsible for the co-ordination with the activities financed by the Government of Norway as they have been the main local counterpart agency for both the UNDP/GEF and Government of Norway financed activities.

## RESPONSE TO THE COMMENTS OF THE GEF SECRETARIAT

1) *The CFL strategies outlined are good. Further incorporation of strategies and experience from the IFC/GEF Efficient Lighting Initiative might enhance implementation further.*

Given the complications encountered with the envisioned co-operation with the local utility, the CFL strategy has been somewhat amended from its original design. For more details see pages 20-21 of the project document. In its current form, more emphasis is put on closer co-operation with the CFL manufacturers. Otherwise, the key characteristics of the CFL strategy that have proved to be cost-effective also in other projects (including the IFC/GEF Efficient Lighting Initiative) have remained. These characteristics include: (i) no or low per lamp subsidies; (ii) focus on leveraging private sector contributions and retail/markup multiplier effects; and (iii) high marketing and distribution cost effectiveness.

2) More detailed strategies for other technology applications in the residential sector, such as refrigerators and solar hot water, would be advisable in the project design itself, rather than awaiting implementation experience with the CFLs. To this end, the project may benefit from the experience and approaches from the China Efficient Refrigerators project and the Morocco and Tunisia solar hot water projects.

*Given the fact that the project is the first of its kind in Croatia to promote concrete energy efficiency measures in the residential sector and as such is associated with certain uncertainties and risks, further consultations with the relevant Government counterparts indicated that it would be more feasible to first accumulate some experience on the success and cost-efficiency of the different promotional activities implemented in the context of the CFL-campaign and only after that expand the scope of the project for other technology applications. Expanding the detailed design of the project to other technology applications already at this stage would also significantly complicate the overall project design and shift the focus from getting the first CFL-component successfully under implementation.*

*At a later stage, in an effort to define a strategy for promoting other energy efficient technologies in the residential sector based on the experiences with the first CFL-campaign, the experiences and lessons learnt in the China and Tunisia refrigerator projects and the Morocco solar hot water project can be utilized to the maximum extent taking into account the technology, but also the country specific aspects. In that regard, the project also tries to avoid an entirely technology driven approach, but foresees to address several institutional, awareness and information related barriers that are often more country and sector than technology specific.*

3) Specific project mechanisms for replicating commercial sector “quasi-ESCO” experience developed under the project, particularly replication in the private sector, would be desirable (rather than simply expecting such replication to occur, as implied by the last sentence of paragraph 41.

*The description of the project replication strategy has been strengthened. The driving mechanism for promoting the replication of the “quasi-ESCO” experience in the private sector will be the close monitoring and documentation of the first pilot/demonstration projects and, if proven successful, active dissemination of the experiences and lessons learnt to the private sector. As an essential part of its activities, the project will also build a strong pipeline of “bankable” energy efficiency project proposals, thereby paving the way for the private sector to enter into concrete negotiations about the further development and financing of these projects.*

4) *The project could incorporate some activities that would support power sector reforms favorable to energy efficiency and renewable energy. The results of the GEF STAP Bangalore workshop on power sector reform will be available shortly, and some strategies recommended in the workshop could be considered for the present project.*

The recommendations of the GEF STAP Bangalore workshop have been summarized in the document released for the GEF Council in November 2000 (GEF/C.16/Inf.15) and they have been taken into account in finalizing the project document. Although many recommendations are linked more to the effort to increase the use of renewable energy sources in power generation, the project strategy and proposed activities have been formulated in line with the recommendations that can be applied both for the promotion of renewable energy and energy efficiency, emphasizing, among others, the importance of:

- promoting the energy efficiency aspects as a part of the overall energy sector reform;
- intervening at different levels and targeting simultaneously with applicable awareness raising and capacity building activities and innovative financing and risk mitigation instruments different group of stakeholders, including project developers, possible financiers, public authorities, energy producers and energy users;
- avoiding a technology driven approach, but providing applicable models and trying to establish a sustainable institutional a financial framework for promoting energy efficiency measures in general in the targeted sectors;
- recognizing the complexity of the power and energy sector reform process already on its own, calling for a pragmatic and step-by-step introduction of energy efficiency and environmental aspects into the restructuring process as “win-win” opportunities.

5) *Concrete mechanisms for NGO participation need to be specified.*

The mechanisms for NGO participation have been elaborated in further detail (e.g. page 20).

6) *The market surveys mentioned in the project planning matrix should be elaborated – by whom, when, for what target groups etc.*

The framework and implementation arrangements of the market surveys have been specified in the project planning matrix.

**UNITED NATIONS DEVELOPMENT PROGRAMME  
GLOBAL ENVIRONMENT FACILITY**

**Project of the Government of Croatia**

**Project number:** CRO/00/G31/A/1G/99  
**PIMS:** 715  
**Project title:** Croatia – Removing Barriers to Improving Energy Efficiency of the Residential and Service Sectors  
**Estimated start date:** February, 2004  
**GEF Imp. Agency:** UNDP  
**Estimated end date:** December, 2007  
**Executing agency:** Ministry of Economy  
**Implementing agency:** Energy Institute "Hrvoje Požar"  
**Project site:** Croatia  
**LPAC meeting:** February 27 & March 3, 2003  
**GEF Focal Area:** Climate Change

**Financing:**

**GEF:**

Project: US\$ 4,390,000  
 PDF B: US\$ 200,880

**Co-financing:**

Gov. of Croatia: US\$ 670,000 (in-kind)  
 Private sector: US\$ 7,990,000 (equity, credits and loans)

PDF B: US\$ 175,000 (in-kind)

**Total Project Costs: US\$ 13.05 million (w/out the PDF B)**

**Associated Financing: USD 150,000 (the Government of Norway)**

**GEF Operational Program:** OP#5 - "Removal of Barriers to Energy Efficiency and Energy Conservation".

**ACC/UNDP sector:** 0500 Energy

**ACC/UNDP subsector:** Energy Efficiency

**Brief Description:** The project is to remove the key barriers to the implementation of economically feasible energy efficiency technologies and measures in the residential and service sectors in Croatia, thereby reducing their energy consumption and the associated greenhouse gas emissions. The initial focus of the project will be on the counties of Istria and Rijeka, after which the activities are sought to be replicated in other parts of the country. In that regard, the project looks forward to co-operate also closely with the related World Bank/GEF financed energy efficiency project in Croatia.

<b>On behalf of:</b>	<b>Signature</b>	<b>Date</b>	<b>Name/title</b>
The Government:	_____	_____	_____
Executing agency:	_____	_____	_____
UNDP:	_____	_____	_____

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## LIST OF ABBREVIATIONS

<b>CEFTA</b>	<i>Central European Free Trade Association</i>
<b>CFL</b>	<i>Compact Fluorescent Lighting</i>
<b>EIHP</b>	<i>Energy Institute "Hrvoje Požar"</i>
<b>ESCO</b>	<i>Energy Service Company</i>
<b>EU</b>	<i>European Union</i>
<b>GDP</b>	<i>Gross Domestic Product</i>
<b>GEF</b>	<i>Global Environment Facility</i>
<b>GHG</b>	<i>Greenhouse Gas</i>
<b>GNP</b>	<i>Gross National Product</i>
<b>HBOR</b>	<i>Croatian Bank For Reconstruction And Development</i>
<b>HEP</b>	<i>Croatian Electric Power Utility</i>
<b>IEEN</b>	<i>Norwegian Industrial Energy Efficiency Network</i>
<b>IPCC</b>	<i>Intergovernmental Panel on Climate Change</i>
<b>Kn</b>	<i>Kuna</i>
<b>KOGEN</b>	<i>Croatian National Energy Program - Cogeneration</i>
<b>KUENbuilding</b>	<i>Croatian National Energy Program – Energy Efficiency In Buildings</i>
<b>KUENcts</b>	<i>Croatian National Energy Program – Energy Efficiency In Centralized Thermal Systems</i>
<b>MIEE</b>	<i>Croatian National Energy Program – Industrial Energy Efficiency</i>
<b>NEAP</b>	<i>National Environmental Action Plan</i>
<b>NGO</b>	<i>Non Governmental Organization</i>
<b>NPP</b>	<i>Nuclear Power Plant</i>
<b>PAP</b>	<i>Priority Actions Program</i>
<b>PDF</b>	<i>Project Development Facility</i>
<b>PMU</b>	<i>Project Management Unit</i>
<b>PROHES</b>	<i>Croatian Energy Sector Development And Organization Project</i>
<b>PSC</b>	<i>Project Steering Committee</i>
<b>TOR</b>	<i>Terms Of Reference</i>
<b>TRANCRO</b>	<i>Croatian National Energy Program – Energy Efficiency In Transport</i>
<b>UN FCCC</b>	<i>United Nations Framework Convention On Climate Change</i>
<b>UN OPS</b>	<i>United Nations Office For Project Services</i>
<b>UNDP</b>	<i>United Nations Development Program</i>
<b>WB</b>	<i>World Bank</i>

## **A. CONTEXT**

### **1. Description of subsector**

#### **General Political and Economic Data**

The Republic of Croatia is one of the successor states of former Socialist Federal Republic of Yugoslavia (ex-Yugoslavia was a federal union with six constituent members). On 25 June 1991, the Republic of Croatia issued its declaration of independence (the declaration came into force on 8 October 1991). On 15 January 1992 independence of the Republic of Croatia was recognized internationally. Under the constitution of 2001, Croatia is a multi-party democracy with an economy based on market principles and private ownership. According to the Croatian Constitution, the highest legislative authority is the parliament and parliamentary members are elected for a term of 4 years. Croatia is a member of a multitude of multilateral associations such as the World Trade Organization and the Central European Free Trade Agreement, and has signed the Stabilization and Association Agreement with the European Union. All present activities are focused toward Croatia's long-term goal, which is to become a full member of the European Union.

#### **Economic Outlook**

After the 1999 recession, Croatian economic output grew by an unexpectedly high 3.5% in real terms, bolstered in particular by tourism and private consumption. The prospects for a positive development of Croatia in the future are very bright if the initiated reforms are consistently implemented.

Agriculture (including fishing and forestry) currently accounts for about 9% of GDP. In 1990 its share in GDP was nearly 10%. A total of 150,000 independent farmers and 31,000 employed persons work in this sector. About 20,000 sq km of the total territory is devoted to agriculture. Over 80% of this land is privately owned.

Industry currently accounts for about 30% of GDP (1990-26,1%). Industrial output has been seriously impacted by the wars in the years since independence and has fallen to just over 60% of the 1990 level in real terms. Nearly 300,000 people are employed in industry, about 25% of the total national workforce. The key industrial sectors are food processing (nearly 20% of total industrial production) followed by chemicals (9%), metal-working (5%) and paper (4.5 %). Industrial exports make up about 97% of total Croatian exports. The positive economic climate for these goods allowed Croatia to increase its industrial output by some 1,7% in real terms in 2000 following a slight decline in 1999.

Construction is another important sector, which accounted for 5.5% of GDP in 2000. About 70,000 people are currently employed in construction at more than 11,200 business. Growth prospects for this sector are very good, especially in war-torn regions.

The tertiary (service) sector is by far the most important part of the economy in Croatia, making up some two-thirds of GDP. Tourism, concentrated along the Adriatic coast, is an extremely important segment in this sector, accounting for 5% of GDP and 6.3% of the total workforce. Foreign exchange revenues from tourism are US\$ 3.4 billion, following the stabilization of the situation in the Balkan region. Tourism as a prospective branch of tertiary sector, accounted for one-third of Croatia's total foreign exchange revenues.

Almost 50% of Croatian economic entities engage in distributive trade. This activity employs 15% of the total workforce and generates about 10% of the Croatian GDP, which makes it extremely important for the entire economy. Manufacturing and mining generally account for approximately one-third of GDP and employ around one third of the labor force. Industrial activities decreased



substantially between 1990 and 2000 and the relative share of industry and mining as a percentage of total GDP has decreased. The largest sectors of industrial production have been electrical engineering, food products, chemicals, pharmaceuticals, textiles, wood processing and shipbuilding.

#### *Recent social and economic indicators*

Indicator	Year	
Population	2001	4,437.460
Area (km <sup>2</sup> )		56,538
GNI, Atlas method (current US\$ billion)	2002	20,3
GNP per capita, Atlas method (current US\$)	2002	4,640
GDP (US\$ million, current prices)	2002	22,436
GDP per capita (US\$)	2002	5,057
Industrial output (% change 2000 – 2002)		3,7
Inflation rate (%)	2002	2,3
Unemployment rate (%)	2002	14,5
Central budget balance (% of GDP)	2002	-2,5
Croatian National Bank discount rate (%)	2002	4,50
Croatian National Bank exchange reserves (US\$ million)	2002	5,886.00
Investment grade rating	2002	BBB-
Currency		Kuna (HRK) = 100 lipa (lp)
Average exchange rate HRK:EUR	2002	7,3700:1
Average exchange rate HRK:USD	2002	8,3391:1
Import of goods (US\$ million)	2002	10,714
Export of goods (US\$ million)	2002	4,889
Agriculture (% share in GDP)	2001	9,7
Industry (% share in GDP)	2001	34,2
Services (% share in GDP)	2001	56,1
Overall tourist traffic: Number of tourists (million)	2002	8,3
Overall tourist traffic: Income (US\$ million)	2002	3,8
CO <sub>2</sub> emissions (kt)	2001	21,400.00
CO <sub>2</sub> emissions per capita (t)	2001	4,59

Source: Ministry of Finance, Croatian National Bank, Croatian Bureau of Statistics, Ministry of Economy, The World Bank Group.

## **Energy Sector**

In 2002, households accounted for 31.1% and the service sector for 10.5% of Croatia's final energy demand of 232.22 PJ. These sectors were responsible for 14.7% of total CO<sub>2</sub> emissions of 21.4 million tons. Within the above mentioned sectors, the direct utilization of fossil fuels accounted for 47.2% of the total demand, while electricity and centralized thermal systems accounted for 34.3% and 7.8% respectively. Fuel wood was responsible for 10.7% of the total final energy demand.

In the baseline scenario of the Energy Sector Development Strategy of the Republic of Croatia (2002), energy consumption of the households and the service sector was estimated to increase from 96.6 PJ in 1998 to 169 PJ by the year 2030 (with the share of electricity remaining at 37% of the final energy consumption). In the absence of any specific measures to promote energy efficiency, this scenario assumes slow inclusion of new energy efficient technologies in the energy sector. This scenario has been presented as the baseline scenario in the National Communication of Croatia to the UNFCCC and as such has been used as a baseline also for the proposed project.

Natural gas had the highest share of 40.1% in primary energy production in 2002. Natural gas is followed by hydropower and crude oil with the share of hydropower being at 28.0% and crude oil at 25.3%. Coal is not present in Croatia's primary energy production since 1999, which was the last coal production year. Nuclear energy (Croatia co-owns the Krsko NPP with Slovenia) provides 17.3 percent of total installed thermal capacity. However, due to international disputes, Croatia has, since 2000 irregularly utilized energy from Krsko NPP. The share of natural gas in total primary energy

supply in 2002 was 29.1 percent, up from the 2001 low of 28.4 percent. The share of liquid fuels was 50.3 percent. The share of fuel steadily diminished to reach 3.6 percent, while the share of coal in total primary energy supply was at 5.6 percent. Croatia's total primary energy supply in 2002 was 376.44PJ.

In 2002, electricity had the largest share in final energy consumption of households with 29.6 percent, followed by natural gas (26.1%), liquid fuel (21.0%), fuel wood (14.3%), centralized thermal systems (8.5%) and coal (0.4%). Electricity dominated the service sector as well with 48.2 percent share in the final energy demand, followed by liquid fuels (27.8%), natural gas (17.5%), centralized thermal systems (5.7%) and coal (0.8%).

Total electricity consumption in 2002 was 12,692.3 GWh divided between three main categories: Traffic - 281.3 GWh; Industry - 2,890.4 GWh; and Other sectors - 9,520.6 GWh. The category "Other sectors" can be further divided into a) Households - 5,954.2 GWh; b). Services - 3,251.0 GWh; c) Agriculture - 67.0 GWh; and d) Construction - 284.4 GWh.

The energy sources currently used for electricity generation are hydro, coal, natural gas, fuel oil and nuclear energy. Today, coal (low-sulfur coal) is supplied only from imports. In the future, it is expected that natural gas will be supplied mainly from imports, while fuel oil demand will be covered 50% from imports and 50% from domestic reserves. The long term marginal costs for new power generation, transmission and distribution capacity have been estimated at approximately US\$ 0.07 per kWh.

## **2. Host country strategy**

The Government of Croatia is actively supporting energy efficiency and renewable energy programs. In 1994, the Government approved a research project named PROHES (Development and Organization of the Croatian Energy Sector). The project aims to lay the foundation for the development of the Croatian energy sector in all its segments, taking into account the technical, legislative, economic, financial and educational aspects. In 1997, the work on ten National Energy Programs was initiated with the focus on energy efficiency, the use of renewable energy sources and environmental protection.

Energy efficiency is covered by the following energy programs: KUEN<sub>BUILDING</sub> (Energy Efficiency in Buildings), MIEE (Industrial Energy Efficiency Network), KOGEN (Cogeneration Program), KUEN<sub>CTS</sub> (Energy Efficiency in Centralized Thermal Systems), and TRANCRO (Energy Efficiency in Transport). These programs include all the main areas of energy consumption, in which energy efficiency can be increased.

The "Energy Sector Development Strategy of the Republic of Croatia" is based on the research conducted through the National Energy Programs within the PROHES Project. When defining strategic goals, care was taken to preserve national interests while taking into consideration energy market development trends in the European Union and other developed countries. High priority is given to the efficient use of energy and the increasing use of renewable energy sources.

The First National Communication of Croatia to the UNFCCC was completed in 2001. The document identifies the energy sector as crucial in the abatement of GHG. Demand side management measures (especially CFLs) envisaged to be undertaken under the auspices of the UNDP/GEF project "Removing Barriers to Improving Energy Efficiency of the Residential and Service Sectors" have been identified among priority measures for the reduction of GHG emissions in Croatia. Other priority measures include:

- the increase in the efficiency of electricity production, transport and distribution,
- demand side management measures in households and services,

- utilization of low-carbon fuels,
- utilization of wind energy,
- utilization of hydro energy,
- utilization of biomass and waste for electricity generation,
- utilization of nuclear energy.

## Greenhouse Gas Emissions in Croatia

The First National Communication to the UN FCCC shows GHG emission trends for the period 1990–1995. During the entire 1990-1995 period, emissions declined by approximately 45 percent, and the most dramatic reduction has been noted between 1991 and 1992 (26 percent). The decrease continues after 1992 at a somewhat slower pace, to reach its minimum in 1994, while the mild increase in emissions was recorded during the last year analyzed. Such emission trends are a direct consequence of the specific situation in the Republic of Croatia during the 1991-1995 period, when wartime events and separation from the former Yugoslavia influenced the overall situation. The general decrease in business activities and energy demand was felt throughout the country. Further, with the entire economy in transition, some energy-intensive industries experienced a downturn in production or phased out certain programs, which was considerably reflected in greenhouse gas emissions.

### *Aggregated emissions and removals of GHG by sectors (1990-2001)*

Source	Emissions and removals of GHG (Gg eq-CO <sub>2</sub> )											
	1990	1991	1992	1993	1994	1995	1996	1997	1998	1999	2000	2001
Energy	22463	16568	15467	16526	15499	16353	17076	18037	18872	19256	18817	19875
Industrial Processes	3892	2976	2653	2066	2317	2021	2095	2365	2002	2454	2815	2785
Agriculture	4321	4344	4060	3277	3109	2891	3192	3479	3186	3282	3303	3036
Waste	933	917	901	913	937	995	983	1034	1082	1160	1162	1163
<b>Total</b>	<b>31609</b>	<b>24804</b>	<b>23082</b>	<b>22783</b>	<b>21862</b>	<b>22259</b>	<b>23347</b>	<b>24915</b>	<b>25142</b>	<b>26151</b>	<b>26097</b>	<b>26859</b>
Removals (LUCF)	-6505	-6505	-6505	-6505	-6505	-6505	-8069	-8069	-8069	-8069	-8069	-8069
<b>NET EMISSION</b>	<b>25104</b>	<b>18299</b>	<b>16577</b>	<b>16278</b>	<b>15357</b>	<b>15754</b>	<b>15278</b>	<b>16845</b>	<b>17073</b>	<b>18082</b>	<b>18028</b>	<b>18790</b>

Source: EKONERG Institute for Energy and Environment

### *Aggregated emissions and removals of GHG by gases (1990-2001)*

Gas	Emissions and removals of GHG (Gg eq-CO <sub>2</sub> )											
	1990	1991	1992	1993	1994	1995	1996	1997	1998	1999	2000	2001
Carbon dioxide (CO <sub>2</sub> )	22970	16702	15764	16399	15674	16251	16976	18057	18956	19678	19379	20390
Methane (CH <sub>4</sub> )	3815	3611	3419	3291	3099	3104	3146	3243	3099	3179	3210	3332
Nitrous oxide (N <sub>2</sub> O)	3886	3843	3898	3093	3089	2896	3165	3523	3070	3285	3484	3088
HFCs, PFCs and SF <sub>6</sub>	939	648	0	0	0	8	60	91	18	9	23	49
<b>Total</b>	<b>31609</b>	<b>24804</b>	<b>23082</b>	<b>22783</b>	<b>21862</b>	<b>22259</b>	<b>23347</b>	<b>24915</b>	<b>25142</b>	<b>26151</b>	<b>26097</b>	<b>26859</b>
Removals (CO <sub>2</sub> )	-6505	-6505	-6505	-6505	-6505	-6505	-8069	-8069	-8069	-8069	-8069	-8069
<b>NET EMISSION</b>	<b>25104</b>	<b>18299</b>	<b>16577</b>	<b>16278</b>	<b>15357</b>	<b>15754</b>	<b>15278</b>	<b>16845</b>	<b>17073</b>	<b>18082</b>	<b>18028</b>	<b>18790</b>

Source: EKONERG Institute for Energy and Environment

The Republic of Croatia is currently preparing the Second National Communication to the UN FCCC.

## Energy Sector Reform

The development of the Croatian energy sector in the following ten to fifteen years will be characterized by:

- major changes in technology, market and the organization of the energy sector,
- economic liberalization, de-regulation, de-monopolization and an increase in diversification,
- the growing role of consumers within the energy market,
- globalization of the market, new energy companies and technologies (including communications),
- increase of energy consumption,
- decrease of the role of state-owned companies and the strengthening of private initiatives on commercial basis,
- uncertainties regarding the scope of energy policies, safety of supply and balance of energy needs,
- attempts to find appropriate solutions and modalities of governmental intervention in liberal market conditions as well as the safety and balance of energy needs,
- environmental protection, energy efficiency and the utilization of renewable energy sources which become of primary interest to the government,
- energy sector development strategies, which will continue to be of growing interest and one of the requirements of international and/or regional institutions, e.g. the United Nations.

The above mentioned characteristics of the energy sector will also have a significant influence on the development and transformation of both the energy and electric energy sectors in Croatia. The relations within the energy sector, as well as its management are also likely to be affected. Changes within the energy sectors of European Union countries will have a special impact on conditions in Croatia, especially prior to its acceptance in the Union.

The interest of Croatia is to fit into the international market with all its standards and institutions. This implies market opening, introduction of competitiveness, enabling the consumers to make their own choices, increase of efficiency and cost reduction.

In this context, the reform of the energy sector in Croatia has initiated with the adoption of the National Energy Programs and continued with the adoption of the energy strategy. However, concrete operational activities have started with the adoption of legislative acts that provide the legal framework for the reform:

- Energy Law regulates measures to ensure and secure reliable energy supply, efficient power generation and its use. It provides the enforcement of acts stipulated for the purpose of designing the national energy policy and energy strategy. It also regulates the execution of energy-related activities based on market principles or public service obligation, and other key issues relevant for the energy sector.
- Law on Regulation of Energy Activities covers the system for the regulation of energy activities, founding of the Energy Regulatory Council, as well as issues crucial for the introduction and implementation of regulatory activities. The main purpose of such regulations is to increase market competition and consumer protection.
- Law on Electricity Market creates preconditions for the development of the electric power market. Electric energy is envisaged to be produced in a competitive market and sold under short-term and long-term contracts or directly on the structured market. The law introduces competition in the field of electric energy production and supply. It regulates the development, construction, management and maintenance of a safe and reliable electric power system, and secures the interests of clients and environmental protection.

- Law on Gas Market creates preconditions for the construction of an open gas market and for a reliable, and competitive supply of gas to the customers. The Act regulates conditions for performing gas related activities, provides for business opportunities and regulates development, construction, management and maintenance of a safe and reliable gas supply system.
- Law on Oil and Oil Products regulates the oil and petroleum products markets with the scope of securing free market competition, a safe and high-quality supply of oil and oil products, environmental protection and an increase in energy efficiency.

### **The National Environmental Action Plan**

The Republic of Croatia has adopted a National Environmental Action Plan (NEAP). The National Environmental Action Plan (NEAP) was prepared in order to:

- Reassess and restate Croatia's objectives and priorities in environmental protection
- Guide its environmental policy formulation, institutional development and investment planning over the medium term, including assurance of long-term stable financing on the basis of partnership and shared responsibility
- Attract the interest and support of external partners

Based on sustainable development principles and an assessment of environmental problems and priorities, the NEAP document includes strategic elements and an Action Plan in each area of concern, summarized in a Priority Activities Plan (PAP) for the highest priority actions that need to be started in the next two years. The PAP comprises an integrated and mutually supportive set of actions to accelerate environmental protection in Croatia over the next five years. Being arrived at through a lengthy process of consultation and participation, it represents a best attempt at consensus between decision-makers and experts in both the public and private sectors and in civil society. It includes actions that the Government of Croatia can and will take in the immediate future with its own resources but also a larger number of measures for which external financial support will be needed if progress is to be made while Croatia is resolving its present economic difficulties. If the coherence of the NEAP is not to be lost, it will be important that these two kinds of action proceed in parallel.

Perhaps the single most important project in the PAP in the areas of energy and climate change would be to produce cleaner motor fuels: unleaded petrol and low-sulphur diesel and heating oil at the refineries of INA – the centerpiece in the government's strategy to eliminate lead in petrol by 2005, with direct benefits for the mental development of children. The feasibility of producing bio-diesel would also be examined.

A number of initiatives in the energy sector are proposed: pilot projects for wind, biogas and other renewable resources; co-generation; and, energy conservation as well as an assessment of capacity for addressing global warming.

### **3. Prior and on-going assistance**

#### **PDF B PHASE**

The current situation and the energy saving and the greenhouse gas reduction potential of the different energy efficiency technologies and measures were studied in detail during the PDF B phase of the project. The case studies focused on the households and hotels in the Istrian and Split-Dalmatian counties as the most feasible sectors and areas to start with.

In the residential sector, the following technologies were studied:

The **energy saving light bulbs** (Compact Fluorescent Lighting, CFLs) are typically among the most cost-effective energy saving technologies. Still, the CFLs are currently used only by approximately 5-10% of the Croatian population. According to the market analysis conducted during the PDF B phase of the project, the main reasons for the still relatively low interest of the consumers to purchase CFLs are the low awareness of the population about the benefits of the CFLs and, especially, their high price compared to the ordinary light bulbs, despite the fact that the last few years have witnessed a drop in CFL prices from US\$12 in 1998 to \$7,5 in 2002 (100 Watt equivalent high quality CFLs guaranteed to last 15,000 hrs., replaceable during a period of 10 years).

The market analysis and the consultations conducted during the PDF B phase of the project indicated that by organizing a specific campaign in co-operation with the lamp manufacturers, local electric utility and the Croatian Postal Service, the retail price of the CFLs could be reduced from the current US\$7,5 to approximately US\$4-5 per piece. This price would coincide with the conclusions of the market analysis concerning the price that the people would be willing and able to pay. With these conditions, about 90% of the households interviewed indicated that they would be interested in purchasing CFLs, with the average amount of 4-6 pieces per household.

In Istria, where the market analysis was conducted, it was concluded that up to 200-250,000 lamps could be sold during the first year of the project. This would translate into annual electricity savings of up to around 20 million kWh or annual greenhouse gas reduction potential of 8 ktCO<sub>2</sub>-eq in Istria only<sup>1</sup>. With the US\$4-5 purchasing price and the estimated annual savings of a 80 kWh per lamp, the simple payback time of the investment with the electricity tariff of US¢6,3 per kWh for households would be less than a year (considering the energy savings only). For the service sector, the electricity tariffs in 2001 were approximately US¢ 7,4 per kWh so the payback time of the investment would be even faster. The avoided costs for the electric utility have been estimated at US\$ 0.07 per kWh or US\$ 17 per lamp (with 10% discount rate and the estimated lifetime of 5 years per lamp). With the total number of households of 1.8 million in Croatia the overall market potential for replacing the ordinary light bulbs with the CFLs can be estimated at some 6 million pieces, with the potential to reduce the annual electricity consumption by 0.5 TWh (transforming to an annual GHG reduction potential of approximately 0.25 million tons of CO<sub>2</sub> ).

Through the purchase of new **energy efficient refrigerators and freezers**, the annual energy saving potential can be estimated to approximately 300 kWh per unit. According to the survey conducted in Istria, about 66% of the households use freezers and at least 50% of them are estimated to be over 10 years old (making the owners of them prospective buyers of new freezers). The retail price of a new, energy efficient freezer can be estimated to approximately US\$500, with the value of annual energy savings to the households of US\$15 per year. Therefore, and as opposite to the energy efficient light bulbs, the energy savings as such can not justify the purchase of a new freezer. However, at the time that the old equipment is to be replaced with the new ones anyway, the energy consumption of the different models should have an impact on the final decision.

The avoided costs of electricity production, generated by the accelerated purchase of new energy efficient refrigerators and freezers can be estimated to approximately US\$ 80 per unit (10% discount rate over 5 years' savings). Based on these avoided costs, additional incentives under a demand side management program (such as cash rebates, deferred payment modalities etc.) could significantly accelerate the purchase of new energy efficient equipment by the households, with a resulting reduction in electricity consumption and greenhouse gas emissions.

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<sup>1</sup> The calculations are made for a 80 W lamp with the daily usage of 3 hours and guaranteed lifetime of 15,000 hours.

The survey on the national potential for replacing the old freezers with the energy efficient, new ones indicated a potential of 300,000 such devices in Croatia, translating to an annual GHG reduction potential of approximately 35 kt of CO<sub>2</sub>.

While not reducing significantly the overall electricity consumption and the greenhouse gas emissions, **peak load management** has been identified otherwise as one of the most cost-effective measures to generate cost savings for both the utility and the consumer with a simple payback time of approximately 1-2 years. To encourage the shift of electricity consumption from peak to off-peak periods, the national electric company (HEP) has already introduced a special **3- tariff system**. In households, this would primarily be applicable, when electricity is used for heating or hot water preparation. The electricity consumption for heating could also be reduced by applying **active and passive solar technologies** for heating and hot water preparation.

In the service sector, research focused on hotels, which account for approximately 10% (2 PJ) of total energy consumption of the service sector. For the 139 hotels in the Istrian county, the potential to improve the energy efficiency and the associated reduction of the GHG emissions for some selected technologies were estimated as follows:

Installation of **3-tariff meters, peak-load management and reactive power compensation** were identified as the most cost effective measures for cutting the peak power demand and hence save the electricity cost, with a payback time of 1-2 years. Electricity consumption could be reduced by introducing efficient lighting systems, including devices for on/off control and equipment upgrading, energy saving light bulbs etc. On the average, 5% of the consumed energy (electricity and heat) could be saved, which represents approximately 4.5 GWh annually, transforming to approximately 2.000 tons of CO<sub>2</sub>.

**Heating systems** in hotels generally consist of boilers, burners, metering, control and regulating systems, heat exchangers and circulating pumps, piping etc. In most cases, these systems are more than 15 years old and consume from 15-40% more fuel than modern similar heat centrals. In average for all hotels, a 20% reduction in fuel consumption is possible by means of introducing modern burner technology, modern pumps, control and regulating systems and general system upgrading. The suggested measures would reduce fuel consumption by 4.5 million liters annually, corresponding to an annual reduction of 13.000 tons of CO<sub>2</sub>. The payback time of the investment is 3-4 years.

**Water consumption** is significant in all hotels. Water consumption per guest-day is high and the potential for saving is estimated to be 30%, which amounts to 1.25 mill. m<sup>3</sup> annually for all hotels. The payback time of the investments is 3-4 years. The respective energy consumption for the production of domestic hot water could also be reduced by 30%, representing approximately 2 million liters of fuel oil annually and the annual GHG emission reduction of 7.000 tons of CO<sub>2</sub>.

**Heat pumps** could be introduced alongside new air-conditioning systems, which will be mandatory when new hotel regulations will be introduced in the near future, and will provide significant opportunities for additional savings.

**Solar panels for water heating** have so far been introduced in only 10 hotels. The use of solar energy for warm water, combined with off-peak power could reduce boiler operating hours significantly, yielding annual reductions of 5% in fuel and 3% in electricity consumption, corresponding to the reduction of CO<sub>2</sub> emissions of 3,000 tons per year. The problem is that at present the investment costs for solar panels are very high with an expected average pay-back period of 10 years and above.

In addition to the technologies and measures presented above, the introduction of energy monitoring and management measures, including procedures for training of operational staff and systematic operation and maintenance, would give significant savings with little or no investments. Experience

indicates potential savings of more than 5% in energy consumption, corresponding to the reduction of 5.000 tons of CO<sub>2</sub>.

The total GHG reduction potential of the energy efficiency technologies and measures listed above, if implemented in all the 139 hotels, would be approximately 27,000 tons of CO<sub>2</sub> annually without the solar panels and 30,000 tons of CO<sub>2</sub> with them, with the corresponding investment needs of about US\$12 million and US\$19 million respectively.

The cumulative GHG reduction potential for the next 20 years by implementing nationwide the listed energy saving measures in the service sector (considering only the hotels and the restaurants) can be estimated at some 0.50 million tons of CO<sub>2</sub>.

The summarized impacts of various measures to be implemented within the project are given below.

*Impacts of measures and activities to be undertaken under the auspices of the project*

	Energy Savings	GHG reduction potential	Simple Payback	Avoided Cost For the Utility
<b>Energy saving light bulbs- Households<sup>1</sup></b>				
<b>Croatia</b>	0,5 TWh/year - electrical energy	0,25 Mt CO <sub>2</sub>		
<b>Istria<sup>2</sup></b>	20 GWh/year - electrical energy	8 kt CO <sub>2</sub>	<1 year	US\$0,07/kWh or US\$17/lamp <sup>3</sup>
<b>Energy efficient refrigerators and freezers</b>	300 kWh/unit - electrical energy	35 kt CO <sub>2</sub>	>10 years <sup>4</sup>	US\$80/unit <sup>3</sup>
<b>3-tariff meters, peak-load management and reactive power compensation</b>				
<b>Istria</b>	4,5 GWh/year - electrical energy	2,000 tons CO <sub>2</sub>	1-2 years	
<b>Water saving Systems</b>	2 million litres - fuel oil for water heating	7,000 tons CO <sub>2</sub>	3-4 years	
<b>Heating Systems</b>				
<b>Hotels</b>	20% fuel (gas, fuel oil)	13,000 tons CO <sub>2</sub>	3-4 years	
<b>Solar Panels For Water Heating</b>				
<b>Hotels</b>	5% fuel, 3% electrical energy	3,000 tons CO <sub>2</sub>	>10 years	
<b>Energy Management and Monitoring Measures</b>				
<b>Hotels</b>	>5% total energy	5,000 tons CO <sub>2</sub>	<1 year	

1 - 80W lamp with average daily usage of 3 hrs. and guaranteed lifetime of 15,000 hrs.

2 - Assuming: US\$4-5 purchase price, the distribution of 200,000-250,000 lamps, US\$6,3/kWh

3 - Assuming: 10% discount rate during 5 years

4 - Assuming no incentives



## **EU SYNERGY Energy Related Planning And Decision Making In Istria Project**

A project aimed at rationalizing energy related planning and decision making in Istria has been undertaken under the auspices of the EU's SYNERGY Program. The project thoroughly analyzed past trends, present economic and energy conditions in Istria, as well as the predicted growth in energy demand due to the post-war recovery of national and regional economies. It combined the analyses with identified renewable energy potential and energy end uses rationalization. The analysis of the renewable energy potential focused on identifying and assessing active solar systems in low temperature thermal energy applications in the tertiary and domestic sectors.

## **Post Graduate Studies In Energy Efficiency And Environment At The University Of Zagreb, Croatia**

The Industrial Energy Efficiency (MIEE) National Energy Program is initially based on the experiences of the Norwegian Industrial Energy Efficiency Network - IEEN - which is operated by the Institut for energiteknik (IFE) of Kjeller, Norway. In order to implement the same kind of network in Croatia, EIHP has requested assistance from IFE. With intent to establish a long-term project, IFE and EIHP are jointly carrying out a one-year preparation project for the Network.

During these activities, it became obvious that the lack of specialized experts from various fields of energy consumption sectors and energy efficiency might represent an obstacle to the program's development. Therefore, the Croatian partners involved in MIEE's implementation are convinced that the establishment of post graduate studies, and especially the specialization post graduate studies, in energy efficiency and environment at the University of Zagreb would mean a very significant support for these activities.

Under the auspices of this project, two main subprojects are being developed:

- Scientific Post Graduate Studies in Energy Efficiency and Environment at The University of Zagreb, Croatia
- Specialization Post Graduate Studies in Energy Efficiency And Environment at The University of Zagreb, Croatia

## **World Bank/GEF Project "Croatia – Energy Efficiency Project"**

The proposed project will make Croatia's economy less energy intensive by creating an economically and environmentally sustainable market for energy efficiency goods and services. The project will establish a utility-based energy service company (HEP ESCO) to guide the development of the market. HEP ESCO will rely on domestic partners—including service providers, banks, and equipment manufacturers—to exploit project opportunities. By creating such an energy efficiency market, the project will also reduce greenhouse gas emissions in Croatia.

The project will focus on reducing three barriers to energy efficiency market development and financing: (i) lack of capacity and know-how; (ii) lack of development and project financing; and (iii) lack of consumer-driven demand. It will do so by informing stakeholders about project opportunities and by opening up markets that could not have been previously financed. Removal of these barriers will create sustainable market for economically viable energy efficiency projects and services, and achieve national and global environmental benefits.

The project will address the above barriers through a World Bank (IBRD) Sector Investment Loan and a blend of grant and non-grant financing from the Global Environment Facility (GEF). A US\$5.0 million IBRD loan to the national power utility, HEP, will purchase goods and services that support HEP ESCO activities. A US\$3.6 million GEF contingent grant will cover preparation costs for and early investment in the first pipeline of projects. A US\$0.8 million GEF working capital

guarantee will mitigate the risk of end-users' slow payment. A US\$1.2 million GEF partial credit guarantee, managed by HBOR, will address perceived credit risks common in emerging financial markets by mitigating the risk of end-user default in payment obligations to energy services providers or commercial lenders. The IBRD and GEF financing is expected to leverage US\$19.3 million in commercial loans and US\$8.2 million from HEP and other private ESCOs. All project financing costs will be repaid by end-users' energy savings. In addition, GEF technical assistance of US\$1.4 million will support training, monitoring and evaluation, and information and dissemination related to overall market development.

#### **World Bank/GEF Project “Croatia – Renewable Energy Resources Project”**

The objectives of the proposed project are to: (i) promote renewable energy resources (RER) projects nationwide; (ii) utilize a utility-based ESCO to develop and aggregate the capital for RER projects and to implement them, following performance contracting principles; and (iii) develop in Croatia the knowledge and mechanisms necessary for financiers to fund RER projects.

#### **4. Institutional framework**

Significant changes have been introduced in the legislative and institutional framework since Croatia became a sovereign state. Following the restructuring of Governmental bodies of the Republic of Croatia on October 14<sup>th</sup> 1994, the State Directorate for the Protection of Nature and Environment was separated from the Ministry of Civil Engineering and Environmental Protection which was abolished. The Directorate has taken over both national and international obligations (conventions, etc.), and affairs regarding environmental protection in the Republic of Croatia. The Ministry of Environmental Protection and Physical Planning was constituted by virtue of the Law on Amendments to the Law on Structure and Competence of Ministries and State Government Organizations (Official gazette #15/2000), which came into force on February 5<sup>th</sup>, 2000. The newly established ministry took over the tasks and responsibilities of the former Ministry of Zoning, Construction and Housing in the section related to physical planning, site-permits, building permits and operation permits, urban planning and building inspection, and the corresponding legal and administrative matters, as well as the tasks and responsibilities of the former State Directorate for the Protection of Nature and Environment.

The Ministry of Industry, Shipbuilding and Energy was abolished in the restructuring of Ministries and Governmental bodies which took place in 1993. Its affairs were transferred to the newly formed Ministry of Economy, which is currently responsible for the energy sector as a whole in Croatia. Other key ministries and other institutions relevant to the project include:

The *Ministry of Foreign Affairs*, which is involved in bilateral, multilateral and international co-operation initiatives;

The *Ministry of Finance* dealing with financial matters, including taxation;

The *Ministry of Science and Technology* supporting and initiating research and scientific studies related to energy efficiency, climate change and other topics relevant to the proposed project;

The *Ministry of Public Works, Reconstruction and Construction*, which is in charge of reconstruction activities in war affected areas and elsewhere, playing a significant role in the reconstruction of houses and residential buildings;

The *Ministry of Tourism* which is in charge of the tourism sector in Croatia.

There are also a number of NGOs such as *Green Action, Lijepa nasa etc.*, which are involved in energy and environment related activities.

*The Croatian Power Utility - Hrvatska Elektroprivreda (HEP).* The National Power Supply Company “Hrvatska Elektroprivreda” operates within the entire Croatian territory. Its main goals are the production, transmission and distribution of electricity, and the management of the Croatian electricity sector. The company is also involved in the production and distribution of heat through centralized thermal systems in the cities of Zagreb and Osijek. It performs its activities based on the Energy Law, the Law on Electricity Market, and other relevant provisions and governmental decisions.

As a part of the energy sector reform process, which has started in Croatia with the adoption of a new package of energy laws, HEP has already undergone reforms. It will also undergo future reforms.

The HEP restructuring program began in 1994 with the Amendments to the Law on Electric Energy Utility, after which the public company of HEP became a joint-stock company. Some of the most important activities undertaken under the auspices of the restructuring process include:

- separation into independent accounting components: generation, transformation and distribution;
- the development of an internal accountancy and finance system in order to achieve the transparency of costs for each individual activity;
- control and management of financial affairs for individual parts and HEP as a whole.
- separation of secondary operational activities and their organization as limited liability companies (e.g. HEP ESCO)

Today, HEP’s ownership structure is transformed. For any sales the owner (Government of the Republic of Croatia) needs parliamentary approval.

The legal infrastructure regarding the privatization process in Croatia was made before the EU energy sector reform. Having this in mind, the targets of the energy sector reform and the intention of Croatia remain to integrate its energy sector into a single European energy market. Other issues of restructuring and privatization demand clear decisions about national interests taking into consideration all the characteristics of the electric energy market, market relations, privatization needs and desirable dynamics of market and societal. Key decisions still lie on the choice of the market model: **Single buyer** or **Open market**.

*Energy Institute “Hrvoje Požar” (EIHP)* is a not-for-profit institution owned by the Republic of Croatia. The Institute is the central scientific and research institution in the field of energy system planning. It has had the main responsibility in conducting studies for and elaborating the “Energy Sector Development Strategy for the Republic of Croatia”. Its responsibilities also lie in the implementation and coordination of other activities aimed at increasing energy efficiency, utilization of renewable energy sources, and environmental protection under the auspices of the PROHES (Organization and Development of the Croatian Energy Sector) project.

The legal framework that regulates energy sector emissions includes the Act on Environmental Protection, Law on the Protection of the Air, Regulation on the Recommended and Boundary Values of Air Quality, the Act on Boundary Emissions of Pollutants from Stationary Sources, and various other legal provisions aimed at preventing the pollution of air, land and sea. Environmental impact assessments for the energy and all other sectors of the economy are required by law for projects that might cause environmental impacts.

## **B. PROJECT JUSTIFICATION**

### **1. Problems to be addressed**

Despite the favorable general policy framework to support energy efficiency, the studies and analyses conducted during the PDF B phase of the project have identified several barriers to the actual implementation of these measures. These barriers range from the still inadequate legal and regulatory framework and the lack of a coherent system of energy planning to different information, “capacity” and financial barriers. While the legal, regulatory and other policy related barriers are something to be addressed by the Government without the need for direct support from the GEF, there are many others, for which the GEF assistance would be imperative. These latter barriers include:

- (a)* lack of awareness and information of the different end user groups on the available energy saving technologies and measures and their financial benefits;
- (b)* weak institutional framework to initiate and support projects, public outreach and other activities related to energy efficiency and environmental protection;
- (c)* high up-front costs of energy efficiency investments, combined with the limited financial resources of the targeted end user groups to invest on energy efficiency on their own;
- (d)* lack of experience and capacity of the local stakeholder to develop “bankable” EE projects and to take energy efficiency (EE) aspects otherwise into account in planning;
- (e)* lack of capacity and resources of the owners/operators of the public and commercial buildings to work on energy efficiency in addition to running their core business;
- (f)* lack of local capacity, information and experience in establishing and operating new institutional and financial mechanisms such as Energy Service Companies (ESCOs) or utility driven demand side programs to develop, finance and implement energy efficiency projects;
- (g)* lack of local experience and capacity to successfully implement EE projects; and
- (h)* lack of experience and high perceived risks of the local financing institutions to finance energy efficiency projects, which in combination with the conservative lending practices of the Croatian banks in general effectively hamper the possibilities to obtain financing for EE projects;

In the absence of the GEF support, the removal of the barriers described above would not take place or the process would be considerably delayed, resulting in major delays in the realization of the identified energy efficiency potentials.

### **2. Expected end of project situation**

The objectives and outputs of the project are presented in section D of this project document.

### **3. Target beneficiaries**

The target beneficiaries of the project consist of the:

- targeted end users, which will be able to reduce their energy consumption and costs;
- Croatian financial institutions, which will be able to enter new market areas and gain experience in financing EE projects;

- local companies able to provide goods and services for the development and implementation of energy efficiency projects
- local power utility through the measures reducing the power peak demand and by gaining information and experience for the possible later introduction of utility driven demand side programs; and
- Croatian society as a whole through the improved self-sufficiency and reduced costs of energy supply and through direct and indirect environmental benefits of energy efficiency investments.

#### **4. Project strategy and implementation arrangements**

The project is to support the implementation of economically feasible energy efficiency technologies and measures with the focus on the residential and service sectors, which together comprise about 40% of Croatia's total energy consumption. The overall potential to reduce country's greenhouse gas emission by the selected measures and within the targeted end user groups within the next 20 years has been estimated at approximately 2 million tons of CO<sub>2</sub>.

Beside the general information dissemination and capacity building activities, the project will, in particular, develop and demonstrate the feasibility of new, innovative implementation and financing mechanisms for energy efficiency investments – thereby preparing ground for their broader adoption in applicable sectors nationwide. The initial focus of the project will be on the residential and service sectors, in which two different institutional and financing models will be applied. Both of them will be clarified in greater detail in the sections below. Geographically, the initial focus of the project will be on the counties of Istria and Rijeka, with the future replication potential in other parts of the country.

The experiences and lessons learnt from the implementation of the suggested measures will be compiled and analyzed, in order to provide direct input to the ongoing policy level work of the Government of Croatia (including the general legal and regulatory framework to support energy efficiency investments, possible establishment of special purpose funds etc.) as well as to leverage increasing private sector financing for these investments by demonstrating the institutional and financial feasibility of the suggested mechanisms, and by sharing and overcoming the start-up risks associated with them.

In the service sector, the initial focus of the project will be on tourism, which is a sub-sector with high specific energy consumption and with large potential for energy savings. Although the cumulative energy saving potential of the hospitals, schools and other public buildings in Croatia is considerably bigger, the problem is that their energy bills are currently paid directly by the Government through the respective ministries that are supervising their operations. Such a situation completely discourages the operators of these buildings to introduce any energy saving initiatives.

Given the above, the project is to focus primarily on buildings within the service sector in which management practices lead to a direct commercial interest in respect to annual energy cost reduction. After successful implementation of selected energy efficiency measures in the hotels, the project foresees to involve persons from the responsible ministries and from the management of the public buildings to review and discuss the results, and to explore the possible ways to expand similar activities into the public buildings. In that regard, co-operation also with the before mentioned World Bank project is foreseen. An essential part of the work will be the elaboration of the changes that would be required at policy level in order to create a more supportive institutional framework for the promotion of energy efficiency measures in the public buildings.

The results and lessons learned from similar projects in other countries (such as the IFC/GEF Energy Efficient Lighting Initiatives) as well as other ongoing and planned projects in Croatia, among them the project supported by the World Bank and a project supported by the Government of Norway under the MIEE National Energy Program have been taken into account in designing the project activities.

Within the sphere of information dissemination and awareness raising, special emphasis will be made to involve Non-governmental organizations (NGOs). Cooperation will be established with local NGOs where possible in order to organize activities that involve the local population. These activities will be organized during the CFL campaign in order to instigate local participation and promote energy efficiency measures in households. Emphasis will be placed on cooperation with those local NGOs that are permanently present in the area(s) to be targeted. However, in areas/counties where suitable local NGOs do not exist, cooperation will be established with NGOs that have national coverage. Proposed programs will be evaluated and organized in conjunction with training seminars/workshops aimed at informing the NGOs on the project's goals.

The project will be executed by the Ministry of Economy on behalf of the Government of Croatia. A Project Steering Committee (PSC), consisting of representatives of the key stakeholders such as key ministries, research institutes/universities, consumer groups, as well as private sector representatives will be established to oversee the implementation of the project and to provide advice and guidance for the Project Management Unit. The Project Management Unit (PMU), consisting of a full time project manager and 1-2 supporting staff and hosted by the "Hrvoje Pozar" Energy Institute (as the government in-kind contribution), will be responsible for managing and coordinating the project activities on a day to day basis. The Partial Guarantee Facility to be established jointly with the World Bank Energy Efficiency project will be managed by the Croatian Bank for Reconstruction and Development (HBOR). HBOR will also financially manage the Project Development Fund with technical support from the Energy Institute Hrvoje Pozar.

In overcoming barriers to improving the energy efficiency of the residential sector, the initial focus will be on promoting the market for compact fluorescent light bulbs (CFLs). The project will facilitate this by organizing a specific marketing campaign, in which through a combination of measures such as public awareness raising and advertisement campaigns, price reduction by market aggregation, partial sales guarantees and expanded distribution channels, the purchase of the lamps will be made more attractive to the people with an objective to gradually transfer their use to "business as usual".

For reducing the price of the lamps, the project will publish a tender for the lamp manufacturers, requesting their offer for delivering at minimum 100,000 lamps for the duration of the campaign. The campaign will be supported by partial sales guarantee provided by the project (see Annex V for further details). In the case that less than 100,000 lamps can be sold, the project can compensate for their losses up to the agreed amount. This amount will be one of the components to be included in the tender. The eventual surplus lamps can be included in the next cycle of the CFL campaign, which will be conducted in another county.

For the duration of the campaign, the local post offices will be used as an additional distribution channel with a possibility to reduce the retail margin of the price of the lamps and thus the final costs.

The original purpose of the project was to organize the CFL campaign in co-operation with the local electric utility, HEP, as a model for introducing demand side management into their operations, but during further negotiations this co-operation was abandoned by the utility. In a de-regulated and

privatized energy market, the utility perceives demand side management and energy saving initiatives as lost consumption and decreased revenue. Against this background, the utility is currently expected to provide only some additional support needed for CFL storage and distribution and general incentives related to customer support. During the further implementation the utility may assume a more active role. In that regard, the project design also incorporates specific activities for building the capacity and raising the awareness of both the regulative authorities and the utility management on the benefits at the national and utility level for introducing the concept of demand side management and to strengthen the role of energy efficiency in the utility's operations otherwise.

The implementation strategy described above presents an alternative method to reduce the price of the CFLs through market aggregation and improved distribution channels, thereby providing a basis for permanent price reductions through the volume of scale. If proven successful, the original idea of continuing the promotion of CFLs through the utility driven demand side programs can also be re-introduced together with similar campaigns for other energy efficient household appliances.

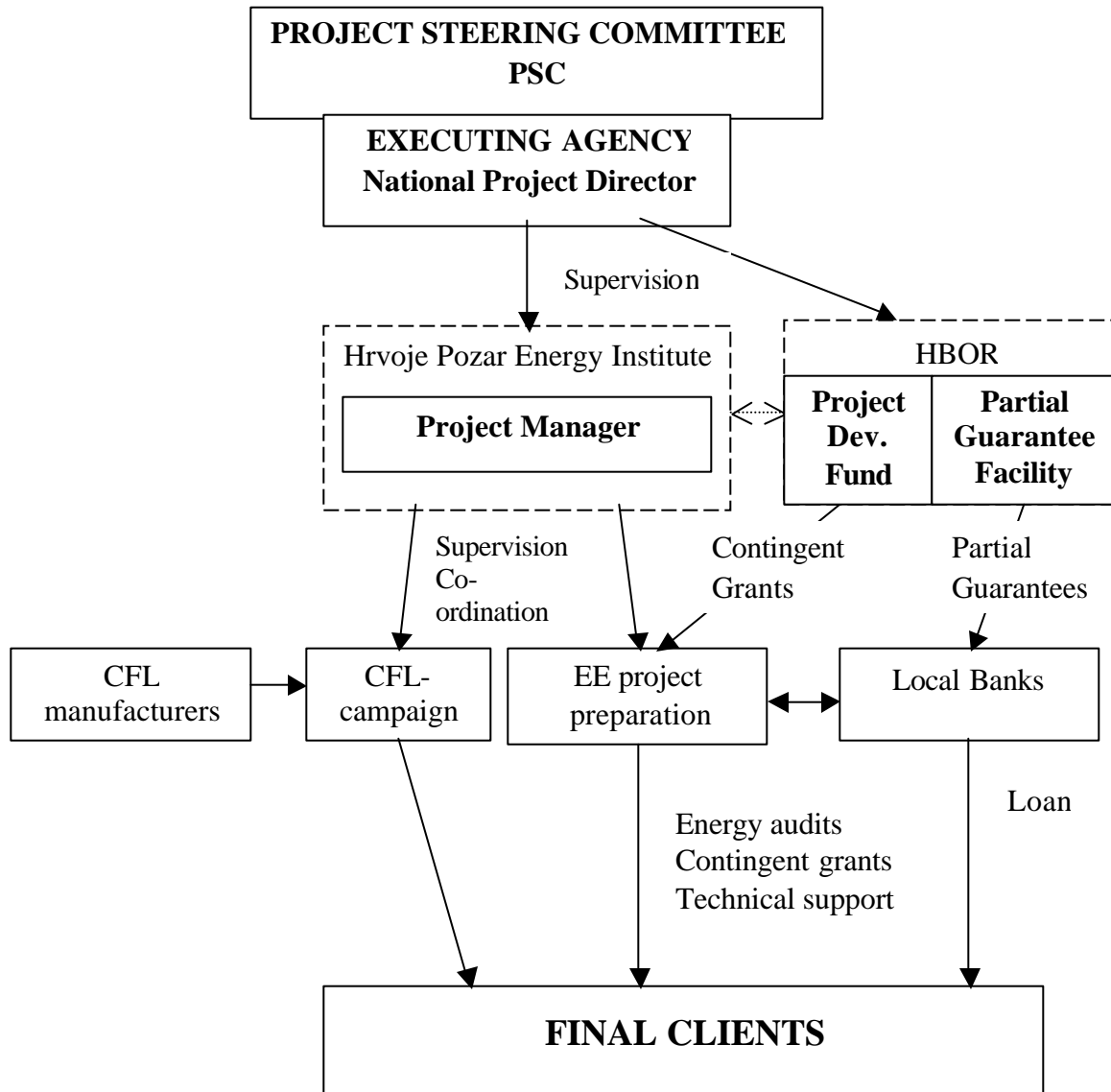
In overcoming the barriers to improving the energy efficiency of the public and commercial buildings in the service sector, strategic partnerships will be established between the local research institutes and private sector representatives (banks, engineering companies etc.) to act as a "quasi-ESCO" providing a full line of services to foreseen customers, starting with energy audits and ending with the financial closure of the projects and provision of technical and other support throughout the implementation of the projects. The project will support these operations by paying for initial "walk-through" energy audits (as a part of project's marketing strategy) as well as by sharing the risks of further project preparation by the provision of contingent grants through the specific "Project Development Fund" to be established. The draft Terms of Reference and the funding criteria of this Fund are presented in Annex VI.

The project will also support the establishment of a Partial Guarantee Facility as a specific account managed by the Croatian Bank for Reconstruction and Development (HBOR) and with the purpose of sharing the credit risks with the participating banks interested in financing energy efficiency projects. In implementing this component of the project, the project will co-operate with the parallel World Bank energy efficiency project "Energy Efficiency in Hrvatska Elektroprivreda". A more detail description of the Fund is presented in Annex VII

The representatives of the universities and other research/educational institutions as well as the NGOs are foreseen to be actively involved into the implementation of project activities, especially as far as it concerns the activities dealing with public awareness raising and other educational and training activities, research related to the technical aspects of the technologies to be promoted as well as monitoring and evaluation of the overall results of the project.

The UNDP country office will provide support to the executing and implementing agency as needed during the project's implementation. Specifically, support will be provided in the following areas: assistance in the project's launching, participation in the steering committee meetings, monitoring of the implementation of the work plan and timetable, project documentation revision, reviewing, editing and responding to the project reports, technical backstopping, support to the policy negotiations, financial management and accountability, advising and consulting during the audit process, preparation of budget revisions, financial completion activities, direct payments, advance payments, other support services as networking and exchange of best practices, preparation of the APRs, TPRs, PIR, and arranging the independent evaluations.

The schematic layout of the project implementation arrangements is presented below:



A detailed work plan and implementation strategy for each component of the project (together with a proposal for the first budget revision) will be prepared at the outset of project operations by the project manager in consultation with UNDP. Prior to starting the actual implementation of the work plan, the work plan will be reviewed and must be approved, together with the associated revised budget, by the executing agency and the UNDP.

## 5. Reasons for Assistance from UNDP

Croatia ratified the UN Framework Convention on Climate Change on February 5<sup>th</sup>, 1996. As a Party to the Convention, Croatia has accepted the commitment to formulate, implement, publish and regularly update national and, where appropriate, regional programmes containing measures to mitigate climate change by addressing anthropogenic emissions by sources and removals by sinks of all greenhouse gases not controlled by the Montreal Protocol.

The project is consistent with the objectives and eligibility criteria listed in the GEF Operational Strategy and the GEF Operational Programme #5, "Removal of Barriers to Energy Efficiency and



Energy Conservation”. In addition, energy efficiency is listed as one of the main goals under the UNDP CPO (Country Programme Outline) for the period 2003-2006 under the umbrella of strategic sustainable development and millennium goals. The activities proposed for GEF financing are not likely to be undertaken by the Government on its own, which without the GEF support would considerably slow down the changes needed to promote energy efficiency both at the policy and at the practical level in Croatia.

## **6. Special Considerations**

International cooperation with the purpose of strengthening the transfer of knowledge and experience can be considered as imperative for the successful completion of the project. Co-operation, among others, with Austrian, Slovenian and Norwegian experts has marked the project development phase and it is expected that this co-operation will be continued and expanded also to cover other countries and their respective institutions. In particular, one should mention the Government of Norway financed project “Industrial Energy Efficiency Network in Croatia”, the implementation of which started in 2000. It builds on experiences from a similar project in Norway. The main objective is to *“Improve industrial companies ability to make the “correct” decisions in matters related to energy and environment”*, to be achieved through increased awareness and information, benchmarking on energy statistics, prototype and demonstration projects, training and education and technology studies and transfer. The project is implemented within the following sectors: tourist industry (hotels), public service sector (hospitals), food processing industry and wood processing industry. The outputs from this project will have synergy effects with the proposed UNDP/GEF projects and close co-operation between these two projects is foreseen.

The independent review of the GEF and non-GEF efficient lighting projects conducted in 1998 concluded, that properly designed and initiated energy efficient lighting programs can provide a cost effective tool to facilitate the process towards sustainable market transformation. In non-mature markets, the most significant barriers to be addressed were identified to be: (i) lack of information and conviction by consumers about the benefits of CFLs; (ii) high up-front costs of CFLs (high consumer discount rates) compared with standard bulbs; and (iii) lack of low transaction cost credit mechanisms in markets with low per-capita incomes. In terms of cost-efficiency, the following factors were evaluated to have a tendency to make the programs more cost-effective: (i) no or low per lamp subsidies; (ii) leveraging of private sector contributions and retail/markup multiplier effects; and (iii) high marketing and distribution cost effectiveness. The experiences and lessons learnt described above have been taken into account in designing the activities of the proposed project and the close monitoring of the implementation of the other ongoing projects dealing with energy efficient lighting will be continued so as to incorporate their experiences and lessons learnt into the implementation of the proposed project on a continuing basis.

## **7. Co-ordination Arrangements**

As mentioned before, the project will collaborate closely with the parallel WB/GEF energy efficiency project, including the establishment of a joint Guarantee Facility to leverage increasing financing from the private sector for energy efficiency investments.

The proposed activities will complement the Energy Sector Development Strategy, the National Energy Programs and the energy-related legislation (Energy Law, Law on Regulation of Energy Activities, Law on Electricity Market, Law on Gas Market, Law on Oil and Oil Products). The present acts regulating the National Electric Utility Company (Hrvatska Elektroprivreda) encourage the application of energy efficiency and renewable energy measures and technologies. Nonetheless,

as in most CEE countries, there is a disparity, in which the measures and technologies promoted at the policy level are not necessarily implemented in practice. The proposed project, hence, aims to overcome the barriers to and provide applicable models for the actual implementation of some selected measures at the practical level and thereby provide necessary feedback also on the necessary changes needed at the legislative and regulatory framework.

## **C. DEVELOPMENT OBJECTIVE**

Reducing Croatia's greenhouse gas emissions by supporting the implementation of economically feasible energy efficiency technologies and measures in the residential and service sectors.

## **D. IMMEDIATE OBJECTIVES, OUTPUTS AND ACTIVITIES**

### **Immediate Objective 1**

Overcoming the general institutional barriers to the promotion of energy efficiency

#### **Output 1.1**

Enhanced capacity of the regional authorities to promote energy efficiency

##### **Activity 1.1.1**

Organizing seminars, workshops and other training activities for the experts that can serve as energy advisors for the local county to conduct regional energy planning, disseminate information and initiate specific projects and marketing campaigns at the county level to support the investments in energy efficiency and renewable energy;

##### **Activity 1.1.2**

Strengthening the capacity of the energy departments of the local counties otherwise to act as a clearing house for energy related information and to promote the energy efficiency and renewable energy measures, thereby preparing ground for the later establishment of regional energy centres;

### **Immediate Objective 2**

Overcoming the barriers to improving the energy efficiency of the residential sector

#### **Output 2.1**

Increased public awareness of the available energy efficient technologies and measures and their benefits to the consumers

##### **Activity 2.1.1**

Organizing general information dissemination and public awareness raising campaigns (incl. seminars, publication and distribution of information leaflets/fact sheets, use of the public media

etc.) to raise the public awareness on the costs and benefits of the different energy efficient technologies and measures applicable in the households

## **Output 2.2**

A successfully conducted pilot marketing campaign to promote the purchase of the CFLs

### **Activity 2.2.1**

Announcing a public call for tender for the lamp manufacturers to participate the campaign;

### **Activity 2.2.2**

In co-operation with the selected lamp manufacturer(s), organising a pilot campaign in Istria to reduce the retail price and increase the sales volume of the CFLs with an objective to permanently reduce the price and to increase the market share of the CFLs in the Croatian households.

## **Output 2.3**

Replication of similar campaigns for other regions and/or technologies.

### **Activity 2.3.1**

Based on the experiences and lessons learnt from the first pilot campaign, replicating similar campaigns for other regions and, as applicable, other energy efficient appliances.

## **Immediate Objective 3**

Overcoming the barriers to improving the energy efficiency within the service sector

## **Output 3.1**

Increased awareness of the owners of the public and commercial buildings on the available energy efficient technologies and measures.

### **Activity 3.1.1**

Organizing general information dissemination and marketing campaigns (including targeted energy audits) to raise the awareness of the owners/operators of the buildings on the available energy efficient technologies and their cost and benefits to the clients;

## **Output 3.2**

Enhanced capacity of the local stakeholders to initiate and support the implementation of energy efficiency measures in the service sector

### **Activity 3.2.1**

Establishing strategic partnerships between the local research institutes and private sector representatives (banks, engineering companies etc.) to initiate energy efficiency measures in the service sector, and building the capacity of the local experts in project preparation, financing and

management as well as in the installation, maintenance and operation of different energy efficient equipment;

### **Activity 3.2.2**

Providing guidelines and incentives for energy audits and for the preparation of “bankable” feasibility studies and business plans for improving the energy efficiency of the commercial and public buildings, considering both supply and demand side measures with the initial focus on the hotels.

### **Output 3.3**

A pipeline of “bankable” energy efficiency investment proposals for the service sector facilities and, as applicable, for other sectors.<sup>2</sup>

#### **Activity 3.3.1**

Launching a campaign of free “walk through” energy audits for service sector facilities in co-operation with the private sector companies, NGOs, public authorities and other relevant stakeholders.

#### **Activity 3.3.2**

Presenting and discussing the results of the audits with the targeted clients with the aim to enter into contractual arrangements for further development and, as applicable, implementation of the projects.

#### **Activity 3.3.3**

Supporting the development of the projects into full-fledged investments proposals by the provision of incentives, training and other technical assistance to project developers as well by establishing a specific “Project Development Fund” to share the costs and the risks of project development. For more details, see Annex VI.

### **Output 3.4**

A Partial Guarantee Facility to leverage financing for the targeted energy efficiency investments

#### **Activity 3.4.1**

Establishing a Partial Guarantee Facility to share the risks connected with the preparation and implementation of energy efficiency projects in the service sector and to leverage additional financing for the energy efficiency investments from the private sector (for more details, see Annex VII).

## **Immediate Objective 4**

Facilitating the effective replication/utilisation of the project results and lessons learnt.

### **Output 4.1**

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<sup>2</sup> An output that has been added since the project brief approval to concretize the outputs expected

A system for monitoring the GHG emission reductions of the proposed pilot/demonstration projects in place.

**Activity 4.1.1**

By building on the experiences with the other climate change projects in other countries (GEF, JI and/or CDM), developing a Project Monitoring and Verification Protocol for monitoring the GHG emission reductions achieved with the suggested pilot/demo projects.

**Activity 4.1.2**

As needed, preparing the specifications for, procuring and installing the required technical equipment to facilitate proper monitoring of the projects.

**Activity 4.1.3**

Training the operating personnel of projects to compile and report the necessary information.

**Output 4.2**

Project results, experiences and lessons learnt documented and disseminated at the national and regional level.

**Activity 4.2.1**

Monitoring the pilot CFL campaign in the residential sector as well as the development and commissioning of the first pilot/demonstration projects in the service sector, evaluating and reporting the results and lessons learnt.

**Activity 4.2.2**

Monitoring and verifying the GHG emission reductions achieved as a result of the projects.

**Activity 4.2.3**

Conducting an independent project midterm and final evaluation, including the evaluation of the effectiveness of the training and other capacity building activities in reaching their stated objectives.

**Activity 4.2.4**

Compiling, publishing and disseminating the final project report in Croatian and English summarizing the results, experiences and lessons learnt

**Activity 4.2.5**

Organizing meetings, workshops and seminars with the participation of the key stakeholders to discuss the results and to initiate measures and activities needed at the policy and other levels to follow-up and expand the activities to other regions and sub-sectors on a sustainable basis, incl. the elaboration of measures needed to encourage energy efficiency improvements in the public

buildings as well as to strengthen the role of the energy efficiency aspects in the ongoing power sector reform process;

#### **E.**

The total costs of the proposed project have been estimated at US\$ 13.05 million. Of this total, the GEF is requested to cover the incremental costs of US\$ 4.39 million consisting of a technical assistance component of US\$ 1.59 million and a financing component of US\$ 2.8 million. The resources of the financing component are to be used for 1) sharing the risk of the CFL marketing campaign with the selected lamp manufacturer(s) and after that, as applicable, for promoting other cost-efficient energy saving technologies in the residential sector (allocated resources US\$ 0.3 million); 2) establishing a Partial Guarantee Facility for leveraging additional financing for the implementation of the suggested energy efficient measures in the service sector (allocated resources US\$ 2.0 million); and 3) sharing the risks of project preparation in the form of contingent grants (allocated resources US\$ 0.5 million for the establishment of a “Project Development Fund”) with the initial focus on the service sector.

The co-financing component of the project has been estimated at US\$ 8.66 million, consisting of 1) the initial contribution of the selected lamp manufacturer(s) to cover the up-front costs of the CFLs to be included in the marketing campaign (estimated amount USD 490,000 in the form of a supplier credit); 2) loans of the the Croatian banks and down payments of the targeted end-users to finance the targeted energy efficiency investments in the service sector (estimated amount to be leveraged USD 7,500,000); and 3) and “in-kind” contribution of the Government of Croatia at the estimated value of US\$ 670,000 over the four years duration of the project, consisting of:

- (a) provision of office space for the Project Management Unit and national and international experts working on the project’s implementation;
- (b) provision of national experts for the implementation of the project, including, in particular, the inputs of the experts of the Hrvoje Pozar Energy Institute, but also from other governmental organizations and offices;
- (c) provision of full and free access to the information and data maintained by the different Governmental organizations, as required for the implementation of the project; and
- (d) provision of logistic support to the project.

## **F.**

The main risk of the project is that in spite of the available technical and financial assistance, the identified energy efficiency measures and technologies will not be adopted and implemented at the projected scale by the foreseen clients and/or the project does not achieve its long term objectives of removing barriers to energy efficiency in Croatia ensuring the continuing growth of the market after the GEF assistance has ended. The project has tried to avoid this risk by proper planning, broad consultations with the relevant stakeholders and by taking stock on the experiences and lessons learned on promoting energy efficiency and renewable energy measures in other countries.

One of the risks affecting the project is related to the processes that will characterize the future development of the Croatian energy sector in general. At present, the Croatian energy sector is entering into a new phase, in which it has to be restructured. This process will involve legislative changes, changes in the ownership and organizational structure of the public utilities and general opening and liberalization of the energy market. Should the energy sector reform fail to develop the market towards this direction, e.g. by not moving towards market based energy prices incorporating the full costs of energy production and by not reducing cross-subsidization, it will not favor future energy efficiency investment and the increasing use of renewable energy sources.

These risks will be mitigated at the national level by continuing the energy sector reform processes under the auspices of the PROHES (Energy Sector Development and Organization) project and by continuing the Government's commitment to reforms outlined in the Energy Sector Development Strategy. The new package of energy laws and corresponding secondary legislation (in elaboration) already regulate or will regulate in more detail the general energy sector operation conditions; management of energy resources; planning of energy sector development; principles of competition; transit of energy materials and products; technology transfer; principles of investment promotion, protection and procedures; obligations of energy sector organizations and institutions; principles of ensuring the safety of the energy supply; price formation principles; technical conditions and regulations; energy supply conditions; tariff systems for electric energy and gas; energy sector supervision etc. Around 50 acts of secondary legislation are currently in preparation from which several are of importance to climate change mitigation: Ordinance for Renewable Energy, Ordinance for Energy Efficiency in Buildings, Ordinance on Efficiency Labeling and Ordinance on the Share of Renewables in Electricity Production. In that regard, the project will also seek to utilize, as applicable, the results of the GEF STAP Bangalore workshop on power sector reform favorable to energy efficiency and renewable energy.

Finally, in a project of this complexity a top quality project management is absolutely essential for the success of it. The experts, who will work within the Project Management Unit must have a good understanding of the Croatian energy sector. In addition, the unit should be competent in matters relating to the marketing and financing of energy efficiency and renewable energy projects and in managing national projects/programs of similar complexity. These risks are being minimised by taking them into account while defining the Terms of Reference for the project managers and the other project personnel as well as during their actual selection.

## **G.**

### **a. Prior obligations**

Croatia ratified the United Nations Framework Convention on Climate Change (UNFCCC) on February 5, 1996. As a Party to the Convention, Croatia has committed to formulate, implement,

publish and regularly update national and, where appropriate, regional programmes containing measures to mitigate climate change by addressing anthropogenic emissions by sources and removals by sinks of all greenhouse gases not controlled by the Montreal Protocol, and measures to facilitate adequate adaptation to climate change.

#### **b. Prerequisites**

The Government of Croatia commits to support the project as stipulated under the section E. of this project document (“Inputs”). In addition, the Government of Croatia will ensure that the project execution and implementation arrangements, as stipulated under the section B.4 (“Project Strategy and Implementation Arrangements”) will be in place at the outset of project operations. This will include the establishment of the Project Steering Committee to provide advise for and oversee the overall implementation of the project.

Should the national experts that will be hired by the project currently work under direct employment of the Government of Croatia, they will have to obtain a leave of absence without payment for the duration of their work for the project. A document to this effect, signed by an authorised person, has to be attached to the request for payment.

The Project Document will be signed by the Government of Croatia and UNDP. Assistance for the project will be provided only if the prerequisites stipulated above have been fulfilled or are likely to be fulfilled. When anticipated fulfilment of one or more prerequisites fails to materialise, UNDP may, at its discretion, either suspend or terminate its assistance.

#### **H.**

Once the detailed work plan for the project has been prepared, it will be reviewed by the Project Steering Committee and UNDP/GEF experts. The purpose of the review is to determine eventual gaps, inconsistencies, risks and other factors, which may compromise the successful realization of the project. The review can also benefit the project by identifying overlooked sources of information, financing and other.

The Project Steering Committee will supervise and monitor the overall implementation of the project. For this purpose, the Project Management Unit shall regularly report to the PSC on the project’s progress and its various sub-components. Likewise, the subcontractors shall report regularly to the PMU as stipulated in their Terms of Reference.

Development of effective feedback mechanisms to guide the overall project implementation as well as the evaluation of individual investments projects that are considered for GEF support belongs to one of the main activities of the project under the M&E component. The project will monitor both the implementation of the overall project activities and management and the progress of individual projects that receive funding under the financial component. Furthermore, the experiences and lessons learnt are to be used in discussing and defining the follow-up activities of the project.

The Project Management Unit shall, in cooperation with relevant partners, regularly monitor GHG reductions and trends in the development of energy efficiency and renewable energy markets in Croatia originating from the project’s implementation. This is to be realized through regular national GHG emission monitoring and inventory programs, as well as through the periodical market surveys and follow-up work on the National Energy Programs. Co-operation shall also be established with the equipment vendors in order to monitor the market trends more closely. The



"best practices" from the other GEF energy efficiency projects will be incorporated in order to identify and employ effective measurement indicators for measuring technology transfer, market impact, and market transformation. Information on the project's progress and results will be updated regularly and made available to anyone interested, e.g through the project homepage to be established on the Internet.

The project will be reviewed by a tripartite committee at least once every year. The first such meeting is to take place within the first 12 months of the start of the project's full implementation. The Project Manager shall prepare and submit to each tripartite review meeting a Project Performance Evaluation Report (PPER). Additional PPERs may be requested, if necessary, during the project.

A Project Terminal Report will be prepared for the terminal tripartite review meeting. Its draft form shall be prepared sufficiently in advance to allow review and technical clearance by the executing agency at least four months prior to the terminal tripartite review.

The Government will provide UNDP with certified periodic financial statements relating to the status of UNDP/GEF funds, including an annual audit of these financial statements, according to the procedures set out in relevant documents. The audit will be conducted by the legally recognized auditor of the Government, or by a commercial auditor engaged by the Government.

In addition, after the end of the other project activities (as expected after four years from the start up date) and as applicable, the Manager of the Partial Guarantee Facility and the Project Development Fund will prepare annual reports to the Steering Committee/Executive Board of the Fund and to the UNDP on the financial status of the Funds, including, independently audited financial statements.

The detailed monitoring and evaluation plan of the project is presented in Annex IX.

## I.

This project document shall be the instrument referred to as such in Article 1 of the Standard Basic Assistance Agreement between the Government of Croatia and the United Nations Development Programme, signed by the parties on March 12, 1996. The host country-implementing agency shall, for the purpose of the Standard Basic Assistance Agreement, refer to the Government co-operating agency described in that Agreement.

The following types of revisions may be made to this subject document with the signature of the UNDP Representative only, provided her or she is assured that the other signatories of the project document have no objections to the proposed changes:

- a. Revisions in, or addition of, any of the annexes of the project document;
- b. Revisions which do not involve significant changes in the immediate objectives, outputs or activities of a project, but are caused by rearrangement of inputs agreed to or by cost increase due to inflation; and
- c. Mandatory annual revisions that re-phase the delivery of agreed project inputs or increased expert or other costs due to inflation or to take into account agency expenditure flexibility.

**PROJECT RESULTS AND RESOURCES FRAMEWORK**

**Croatia - Removing Barriers to Improving Energy Efficiency of the Residential and Service Sector**

**Project ID:** 00034424 **FUND:** 62000 (GEF)

Immediate objective 1:	Overcoming the general institutional barriers to the promotion of energy efficiency
Expected outputs:	1.1. Enhanced capacities of the regional authorities to promote energy efficiency
Immediate objective 2:	Overcoming the barriers to improving the energy efficiency of the residential sector
Expected outputs:	2.1. Increased public awareness of the available energy efficient technologies and measures and their benefits to the consumers
	2.2. A successfully conducted pilot marketing campaign to promote the purchase of the CFLs
	2.3. Replication of similar campaigns for other regions and/or technologies.
Immediate objective 3:	Overcoming the barriers to improving the energy efficiency within the service sector
Expected outputs:	3.1. Increased awareness of the owners of the public and commercial buildings on the available energy efficient technologies and measures.
	3.2. Enhanced capacity of the local stakeholders to initiate and support the implementation of energy efficiency measures in the service sector
	3.3. A pipeline of "bankable" energy efficiency investment proposals for the service sector facilities and, as applicable, for other sectors
	3.4. A Partial Guarantee Facility to leverage financing for the targeted energy efficiency investments
Immediate objective 4:	Facilitating the effective replication/utilisation of the project results and lessons learnt.
Expected outputs:	4.1. A system for monitoring the GHG emission reductions of the proposed pilot/demonstration projects in place.
	4.2. Project results, experiences and lessons learnt documented and disseminated at the national and regional level.

**Period Year 1: 1/10/2004 - 31/12/2004**

KEY	ACTIVITY	4-YEAR	INPUTS	BUDGET	BUDGET	BUDGET
ACTIVITY	DESCRIPTION	GRAND TOTAL	DESCRIPTION	DESCRIPTION	ACCOUNT	AMOUNT
<b>Activity 1:</b>	PROJECT PERSONNEL	200,000.00	International Personnel	PERINT	71200	20,000.00
<b>Management</b>			Short term experts			
		48,000.00	Admin Personnel	PERADM	71200	3,000.00
			Admin. Assistant			
		80,000.00	Miscellaneous/monitoring & evaluation	MISC	74500	0.00
			International M&E missions			
		20,000.00	Mission costs/Travel	TRAV	71600	1,250.00
			Local duty travel			

		240,000.00	Local Personnel	PERLOC	71300	15,000.00
			National professionals/project Manager			
		<b>588,000.00</b>	<b>Subtotal year 1 activity 1/management:</b>			<b>39,250.00</b>
<b>Activity 2:</b>	SUBCONTRACTS	170,000.00	Service Contracts	SERCT CFL	72100	0.00
<b>Research</b>			CFL marketing strategy and campaign			
		50,000.00	Service Contracts	SERCT GI	72100	7,500.00
			General information dissemination and marketing			
		170,000.00	Service Contracts	SERCT EA	72100	0.00
			Energy Audits			
		160,000.00	Service Contracts	SERCT TDD	72100	0.00
			Technical due dilligence			
		60,000.00	Service Contracts	SERCT LA	72100	0.00
			Legal advisory sercvices			
		30,000.00	Service Contracts	SERCT GHG	72100	0.00
			GHG Emissions monitoring			
		40,000.00	Service Contracts	SERCT TRANSL	72100	0.00
			Translations			
		<b>680,000.00</b>	<b>Subtotal: Year 1 activity 2/research:</b>			<b>7,500.00</b>
<b>Activity 3</b>	TRAINING	35,000.00	Miscellaneous	MISC STUDY TOURS	74500	0.00
<b>Training - study tours and workshops</b>			study tours			
		55,000.00	Miscellaneous	MISC WKSH&SEM	74500	3,750.00
			Workshops and Seminars			
		90,000.00	<b>Subtotal year 1 activity 3/training:</b>			<b>3,750.00</b>
<b>Activity 4</b>	EQUIPMENT	20,000.00	Equipment	EQUIP EXPEND	72200	2,500.00
<b>Equipment</b>			Expendable equipment			
		50,000.00	Equipment	EQUIP NON-EXPEND	72200	5,000.00
			Non-expendable equipment			
		300,000.00	Equipment	EQUIP CFL	72200	0.00

			CFL-sales guarantees			
		46,000.00	Equipment Operations	EQUIP OPERAT	72200	3,000.00
		416,000.00	<b>Subtotal year 1 activity 4/equipment:</b>			<b>10,500.00</b>
<b>Activity 5</b>	MISCELLANEUS	46,000.00	Miscellaneous	MISC REP&PUB	74100	0.00
<b>Miscellaneous</b>			reporting and publications			
		40,000.00	Miscellaneous	MISC AUDIT	74100	0.00
			Audits			
		30,000.00	Miscellaneous	MISC SUNDR	74500	2,500.00
			sundries			
		116,000.00	<b>Subtotal year 1 activity 5/miscellaneous:</b>			<b>2,500.00</b>
<b>Activity 6</b>	GRANTS	2,000,000.00	Micro Capital Grants (OT)	MCGOT PGF	72600	0.00
<b>Grants</b>			partial guarantee facility			
		500,000.00	Micro Capital Grants (OT)	MCGOT PDF	72600	0.00
			Project Development Fund			
		2,500,000.00	<b>Subtotal year 1 activity 6/grants:</b>			<b>0.00</b>
		<b>4,390,000.00</b>	<b>GRAND TOTAL YEAR 1:</b>			<b>63,500.00</b>
<b>Period Year 2: 1/1/2005 - 31/12/3005</b>						
<b>KEY</b>	<b>ACTIVITY</b>	<b>4-YEAR</b>	<b>INPUTS</b>	<b>BUDGET</b>	<b>BUDGET</b>	<b>BUDGET</b>
<b>ACTIVITY</b>	<b>DESCRIPTION</b>	<b>GRAND TOTAL</b>	<b>DESCRIPTION</b>	<b>DESCRIPTION</b>	<b>ACCOUNT</b>	<b>AMOUNT</b>
<b>Activity 1:</b>	PROJECT PERSONNEL	200,000.00	International Personnel	PERINT	71200	75,000.00
<b>Management</b>			Short term experts			
		48,000.00	Admin Personnel	PERADM	71200	12,000.00
			admin. Assistant			
		80,000.00	Miscellaneous/monitoring & evaluation	MISC	74500	25,000.00
			International M&E missions			
		20,000.00	Mission costs/Travel	TRAV	71600	5,000.00
			Local duty travel			
		240,000.00	Local Personnel	PERLOC	71300	60,000.00
			National professionals/project			

			Manager			
		<b>588,000.00</b>	<b>Subtotal year 2 activity 1/management:</b>			<b>177,000.00</b>
<b>Activity 2:</b>	SUBCONTRACTS	170,000.00	Service Contracts	SERCT CFL	72100	140,000.00
<b>Research</b>			CFL marketing strategy and campaign			
		50,000.00	Service Contracts	SERCT GI	72100	25,000.00
			General information dissemination and marketing			
		170,000.00	Service Contracts	SERCT EA	72100	97,500.00
			Energy Audits			
		160,000.00	Service Contracts	SERCT TDD	72100	32,500.00
			Technical due dilligence			
		60,000.00	Service Contracts	SERCT LA	72100	25,000.00
			Legal advisory sercvices			
		30,000.00	Service Contracts	SERCT GHG	72100	12,500.00
			GHG Emissions monitoring			
		40,000.00	Service Contracts	SERCT TRANSL	72100	12,500.00
			Translations			
		<b>680,000.00</b>	<b>subtotal year 2 activity 2/research:</b>			<b>345,000.00</b>
<b>Activity 3</b>	TRAINING	35,000.00	Miscellaneous	MISC STUDY TOURS	74500	16,250.00
<b>Training - study tours and workshops</b>			study tours			
		55,000.00	Miscellaneous	MISC WKSH&SEM	74500	15,000.00
			workshops and seminars			
		90,000.00	<b>Subtotal year 2 activity 3/Training:</b>			<b>31,250.00</b>
<b>Activity 4</b>	EQUIPMENT	20,000.00	Equipment	EQUIP EXPEND	72200	8,750.00
<b>Equipment</b>			Expendable Equipment			
		50,000.00	Equipment	EQUIP NON-EXPEND	72200	20,000.00
			Non-expendable equipment			

		300,000.00	Equipment	EQUIP CFL	72200	300,000.00
			CFL-sales guarantees			
		46,000.00	Equipment	EQUIP OPERAT	72200	12,000.00
			Operations			
		416,000.00	<b>Subtotal year 2 activity 4/equipment:</b>			<b>340,750.00</b>
<b>Activity 5</b>	MISCELLANEOUS	46,000.00	Miscellaneous	MISC REP&PUB	74100	12,500.00
<b>Miscellaneous</b>			Reporting and Publications			
		40,000.00	Miscellaneous	MISC AUDIT	74100	12,500.00
			Audits			
		30,000.00	Miscellaneous	MISC SUNDR	74500	10,000.00
			Sundries			
		116,000.00	<b>Subtotal year 2 activity 5/miscellaneous:</b>			<b>35,000.00</b>
<b>Activity 6</b>	GRANTS	2,000,000.00	Micro Capital Grants (OT)	MCGOT PGF	72600	625,000.00
<b>Grants</b>			Partial Guarantee Facility			
		500,000.00	Micro Capital Grants (OT)	MCGOT PDF	72600	350,000.00
			Project Development Fund			
		2,500,000.00	<b>Subtotal year 2 activity 6/grants:</b>			<b>975,000.00</b>
		<b>4,390,000.00</b>	<b>GRAND TOTAL YEAR 2:</b>			<b>1,904,000.00</b>

Period Year 3: 01/01/2006 - 31/12/2006

KEY	ACTIVITY	4-YEAR	INPUTS	BUDGET	BUDGET	BUDGET
ACTIVITY	DESCRIPTION	GRAND TOTAL	DESCRIPTION	DESCRIPTION	ACCOUNT	AMOUNT
<b>Activity 1:</b>	PROJECT PERSONNEL	200,000.00	International Personnel	PERINT	71200	52,500
<b>Management</b>			Short term Experts			
		48,000.00	Admin Personnel	PERADM	71200	12,000.00
			Admin. Assistant			
		80,000.00	Miscellaneous/monitoring and evaluation	MISC	74500	20,000.00
			International M&E missions			

		20,000.00	Mission costs/Travel	TRAV	71600	5,000.00
			Local Duty Travel			
		240,000.00	Local Personnel	PERLOC	71300	60,000.00
			National Professionals/project Manager			
		<b>588,000.00</b>	<b>subtotal year 3 activity 1/management:</b>			<b>149,500.00</b>
<b>Activity 2:</b>	SUBCONTRACTS	170,000.00	Service Contracts	SERCT CFL	72100	30,000.00
<b>Research</b>			CFL marketing strategy and campaign			
		50,000.00	Service Contracts	SERCT GI	72100	8,750.00
			General information dissemination and marketing			
		170,000.00	Service Contracts	SERCT EA	72100	55,000.00
			Energy Audits			
		160,000.00	Service Contracts	SERCT TDD	72100	50,000.00
			Technical due dilligence			
		60,000.00	Service Contracts	SERCT LA	72100	17,500.00
			Legal advisory sercvices			
		30,000.00	Service Contracts	SERCT GHG	72100	8,750.00
			GHG Emissions monitoring			
		40,000.00	Service Contracts	SERCT TRANSL	72100	10,000.00
			Translations			
		<b>680,000.00</b>	<b>Subtotal year 3 activity 2/research:</b>			<b>180,000.00</b>
<b>Activity 3</b>	TRAINING	35,000.00	Miscellaneous	MISC STUDY TOURS	74500	18,750.00
<b>training - study tours and workshops</b>			Study Tours			
		55,000.00	Miscellaneous	MISC WKSH&SEM	74500	13,750.00
			Workshops and Seminars			
		90,000.00	<b>Subtotal year 3 activity 3/training:</b>			<b>32,500.00</b>
<b>Activity 4</b>	EQUIPMENT	20,000.00	Equipment	EQUIP EXPEND	72200	4,500.00
<b>Equipment</b>			Expendable Equipment			
		50,000.00	Equipment	EQUIP NON-EXPEND	72200	16,250.00



			Non-expendable Equipment			
		300,000.00	Equipment	EQUIP CFL	72200	0.00
			CFL-sales guarantees			
		46,000.00	Equipment Operations	EQUIP OPERAT	72200	12,000.00
		416,000.00	<b>subtotal year 3 activity 4/equipment:</b>			<b>32,750.00</b>
<b>Activity 5</b>	MISCELLANEOUS	46,000.00	Miscellaneous	MISC REP&PUB	74100	10,000.00
<b>Miscellaneous</b>			Reporting and Publications			
		40,000.00	Miscellaneous	MISC AUDIT	74100	10,000.00
			Audits			
		30,000.00	Miscellaneous	MISC SUNDR	74500	8,750.00
			Sundries			
		116,000.00	<b>Subtotal year 3 activity 5/miscellaneous:</b>			<b>28,750.00</b>
<b>Activity 6</b>	GRANTS	2,000,000.00	Micro Capital Grants (OT)	MCGOT PGF	72600	625,000.00
<b>Grants</b>			partial guarantee facility			
		500,000.00	Micro Capital Grants (OT)	MCGOT PDF	72600	150,000.00
			project development fund			
		2,500,000.00	<b>Subtotal year 3 activity 6/grants:</b>			<b>775,000.00</b>
		<b>4,390,000.00</b>	<b>GRAND TOTAL YEAR 3:</b>			<b>1,198,500.00</b>
<b>Period Year 4: 01/01/2007 - 31/12/2007</b>						
<b>KEY</b>	<b>ACTIVITY</b>	<b>4-YEAR</b>	<b>INPUTS</b>	<b>BUDGET</b>	<b>BUDGET</b>	<b>BUDGET</b>
<b>ACTIVITY</b>	<b>DESCRIPTION</b>	<b>GRAND TOTAL</b>	<b>DESCRIPTION</b>	<b>DESCRIPTION</b>	<b>ACCOUNT</b>	<b>AMOUNT</b>
<b>Activity 1:</b>	PROJECT PERSONNEL	200,000.00	International Personnel	PERINT	71200	30,000.00
<b>Management</b>			Short term experts			
		48,000.00	Admin Personnel	PERADM	71200	12,000.00
			Admin. Assistant			
		80,000.00	Miscellaneous/monitoring and evaluation	MISC	74500	20,000.00

			International M&E missions			
		20,000.00	Mission costs/Travel	TRAV	71600	5,000.00
			Local duty travel			
		240,000.00	Local Personnel	PERLOC	71300	60,000.00
			National professionals/project manager			
		<b>588,000.00</b>	<b>subtotal year 4 activity 1/management:</b>			<b>127,000.00</b>
<b>Activity 2:</b>	SUBCONTRACTS	170,000.00	Service Contracts	SERCT CFL	72100	0
<b>Research</b>			CFL marketing strategy and campaign			
		50,000.00	Service Contracts	SERCT GI	72100	5,000.00
			General information dissemination and marketing			
		170,000.00	Service Contracts	SERCT EA	72100	10,000.00
			Energy Audits			
		160,000.00	Service Contracts	SERCT TDD	72100	47,500.00
			Technical due dilligence			
		60,000.00	Service Contracts	SERCT LA	72100	10,000.00
			Legal advisory servcices			
		30,000.00	Service Contracts	SERCT GHG	72100	5,000.00
			GHG Emissions monitoring			
		40,000.00	Service Contracts	SERCT TRANSL	72100	10,000.00
			Translations			
		<b>680,000.00</b>	<b>Subtotal year 4 activity 2/research:</b>			<b>87,500.00</b>
<b>Activity 3</b>	TRAINING	35,000.00	Miscellaneous	MISC STUDY TOURS	74500	0
<b>training - study tours and workshops</b>			Study Tours			
		55,000.00	Miscellaneous	MISC WKSH&SEM	74500	11,250.00
			Workshops and Seminars			
		90,000.00	<b>Subtotal year 4 activity 3/training:</b>			<b>11,250.00</b>
<b>Activity 4</b>	EQUIPMENT	20,000.00	Equipment	EQUIP EXPEND	72200	2,750.00
<b>Equipment</b>			Expendable equipment			
		50,000.00	Equipment	EQUIP NON-EXPEND	72200	5,000.00

			Non-expendable equipment			
		300,000.00	Equipment	EQUIP CFL	72200	0
			CFL-sales guarantees			
		46,000.00	Equipment	EQUIP OPERAT	72200	11,500.00
			Operations			
		416,000.00	<b>Subtotal year 4 activity 4/equipment:</b>			<b>19,250.00</b>
<b>Activity 5</b>	MISCELLANEOUS	46,000.00	Miscellaneous	MISC REP&PUB	74100	11,500.00
<b>Miscellaneous</b>			reporting and publications			
		40,000.00	Miscellaneous	MISC AUDIT	74100	10,000.00
			Audits			
		30,000.00	Miscellaneous	MISC SUNDR	74500	5,000.00
			Sundires			
		116,000.00	<b>Subtotal year 4 activity 5/miscellaneous:</b>			<b>26,500.00</b>
<b>Activity 6</b>	GRANTS	2,000,000.00	Micro Capital Grants (OT)	MCGOT PGF	72600	750,000.00
<b>Grants</b>			partial guarantee facility			
		500,000.00	Micro Capital Grants (OT)	MCGOT PDF	72600	0
			project development fund			
		2,500,000.00	<b>subtotal year 4 activity 6/grants:</b>			<b>750,000.00</b>
		<b>4,390,000.00</b>	<b>GRAND TOTAL YEAR 4:</b>			<b>1,021,500.00</b>

**Period Year 5: 01/01/2008 - 30/09/2008**

KEY	ACTIVITY	4-YEAR	INPUTS	BUDGET	BUDGET	
ACTIVITY	DESCRIPTION	GRAND TOTAL	DESCRIPTION	DESCRIPTION	ACCOUNT	
<b>Activity 1:</b>	PROJECT PERSONNEL	200,000.00	International Personnel	PERINT	71200	22,500.00
<b>Management</b>			Short term Experts			
		48,000.00	Admin Personnel	PERADM	71200	9,000.00
			Admin Assistant			
		80,000.00	Miscellaneous/monitoring and Evaluation.	MISC	74500	15,000.00

			International M&E missions			
		20,000.00	Mission costs/Travel	TRAV	71600	3,750.00
			Local Duty travel			
		240,000.00	Local Personnel	PERLOC	71300	45,000.00
			National professionals/project manager			
		<b>588,000.00</b>	<b>Subtotal year 4 activity 1/management:</b>			<b>95,250.00</b>
<b>Activity 2:</b>	SUBCONTRACTS	170,000.00	Service Contracts	SERCT CFL	72100	
<b>Research</b>			CFL marketing strategy and campaign			
		50,000.00	Service Contracts	SERCT GI	72100	3,750.00
			General information dissemination and marketing			
		170,000.00	Service Contracts	SERCT EA	72100	7,500.00
			Energy Audits			
		160,000.00	Service Contracts	SERCT TDD	72100	30,000.00
			Technical due dilligence			
		60,000.00	Service Contracts	SERCT LA	72100	7,500.00
			Legal advisory sercvices			
		30,000.00	Service Contracts	SERCT GHG	72100	3,750
			GHG Emissions monitoring			
		40,000.00	Service Contracts	SERCT TRANSL	72100	7,500.00
			Translations			
		<b>680,000.00</b>	<b>subtotal year 4 activity 2/research:</b>			<b>60,000.00</b>
<b>Activity 3</b>	TRAINING	35,000.00	Miscellaneous	MISC STUDY TOURS	74500	
<b>training - study tours and workshops</b>			Study Tours			
		55,000.00	Miscellaneous	MISC WKSH&SEM	74500	11,250.00
			Workshops and seminars			
		90,000.00	<b>subtotal year 4 activity 3/training:</b>			<b>11,250.00</b>
<b>Activity 4</b>	EQUIPMENT	20,000.00	Equipment	EQUIP EXPEND	72200	1,500.00
<b>Equipment</b>			Expendable equipment			

		50,000.00	Equipment	EQUIP NON-EXPEND	72200	3,750.00
			Non-expendable equipment			
		300,000.00	Equipment	EQUIP CFL	72200	
			CFL-sales guarantees			
		46,000.00	Equipment operations	EQUIP OPERAT	72200	7,500.00
		416,000.00	<b>Subtotal year 4 activity 4/equipment:</b>			<b>12,750.00</b>
<b>Activity 5</b>	MISCELLANEOUS	46,000.00	Miscellaneous	MISC REP&PUB	74100	12,000.00
<b>Miscellaneous</b>			reporting and publications			
		40,000.00	Miscellaneous	MISC AUDIT	74100	7,500.00
			Audits			
		30,000.00	Miscellaneous	MISC SUNDR	74500	3,750.00
			Sundries			
		116,000.00	<b>Subtotal year 4 activity 5/miscellaneous:</b>			<b>23,250.00</b>
<b>Activity 6</b>	GRANTS	2,000,000.00	Micro Capital Grants (OT)	MCGOT PGF	72600	0
<b>Grants</b>			partial guarantee facility			
		500,000.00	Micro Capital Grants (OT)	MCGOT PDF	72600	0
			project development fund			
		2,500,000.00	<b>subtotal year 4 activity 6/grants:</b>			0.00
year 1	63,500.00	<b>4,390,000.00</b>	<b>GRAND TOTAL YEAR 5:</b>			<b>202,500.00</b>
year 2	1,904,000.00					
year 3	1,198,500.00					
year 4	1,021,500.00					
year 5	202,500.00					
	<b>4,390,000.00</b>					



						Start		Fund	Donor	Budget Descr		Amount US\$
00034424	Removing Barriers to Improving			EQUIPMENT		8/3/04	Ministry of Economy Croatia	62000	GEFTrustee	72200	Equipment and Furniture	340,750.00
				GRANTS		8/3/04	Ministry of Economy Croatia	62000	GEFTrustee	72600	Grants	975,000.00
				MISCELLANEUS		8/3/04	Ministry of Economy Croatia	62000	GEFTrustee	74100	Professional Services	25,000.00
							Ministry of Economy Croatia	62000	GEFTrustee	74500	Miscellaneous Expenses	10,000.00
				PROJECT PERSONNEL		8/3/04	Ministry of Economy Croatia	62000	GEFTrustee	71200	International Consultants	87,000.00
							Ministry of Economy Croatia	62000	GEFTrustee	71300	Local Consultants	60,000.00
							Ministry of Economy Croatia	62000	GEFTrustee	71600	Travel	5,000.00
							Ministry of Economy Croatia	62000	GEFTrustee	74500	Miscellaneous Expenses	25,000.00
				SUBCONTRACTS		8/3/04	Ministry of Economy Croatia	62000	GEFTrustee	72100	Contractual Services - Companies	345,000.00
				TRAINING		8/3/04	Ministry of Economy Croatia	62000	GEFTrustee	74500	Miscellaneous Expenses	31,250.00
				<b>TOTAL</b>								<b>1,904,000.00</b>
				<b>GRAND TOTAL</b>								<b>1,904,000.00</b>

Year: 2006

Project ID Expected Outputs Key Activities Timeframe Planned Budget

						Start		Fund	Donor	Budget Descr		Amount US\$
00034424	Removing Barriers to Improving			EQUIPMENT		8/3/04	Ministry of Economy Croatia	62000	GEFTrustee	72200	Equipment and Furniture	32,750.00
				GRANTS		8/3/04	Ministry of Economy Croatia	62000	GEFTrustee	72600	Grants	775,000.00
				MISCELLANEUS		8/3/04	Ministry of Economy Croatia	62000	GEFTrustee	74100	Professional Services	20,000.00
							Ministry of Economy Croatia	62000	GEFTrustee	74500	Miscellaneous Expenses	8,750.00

				PROJECT PERSONNEL		8/3/04	Ministry of Economy Croatia	62000	GEFTrustee	71200	International Consultants	64,500.00
							Ministry of Economy Croatia	62000	GEFTrustee	71300	Local Consultants	60,000.00
							Ministry of Economy Croatia	62000	GEFTrustee	71600	Travel	5,000.00
							Ministry of Economy Croatia	62000	GEFTrustee	74500	Miscellaneous Expenses	20,000.00
				SUBCONTRACTS		8/3/04	Ministry of Economy Croatia	62000	GEFTrustee	72100	Contractual Services-Companies	180,000.00
				TRAINING		8/3/04	Ministry of Economy Croatia	62000	GEFTrustee	74500	Miscellaneous Expenses	32,500.00
				<b>TOTAL</b>								<b>1,198,500.00</b>
				<b>GRAND TOTAL</b>								<b>1,198,500.00</b>



Year: 2007

Project ID	Expected Outputs	Key Activities	Timeframe	Start	Fund	Donor	Budget Descr	Amount US\$
00034424	Removing Barriers to Improving	EQUIPMENT		8/3/04	Ministry of Economy Croatia	62000	GEFTrustee 72200	Equipment and Furniture 19,250.00
		GRANTS		8/3/04	Ministry of Economy Croatia	62000	GEFTrustee 72600	Grants 750,000.00
		MISCELLANEUS		8/3/04	Ministry of Economy Croatia	62000	GEFTrustee 74100	Professional Services 21,500.00
					Ministry of Economy Croatia	62000	GEFTrustee 74500	Miscellaneous Expenses 5,000.00
		PROJECT PERSONNEL		8/3/04	Ministry of Economy Croatia	62000	GEFTrustee 71200	International Consultants 42,000.00
					Ministry of Economy Croatia	62000	GEFTrustee 71300	Local Consultants 60,000.00
					Ministry of Economy Croatia	62000	GEFTrustee 71600	Travel 5,000.00
					Ministry of Economy Croatia	62000	GEFTrustee 74500	Miscellaneous Expenses 20,000.00
		SUBCONTRACTS		8/3/04	Ministry of Economy Croatia	62000	GEFTrustee 72100	Contractual Services-Companies 87,500.00
		TRAINING		8/3/04	Ministry of Economy Croatia	62000	GEFTrustee 74500	Miscellaneous Expenses 11,250.00
		<b>TOTAL</b>						<b>1,021,500.00</b>
		<b>GRAND TOTAL</b>						<b>1,021,500.00</b>

Year: 2008

Project ID	Expected Outputs	Key Activities	Timeframe	Start	Fund	Donor	Budget Descr	Planned Budget	Amount US\$
00034424	Removing Barriers to Improving	EQUIPMENT		8/3/04	Ministry of Economy Croatia	62000	GEFTrustee 72200	Equipment and Furniture	12,750.00
		MISCELLANEUS		8/3/04	Ministry of Economy Croatia	62000	GEFTrustee 74100	Professional Services	19,500.00
					Ministry of Economy Croatia	62000	GEFTrustee 74500	Miscellaneous Expenses	3,750.00
		PROJECT PERSONNEL		8/3/04	Ministry of Economy Croatia	62000	GEFTrustee 71200	International Consultants	31,500.00
					Ministry of Economy Croatia	62000	GEFTrustee 71300	Local Consultants	45,000.00
					Ministry of Economy Croatia	62000	GEFTrustee 71600	Travel	3,750.00
					Ministry of Economy Croatia	62000	GEFTrustee 74500	Miscellaneous Expenses	15,000.00
		SUBCONTRACTS		8/3/04	Ministry of Economy Croatia	62000	GEFTrustee 72100	Contractual Services-Companies	60,000.00
		TRAINING		8/3/04	Ministry of Economy Croatia	62000	GEFTrustee 74500	Miscellaneous Expenses	11,250.00
		<b>TOTAL</b>							<b>202,500.00</b>
		<b>GRAND TOTAL</b>							<b>202,500.00</b>





<p><b>Output 3.1</b> Increased awareness of the owners of the public and commercial buildings on the available energy efficient technologies and measures. <u>Activities:</u></p>	EIHP																		
3.1.1 Organizing general information dissemination and marketing campaigns, including targeted energy audits.	EIHP	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■
<p><b>Output 3.2</b> Enhanced capacity of the local stakeholders to initiate and support the implementation of energy efficiency measures in the service sector <u>Activities:</u></p>	EIHP																		
3.2.1 Establishing strategic partnerships between the local research institutes and private sector representatives (banks, engineering companies etc.) and building their capacity	EIHP	■	■																
3.2.2 Providing guidelines and incentives for energy audits and for the preparation of “bankable” feasibility studies and business plans	EIHP	■	■	■	■	■	■												
<p><b>Output 3.3</b> A pipeline of “bankable” energy efficiency investment proposals for the service sector facilities and, as applicable, in other sectors <u>Activities</u></p>								■											
3.3.1 Launching a campaign of free “walk through” energy audits	EIHP + selected subcontractors/ partners	■	■	■															
3.3.2 Presenting and discussing the results of the audits with the targeted clients	EIHP + selected subcontractors/ partners		■	■	■	■	■	■											
3.3.3 Supporting the development of the projects into full-fledged investments proposals.	EIHP + selected subcontractors/ partners			■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■
<p><b>Output 3.4</b> A Partial Guarantee Facility to leverage financing for the energy efficiency investments <u>Activities:</u></p>	HBOR																		
3.4.1 Establishing a Partial Guarantee Facility	HBOR	■	■	■															
<p><b>Output 4.1</b> A system for monitoring the GHG emission reductions of the proposed pilot/demonstration projects in place <u>Activities:</u></p>																			
4.1.1 Developing a Project Monitoring and Verification Protocol for monitoring the GHG emission reductions of the selected pilot/demonstration projects	EIHP	■	■	■															

4.1.2 As needed, preparing the specifications for, procuring and installing the required technical equipment to facilitate proper monitoring of the projects.	EIHP																		
4.1.3 Training the operating personnel of projects to compile and report the necessary information.	EIHP																		
<b>Output 4.2</b> Project results, experiences and lessons learnt documented and disseminated at the national and regional level. <u>Activities:</u>	EIHP																		
4.2.1 Monitoring the pilot CFL campaign in the residential sector as well as the development and commissioning of the first pilot/demonstration projects in the service sector, evaluating and reporting the results and lessons learnt.	EIHP																		
4.2.2 Monitoring and verifying the GHG emission reductions achieved as a result of the projects.	EIHP																		
4.2.3 Conducting an independent project midterm and final evaluation	UNDP																		
4.2.4 Compiling, publishing and disseminating the final project report in Croatian and English summarizing the results, experiences and lessons learnt	EIHP																		
4.2.5 Organizing meetings, workshops and seminars with the participation of the key stakeholders to discuss the results and to initiate measures and activities needed at the policy and other levels to promote targeted EE investments.	EIHP																		

## ANNEX III

### Terms of Reference

#### Project Manager (BL 17.01)

##### Duties and Responsibilities:

Operational management of the project in accordance with the project document and the procedures presented in the UNDP NEX Operational Guidelines, ensuring that the envisioned project outputs are met on time.

##### Expected outputs:

The project finalised successfully according to outcomes and indicators set forth in the Project Planning Matrix and the project Monitoring and Evaluation Plan (Annexes VIII and IX).

##### General activities:

- overall co-ordination, management and supervision of the project implementation ensuring that the expected outputs are completed on time and that they comply with the specific project criteria and requirements;
- management of the project budget under the supervision of the Executing Agency and UNDP, ensuring that the experts are recruited and the equipment and other materials are procured in a timely and cost-effective manner in accordance with the UNDP rules and procedures;
- regular reporting of the progress of the project to the Executing Agency and UNDP as specified under Section H of the project document: “Project Review, Evaluation and Reporting” and the Monitoring and Evaluation Plan (Annex IX);
- effective co-ordination of the project with the other ongoing activities in Croatia and the dissemination of the project related information, including the establishment and regular updating of the project web-site;
- supervising and co-ordinating the work of the national experts and subcontractors;
- regular consultations with the targeted clients and other stakeholders so as to ensure that the project activities continue to address the most critical barriers to the promotion of energy efficiency technologies and investments in the targeted sectors; and
- liaising with the local private sector as well as international financing organisations to identify possibilities for co-operation and to leverage additional financial resources towards achieving the project objectives.

### The specific activities to be implemented at the outset of project operations:

- reviewing the results and key conclusions of all the past studies and other activities implemented for the promotion of energy efficiency in Croatia;
- reviewing the experiences and lessons learnt in other countries for the promotion of energy efficiency in the project related fields;
- continuing the consultations with the targeted clients and other stakeholders so as to ensure that the project activities will be targeted to address the most critical barriers to the promotion of energy efficiency technologies and investments in the residential and service sector and reporting about these consultations to UNDP;
- in consultation with the CO and the UNDP/GEF technical adviser(s), preparing the first quarterly work plan of the project;
- finalising the detailed guidelines for the preparation and submission of energy efficiency energy projects for financing; and
- facilitating the contracting of additional experts/subcontractors for the implementation of project activities.

### Qualifications

- a university degree and at least 5-10 years working experience in the project related field;
- demonstrated capacity to successfully manage projects of similar complexity, involving co-operation with the private sector in terms of initiating projects and mobilising financing for the actual investments;
- experience on project financing as well as on the implementation and marketing of specific technologies the project is dealing with;
- good marketing skills to successfully promote and advance the project activities among the targeted private sector clients, households and other project stakeholders;
- good interpersonal and training skills;
- good computer skills; and
- ability to work in both Croatian and English language.



## Terms of Reference

### CFL Marketing Strategy and Campaign (BL 21.01)

#### Duties:

By building on the results of the market analysis conducted during the PDF B phase of the project and in consultation with the PMU and UNDP, finalising the strategy, work plan and budget for the CFL marketing campaign and facilitating the successful implementation of the campaign otherwise.

#### Expected outputs:

- finalized design, work plan and budget for the CFL marketing campaign;
- successfully finalised marketing campaign based on the agreed division of responsibilities between the PMU and the subcontractor.

#### Activities

- reviewing and reporting to the PMU and UNDP the experiences and lessons learned from the CFL-marketing campaigns organised in other countries, including the activities financed by the GEF in this field;
- evaluating the results of the market surveys conducted during PDF B phase of the project;
- developing a draft strategy, work plan and budget for the marketing campaign;
- in consultation with the PMU and UNDP/GEF, finalising the strategy, work plan and budget for the marketing campaign; and
- supporting the actual implementation of the campaign to the extent needed (to be discussed and agreed after finalising the work plan for the campaign).

#### Qualifications

- good knowledge of the marketing environment in Croatia;
- demonstrated capacity to successfully design and implement marketing campaigns corresponding to the goals of the project; and
- ability to work and present the results in Croatian and English.

## Terms of Reference

### Other Information Dissemination and Marketing (BL 21.02)

#### Duties:

Apart from the CFL marketing campaign, finalising the strategy, work plan and budget for additional information dissemination and marketing activities to support the project in meeting its set objectives and outcomes.

#### Expected outputs:

- finalized strategy, work plan and budget for additional information dissemination and marketing activities to be conducted in the frame of the project; and
- successfully finalised information dissemination and marketing activities in selected fields based on the agreed division of responsibilities between the PMU and the subcontractor.

#### Activities

- apart from the CFL-campaign, evaluating the needs for additional information dissemination and marketing activities to support the project in meeting its set outcomes and objectives such as initiating investment proposals, facilitating negotiations and leveraging financing for the energy efficiency investments in the service sector;
- reviewing the results of the surveys and consultations conducted during PDF B phase of the project;
- reviewing and reporting to the PMU and UNDP the experiences and lessons learned from the EE marketing campaigns organised in other countries, including the activities financed by the GEF in this field as well as the experiences of private Energy Service Companies (ESCOs) in marketing their services in Croatia and elsewhere;
- developing a draft strategy, work plan and budget for the additional information dissemination and marketing activities to be conducted in the frame of the project, including free “walk-through” energy audits offered for the service sector facilities and measures to support them such as the provision of specific incentives for active involvement of private sector companies in the identification and further development of projects until their financial closure (e.g by introducing a contracting modality for initial energy audits and further development of projects based partially on the use of a success fee)
- in consultation with the PMU and UNDP/GEF, finalising the strategy, work plan, budget and, as applicable, terms of reference and tender documents for the proposed activities; and
- supporting the actual implementation of the activities to the extent needed.

#### Qualifications

- demonstrated capacity to successfully design and implement information dissemination and marketing campaigns corresponding to the goals of the project.
- ability to work in Croatian and English;

## Terms of Reference<sup>3</sup>

### Initial Energy Audits (BL 21.03)

#### Duties:

Finalising an initial energy audit in the premises of .....

#### Expected outputs:

A report compiling the results of the energy audit conducted in the premises of....., based on the draft list of content presented as an Annex to these Terms of Reference (to be finalized at the outset of project operations).

#### Activities

- conducting the audit and preparing a report of the audit in Croatian and English according to the draft list of content presented as an Annex to these Terms of Reference (to be finalized)..
- as needed, facilitating the negotiations about the continuation of the work towards the actual feasibility study and preparation of an investment proposal.

#### Qualifications

- demonstrated capacity to successfully conduct the audits.
- ability to present the results of the audit both in Croatian and English language;

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<sup>3</sup> A template for the ToR of energy audits for the companies/clients requesting support. The possibility to introduce the idea of a success fee into the terms of reference, tender documents and the final contracts will be further explored at the outset of project operations.

## Terms of Reference

### Technical Due Diligence (BL 21.04)<sup>4</sup>

#### Duties:

Undertaking technical due diligence of the EE investment proposal for the project titled “.....”, based on the check list presented as an Annex to these Terms of Reference (to be finalised at the outset of project operations).

#### Expected outputs:

Technical due diligence of the EE investment proposal titled “.....”.

#### Activities

Undertaking technical due diligence of the EE investment proposal for the project titled “.....”, based on the check list presented as an Annex to these Terms of Reference.

#### Qualifications

- demonstrated capacity to successfully undertake the due diligence.
- ability to present the results of the due diligence both in Croatian and English language;

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<sup>4</sup> General Terms of Reference for the due diligence of the EE investment proposals / loan applications submitted to the HBOR.

**Terms of Reference**

**Legal Advisory Services (BL 21.05)**

To be determined during the implementation of the project based on the actual needs.

## Terms of Reference

### GHG emission monitoring and analysis (BL 21.06)

#### Duties:

Conducting a GHG emission reduction analysis of the project.

#### Expected outputs:

An analysis of the GHG emission reductions achieved through the direct implementation of the investment projects supported as well as through the envisioned replication of the activities over the next 20 years.

#### Activities

- specifying/updating the baseline and developing a “Project Monitoring and Verification Protocol” for monitoring the GHG emission reductions of the pilot/demonstration projects to be implemented (incl. the pilot CFL campaign);
- as needed, preparing the specifications for, procuring and installing the required technical equipment to facilitate proper monitoring of the projects;
- training the operating personnel of projects to compile and report the necessary information;
- monitoring, verifying and reporting the GHG emission reductions achieved as a result of the first pilot/demonstration projects (incl. the CFL campaign);
- updating the analysis of the GHG emission reduction potential of the projects through their widespread replication; and
- finalizing the report of results and conclusions of the analysis.

#### Qualifications

- experience in preparation of GHG emission inventory with proven quality and full familiarity with UNFCCC guidelines for emission inventory calculation and reporting
- Demonstrated capacity and experience to successfully conduct the analysis described above;
- Ability to work in Croatian and English.

**EQUIPMENT REQUIREMENTS \*)**

Expendable equipment (consumables) includes items of a value of less than US\$ 400 with serviceable life expectancy of less than five years.

Non-expendable equipment includes items of a value of US\$ 400 or more, with a serviceable life expectancy of at least five years. The executing/implementing agency will maintain inventory records of these items.

The project will follow UNDP procurement procedures, according to the value of purchased goods. UNDP/GEF supported equipment will remain UNDP's property until formally transferred will be made by the UNDP Resident Representative, in consultation with the Parties concerned. The Executing/Implementing Agency will be responsible for ensuring that the use of equipment and supplies procured with UNDP/GEF funds is strictly for the purpose of the project. It will see for its proper custody, maintenance and care and provide UNDP, upon request, with information regarding the use, storage and maintenance of such equipment.

\*) To be finalised at the outset of project operations, based on the actual needs.

**CFL Sales Guarantees (BL 45.03)**

As a part of the CFL marketing campaign, partial sales guarantees are offered to the CFL manufacturers with the purpose to reduce the wholesale price of the CFLs through the market aggregation and economies of scale. The CFL manufacturers are requested to make their price offer for 100,000 lamps that are aimed to be sold during the pilot CFL campaign under the conditions that:

- the payment for the lamps will be made to the lamp manufacturers after the end of the campaign based on the actual number of lamps sold; and
- the unsold lamps can be returned to the lamp manufacturer, used for resale in another cycle of the campaign or other (e.g. sold for use in public buildings) depending on the terms stipulated in the tender documentation and agreed by all the parties to the project. The additional costs of each option may be shared by the GEF project up to the agreed amount in the form of a sales guarantee.

The two options for incorporating the partial sales guarantees into the tender for purchasing the lamps will be as follows:

- 1) the tender documents will fix the amount that will be compensated for the lamp manufacturer for each unsold piece of the CFL returned, in which case the lamp manufacturers will only compete with the price of the lamps (based on the technical specifications described in the tender documents); or
- 2) the lamp manufacturers are requested to make their offer both for the net price of 100,000 CFLs and the amount of compensation they would need for each unsold compact fluorescent lamp. In this latter case, the tender documents will determine the ratio, in which these two cost items will be taken into account in the final evaluation of the offers.

The final selection between the options described above will be made as a part of finalising the tender documents for the purchase of the CFLs and after additional, preliminary consultations with the lamp manufacturers have been conducted about the preferred way to proceed.

The unused portion of the resources allocated for budget line 45.03 after the first pilot campaign can be used for supporting the replication of similar campaigns in other regions or alternatively the resources can be incorporated into the Project Development Fund or the Partial Guarantee Facility presented in Annexes VI and VII.



### **Project Development Fund (BL 72.02)**

As a part of the effort to leverage financing for the energy efficiency investments in the service sector, a Project Development Fund will be established with a purpose to share the project development risk with the project proponent, should the initial energy audit lead to the further preparation of the actual investment project. The Fund will be managed by the Croatian Bank for Reconstruction and Development with technical support from the Energy Institute Hrvoje Pozar. After that, depending on the amount of resources left and subject to the agreement between the Government Croatia and UNDP, the management of the Fund can be transferred to another entity best adopted for this task.

The draft criteria for the management of the Project Development Fund will be as follows:

- Based on the outcome of the initial energy audit, the Fund will share up to 50 % of the costs or, as applicable, up to the other amount approved by UNDP at the outset of project operations of preparing a full feasibility study, business plan and investment proposal / loan application responding to the requirements of the targeted financiers;
- The support will be provided in the form of a contingent grant, meaning that if the loan application will lead to the actual investment decision, the project development costs will be incorporated into the total project costs and the contribution of the Fund will be paid back to the Fund by the client (e.g. by including this contribution into the loan)<sup>5</sup>. In the opposite case, the Fund will share the project development costs (i.e losses) with the client by transforming the contingent grant (or an agreed portion of that) into a grant;
- The support is provided based on the proposals received on a “first come first served” basis (with the initial focus on the service sector) - subject to the consistency of the proposal with the template and the project screening criteria to be prepared at the outset of project operations; and
- The funds will be transmitted to the clients based on the actual invoices received and subject to the review and approval of the deliverables by the Fund Manager, supported by the EIHP.

Should the Fund be successful in supporting the development of “bankable” proposals and loan applications for energy efficiency investments, the primary option is to grant the funds to Government of Croatia / HBOR to facilitate the continuation of the project development activities. Decision on this possibility will be a function of the remaining resources in the Fund, continued market need and the overall performance of the Fund. In the case that the continuation of the Fund does not look feasible, the UNDP and the WB will enter into negotiations with the Government of Croatia about the possible alternative use of the remaining resources in line with the project objectives.

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<sup>5</sup> A possibility to introduce a contracting modality based at least partially on the use of a success fee for the consulting companies supporting the project development will be further explored during the project implementation.

**Partial Guarantee Facility (BL 72.01)**  
**Guiding Principles<sup>6</sup>**

## **Introduction**

The United Nations Development Program (UNDP) and the World Bank (WB), in partnership with Hrvatska Elektroprivreda (HEP) and the Croatian Bank for Reconstruction and Development (HBOR) are developing a new guarantee program to support financing of energy efficiency (EE) projects by domestic financial institutions in Croatia. This program will be funded with two grants from the GEF, channelled through the two GEF implementing agencies: UNDP and the World Bank. The Croatian Bank for Reconstruction and Development (HBOR) has agreed to serve as the local Guarantor and manager for the guarantee program.

Budgets for the UNDP/GEF and the WB/GEF EE guarantee programs are US\$2 million and US\$1.2 million respectively. As manager of the guarantee program, HBOR will use the GEF funds as reserves against guarantee liabilities.

## **Program Objectives and Background**

Guarantee Program Objectives & Barriers Addressed. The main objectives of UNDP/GEF and WB/GEF for undertaking an EE finance guarantee program are to: (i) directly support financing of EE projects by addressing credit risk and transaction structuring barriers to EE finance, and (ii) engage and build capacities of commercial financial institutions to provide financing for EE projects on a commercially sustainable basis.

## **EE Guarantee Program Concept: Terms with Participating Banks**

### Eligible Transactions & Borrowers.

- investments for projects and equipment aimed at improving efficiency of energy use in buildings and facilities, excluding industrial processing.;
- investments in heating systems, including thermal and cogeneration plants and district heating systems upgrades,
- initial focus of the utilization of the UNDP/GEF guarantee reserves on the service sector. If this reserved guarantee capacity is not used within the pre-defined timeframe (e.g. two to three years), or if otherwise UNDP were to judge that it was not all going to be used, then this unused capacity can be made available for guarantees on loans to other end-user sectors;
- investments must be for new projects (not refinancing existing projects) and for projects using proven technologies developed with competent energy audit/feasibility studies which include energy savings monitoring plans;
- greenfield projects can be supported provided an appropriate baseline can be established;
- a maximum individual guarantee liability limit is estimated to be in the range of \$ 300,000-500,000;
- finance terms up to 10 years are anticipated, but with five to seven years being typical;
- a broad range of eligible types of EE projects and eligible end-users/borrowers will make the program more useful commercially, and will increase its utilization.

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<sup>6</sup> The complete operating plan and the templates for the guarantee facility and loan agreements (prepared jointly for the UNDP/GEF and WB/GEF projects) will be finalized at the outset of project operations. The draft documents can be made available upon request.

### Participating Banks & Guarantee Facility Agreement.

- guarantees will be provided to local banks to share in the credit risk of EE loans/leases which the partner banks would fund with their own resources;
- participating banks will be selected on the basis of their interest and capabilities in financing EE projects;
- initial selection of participating banks is suggested to be limited from two to five banks
- as Guarantor, HBOR would execute a framework "Guarantee Facility Agreement" (GFA) with participating banks pursuant to which the Guarantor would partially guarantee the bank's credit risk on qualified EE transactions;
- participating banks would propose specific transactions to be included under the Guarantee Framework Agreement. Upon approval of the transactions by the Guarantor, loan guarantees would be issued and executed by the Guarantor for the specific transactions;
- for small transactions, a portfolio guarantee structure, which authorizes the bank to automatically include qualified transactions under the guarantee, is contemplated;

### Indicative terms for the Guarantee Facility (final terms to be agreed)

- Maximum guarantee percentage: 50% of the total loan amount.
- Guarantee pricing: up to 1% of the liability limit per annum,
- Maximum guarantee term in years: 10 years.
- Maximum single transaction guarantee liability limit: \$500,000 (approximately 1/6 of the estimated program GEF guarantee reserves);
- Overall guarantee facility liability limit: to be defined in the GFA for each bank;
- Recovery process & distribution of recovered monies: Guarantor subordinate in recovery.

### Technical Assistance Program Financed Through The GEF Resources.

- training of HBOR and financial intermediaries' staff in EE finance and Guarantee Program operations management,
- assistance in marketing (incl. equipment vendors, contractors and project developers),
- assistance in project development,
- technical review and evaluation (engineering due diligence).

### **EE Guarantee Program Concept: Terms between HBOR and UNDP and WB**

#### Two Implementing Agreements, One Single Program

- design of two implementing agreements (between UNDP and HBOR and between WB and HBOR);
- a single guarantee program operation from HBOR's perspective. From the point of view of participating banks, the program would be singular;
- separate reporting, accounting, and financial management required for each donor (UNDP and WB). These requirements will be harmonized to the greatest extent possible, so that HBOR may prepare singular operating reports to the donors on program operations.

#### Ratio of Maximum Guarantee Liabilities to GEF Guarantee Reserves.

- initially, a 1:1 ratio would be applied;
- the ratio of maximum guarantee liabilities to GEF guarantee reserves is to be increased during the projects' lifetime;
- possible sources of funding to program guarantee capacity include Government of Croatia authority to assume contingent liabilities, or appropriations from the new Government of Croatia EE and Environmental Protection Fund being developed;

- GEF monies can be placed in a first loss position vis-a-vis other guarantee funding authority, meaning that all guarantee claims would be paid first from GEF funds. Therefore, the risk exposure position of any secondary funding agency offering to increase the guarantee capacity of the program can be designed to be very secure.

#### Operating Costs.

Guarantee fees and origination fees, as well as the interest earnings of the guarantee reserves can be used for covering the operating costs of the guarantee facility. At the initial period, however, the aforementioned fees will not suffice to cover program operating costs entirely. Therefore, it is expected that HBOR will contribute staff and office overhead to the program in-kind to supplement these income sources and meet the balance of program operating costs. This would exclude technical assistance provided by the GEF technical assistance resources for the technical review and evaluation of energy efficiency project applications as well as for the audits required by the donor agencies.

#### Program Term and "Exit Strategy" for GEF Funds.

Should the project be successful, the primary option of the project's exit strategy is to grant the funds to HBOR to continue the EE guarantee program. Decision on this possibility will be a function of continued market need, HBOR performance, guarantee portfolio performance, and, also, HBOR's ability to mobilize additional funding to increase the ratio of maximum guarantee program capacity to GEF funding. In the case that the continuation of the guarantee program does not look feasible, the UNDP and the WB will enter into negotiations with the Government of Croatia about the possible alternative use of the funds in line with the project objectives.

## ANNEX VIII

<b>PROJECT PLANNING MATRIX</b>			
<b>Project Strategy</b>	<b>Objectively Verifiable Indicators</b>	<b>Means of Verification</b>	<b>Assumptions</b>
<b>Development Goal:</b> Reducing Croatia's greenhouse gas emissions by removing barriers to and leveraging financing for the implementation of economically feasible energy efficiency technologies and measures in the residential and service sectors.	The demand for energy efficient equipment and projects show an increasing trend.  Increasing leveraging of financing for EE investments	Market surveys to be undertaken by selected consultants/NGOs towards the end of the project elaborating the extent to which the households or the service sector, respectively, have adopted the energy saving measures and technologies promoted by the project and/or are applying and getting financing for them.  Official statistics	Consistency with the official Government policy and strategies  Financial resources for energy efficiency investments are available, subject to the removal of the identified financial barriers.
<b>Immediate Objective 1:</b> Overcoming the general institutional barriers to the promotion of energy efficiency	The regional and other public authorities taking an active role in promoting the energy efficiency investments	Project reports	The basic institutional, legal and regulatory framework requesting/encouraging the regional authorities to promote energy efficiency exist
<b>Output 1.1:</b> Enhanced capacity of the regional authorities to promote energy efficiency	The regional authorities actively promoting energy efficiency investments and measures	Project reports	Full and committed participation of the regional authorities in the implementation of project activities
<b>Immediate Objective 2:</b> Overcoming the barriers to improving the energy efficiency of the residential sector	The demand for energy efficient equipment and projects show an increasing trend in the residential sector	Project reports, publications and official statistics	Economic and financial feasibility of the technologies to be promoted
<b>Output 2.1</b> Increased public awareness on the available energy efficient technologies and measures and their benefits to the consumers	The awareness of the people on the available energy efficient technologies and measures and their benefits to the consumers has increased.	Surveys conducted among selected households about the level of awareness that they have on possible cost effective energy saving measures in their apartments.	General interest of the public for energy efficiency improvements, when economically and financially viable
<b>Output 2.2:</b> A successfully conducted pilot marketing campaign to promote the purchase of the CFLs	At least 100,000 lamps sold during the campaign.	Project reports	
<b>Output 2.3:</b> Replication of similar campaigns for other regions and technologies	The activities replicated for other regions and, as applicable, technologies.	Project reports	

<b>Immediate Objective 3:</b> Overcoming the barriers to improving the energy efficiency within the service sector	The demand for energy efficient equipment and projects show an increasing trend in the service sector	Project reports, publications and official statistics	Economic and financial feasibility of the technologies to be promoted  Financial resources for energy efficiency investments available, pending the removal of the existing financial barriers.
<b>Output 3.1</b> Increased awareness of the owners of the public and commercial buildings on the available energy efficient technologies and measures	Awareness of the owners/operators of the buildings on the available energy efficient technologies and measures and their financial and other benefits to the customers increased	Surveys conducted among the management of selected public and commercial buildings about the level of awareness that they have on possible, cost-effective energy saving measures in their facilities.	General interest of the owners/operators of the building for energy efficiency improvements, when economically and financially viable
<b>Output 3.2</b> Enhanced capacity of the local stakeholders to initiate and support the development and implementation of energy efficiency measures in the service sector	Strategic partnerships between the key local stakeholders established.  Loan applications for high quality, “bankable” proposals submitted.  First demo projects successfully commissioned.	Project progress reports	Qualified institutions in Croatia to participate the project exist
<b>Output 3.3</b> A pipeline of “bankable” energy efficiency proposals	At least 10 “bankable” investment proposals fully developed for the submission for financing	Project progress report	Continuing interest of the targeted clients
<b>Output 3.4</b> A partial guarantee fund to leverage financing for the energy efficiency investments	The partial guarantee facility established and in operation. At least USD 7,500,000 worth of additional resources leveraged for energy efficiency investments.	Project progress reports	Close co-operation and consultations with the local banks and other financial institutions
<b>Immediate Objective 4</b> Facilitating the effective replication/utilisation of the project results and lessons learnt.	The activities replicated at the national and, as applicable, regional level.	Project monitoring	n.a.
<b>Output 4.1</b> A system for monitoring the GHG emission reductions of the proposed pilot/demonstration projects.	A system with trained personnel for monitoring the GHG emission reductions of the first pilot/demonstration projects in place	Project progress reports	
<b>Output 4.2</b> Project results, experiences and lessons learnt documented and disseminated at the national and regional level.	Final project report published and disseminated at the national and regional level.	Project reports	Successful completion of the project activities

	Workshops and other public outreach activities organised at the national and regional level to discuss and disseminate the project results, conclusions and recommendations.		
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## Annex IX

### MONITORING AND EVALUATION PLAN

As a result of the emphasis placed on results-based management, it has become mandatory for all GEF projects to develop a detailed Monitoring & Evaluation work plan at the inception of the activities. The M&E work plan will allow for a critical assessment of project performance by showing the schedule of the activities, their cost and the expected outputs and achievements according to the established benchmarks and milestones, as summarized in the table in the end of this Annex.

For monitoring and evaluation, the following definitions are used:

**Monitoring** is a continuous process of collecting and analysing information to measure the progress of a project towards its expected objectives and outputs. Monitoring should provide managers and project participants with regular feedback that can help determine whether the project is progressing as planned and the set benchmarks/indicators are met. Monitoring will also involve key project staff and UNDP counterparts in regular meetings to review the status of the project and to assess its progress towards the set targets.

**Evaluations** are periodic, typically annual assessments of project performance towards its stated objectives and outputs. The Project Planning Matrix and the table in the end of this Annex sets the indicators and benchmarks, against which the performance of the project will be measured. For this purpose, the Project Management Unit and UNDP will jointly prepare Annual Performance Reports (APRs) to be reviewed by the Tri-Partite Review (TPR) meeting with the representatives of the Host Country Government, the Executing Agency and UNDP. In the context of this project, the members of the Project Steering Committee will be invited to represent the Government also in the TPR meeting. By building on the APR process, the UNDP will further report on project performance to the GEF based on the annual Project Implementation Reviews (PIR).

In addition to the above, the project is subject to at least two independent evaluations, one in the middle and one in the end, conducted by a selected international expert. The UNDP may also organise additional project review or evaluation missions on as needed basis



## Standard M&E Activities, Timeframes, and Responsibilities\*

ACTIVITY	RESPONSIBILITIES	TIMEFRAMES
1. Development of the M&E plan, project work plan and the project planning matrix	<b>Project proponent</b> , together with UNDP/GEF staff, project development specialists and other stakeholders	During project design stage
2. Inception Report	<b>Project Manager</b>	Three months after the beginning of project implementation
3. Work Plan and Budget Revision	<b>Project Manager</b> , UNDP Country Office	Annually
4. Quarterly project progress reports	<b>Project Manager</b> , Project Team	Quarterly, to be submitted within 30 days after the end of the quarter
5. Project Implementation Review (PIR)/Annual Project Report (APR)	<b>Project Manager</b> , Project stakeholders, UNDP Country Office	Annually
5. Tripartite Review (TPR)	<b>UNDP Country Office</b> , Executing Agency and PSC,	Annually
7. Tripartite Review Report	<b>UNDP Country Office</b>	Annually, immediately following TPR
8. Mid-term and final evaluations	<b>UNDP Country Office</b>	At the mid-point and end of project implementation;
9. Terminal Report	<b>Project manager</b> , UNDP Country Office	At least one month before the end of the project
10. Audit	<b>Executing Agency/UNDP Country Office</b>	Annually

\* The unit in **bold** has the lead responsibility.

### **Reporting**

Ongoing project reporting will be provided in accordance with established UNDP procedures and will be provided by the UNDP Country Office with support from UNDP/GEF. Overall supervision of the Project will be the responsibility of the Project Director.

The Project Management Unit will be responsible for the preparation and submission of the following reports:

### ***Inception Report (IR)***

The inception report is to be prepared by the Project Manager, with the assistance of project experts as is deemed relevant. The IR will be prepared no later than three months after project start-up and will include a detailed work plan and budget for the duration of the project, progress to date on project establishment and start-up activities, and any proposed amendments to project activities or approaches. Detailed Work Plan for the Year 1 will be submitted within 30 days after the starting the implementation of the project. The report will be circulated to all the parties, who will be given a period of one calendar month, in which to respond with comments or queries. The report will also be reviewed by UNDP and GEF to ensure consistency with the objectives and activities indicated in the Project Document.

### ***(b) Harmonised Annual Project Report (APR)/Project Implementation Review (PIR)***

The Annual Project Report (APR) is designed to obtain the independent views of the project's main stakeholders concerning its continuing relevance, performance and the likelihood of its success. The APR aims to: a) provide a rating and textual assessment of the project in achieving its objectives; b) present stakeholders' insights into issues affecting project implementation and their proposals for addressing those issues; and c) serve as a source of inputs to the Tripartite Review (TPR). The main project stakeholders participate in the preparation of the APR.

A major tool for monitoring the GEF portfolio and extracting lessons is the annual GEF Project Implementation Review (PIR). The PIR has become an essential management and monitoring tool for project managers and offers the main vehicle for extracting lessons from ongoing projects.

The PIR is mandatory for all GEF projects that have been under implementation for at least one year at the time that the exercise is conducted. A project becomes legal and implementation activities can begin when all parties have signed the project document. The PIR questionnaire is sent to the UNDP country office, usually around the beginning of June. It is the responsibility of the Project Director/PM to complete the PIR questionnaire, with the oversight of the UNDP Country Office.

In order to reduce the load on the project teams, a *Harmonized APR/PIR* format has been developed to be filled in and submitted by the project team on the annual basis. APR/PIR will be prepared by the project management team with UNDP CO and other project stakeholders.

### ***(c) Periodic Status Reports***

As and when called for by the Project Director, the government or UNDP, the Project Manager will prepare Status Reports, focusing on identified specific issues or areas of activity. The request for a Status Report will be in written form, and will clearly state the issue or activities that need to be reported on. These reports can be used to provide specific overviews of key areas, or as troubleshooting exercises to evaluate and overcome any encountered obstacles and difficulties. The parties are requested to minimise requests for Status Reports and, when such are necessary, will allow reasonable timeframes for their preparation.

***(d) Technical Reports***

Technical Reports are detailed documents covering specific areas of analysis or scientific specialization within the overall project. As part of the Inception Report the Project Director/PM will prepare a draft Reports List, detailing the technical reports that are expected to be prepared on key areas of activity during the course of the Project, and tentative due dates. Where necessary, this Reports List will be revised and updated, and included in subsequent PIRs/APRs. Technical Reports may also be prepared by external consultants as Final Reports for their technical inputs, and should be comprehensive, specialized analyses of clearly-defined areas of research within the framework of the project and its sites.

***(e) Project Publications***

Project Publications will be a key tool for crystallizing and disseminating the results and achievements of the Project. These Publications will be scientific or informational texts on the activities and achievements of the Project, in the form of books, journal articles or multimedia publications. These Publications can be based on Technical Reports, depending upon the relevance, scientific worth, etc. of these Reports, or may be summaries or compilations of a series of Technical Reports and other research. The Project Director/PM will determine whether specific Technical Reports merit formal publication, and will also, in consultation with the government and other parties and with the help of external specialists and staff where necessary, plan and produce these Publications in a consistent and recognisable format and identity. These Publications will form the most visible public output of the Project, and as such should be prepared and presented to the highest scientific and technical standards.

***(f) Project Terminal Report***

During the last three months of the project, the Project Director/PM will prepare the Project Terminal Report. This comprehensive report will summarise all activities, achievements and outputs of the Project, lessons learned, objectives met and unattained, structures and systems implemented, etc. and will be the definitive statement of the Project's activities over its duration. It will also clearly set forth recommendations for any further steps that may need to be taken to ensure the sustainability and replicability of the Project's activities.

***(g) Other Publications and Publicity Activities***

In order to ensure international dissemination of project results, ***a high-quality publication of results*** will be prepared, based upon the Project Terminal Report and previous Project Publications. It will also be useful to hold at least one *international workshop or conference* to showcase the project and its results.

***Tripartite Review (TPR)***

The tripartite review (TPR) is the highest policy-level meeting of the parties directly involved in the implementation of a project. The project will be subject to Tripartite Review (TPR) at least once every twelve months by representatives of the Government, the executing agency and UNDP. The first such meeting is to be held within the first twelve months of the start of full implementation. The Project Management Unit will prepare an APR/PIR for submission to UNDP. The APR/PIR must be ready two weeks prior to the TPR.

The APR/PIR will be used as one of the basic documents for discussions in the TPR meeting. The National Project Director/PM presents the APR/PIR to the TPR, highlighting policy issues and recommendations for the decision of the TPR participants. The NPD also informs the participants

of any agreement reached by stakeholders during the APR/PIR preparation on how to resolve operational issues.

***Terminal Tripartite Review (TTR)***

The terminal tripartite review is held in the last month of project operations. The Project Manager will be responsible for preparing the Terminal Report and its submission to UNDP. It shall be prepared in draft form sufficiently in advance to allow review and technical clearance by the executing agency at least two months prior to the terminal tripartite review. The Terminal Report will serve as the basis for discussions in the TTR. The terminal tripartite review will consider the implementation of the project as a whole, paying particular attention to whether the project achieved its immediate objectives and contributed to the broader environmental objective, and will indicate whether any further actions are still necessary.

The tentative schedule for project reviews, reporting and evaluation will be as follows:

	Proposed Project Starting Date:	January 2004
	Inception Report	3-d month after the project beginning
	Project Steering Committee (PMC) meeting	3-d month after the project beginning
	1 <sup>st</sup> Annual Project Report (APR)	November 2004
	UNDP/GEF project review mission	December 2004
	Project Steering Committee (PMC) meeting	December 2004
	1 <sup>st</sup> Tripartite Review Meeting	December 2004
	2 <sup>nd</sup> Annual APR	November 2005
	External mid-term project evaluation	November 2005
	UNDP/GEF project review mission	December 2005
	Project Steering Committee (PMC) meeting	December 2005
	2 <sup>nd</sup> Tripartite Review Meeting	December 2005
	3 <sup>rd</sup> Annual Project Report (APR)	November 2006
	UNDP/GEF project review mission	December 2006
	Project Steering Committee (PMC) meeting	December 2006
	3 <sup>rd</sup> Tripartite Review Meeting	December 2006
	Terminal Report and 4 <sup>th</sup> APR/PIR	November 2007
	Final external project evaluation mission	December 2007
	Terminal Evaluation and Project Review	December 2007

In addition to the above, progress reports will be prepared on a quarterly basis, as per UNDP requirements

In addition to the meetings listed above, the Project Steering Committee will have intermediate meetings on “as needed basis”, but at least bi-annually to review the progress of the project.

This plan is subject to amendment as per requirement during the Project implementation period.

**Budget**

The monitoring and evaluation (M&E) activities to be undertaken in the frame of the project can be divided into two categories: i) the M&E activities that are presented under component 4 of the project as specific activities, such as monitoring and verifying the GHG emissions received, project

mid term and final evaluation etc. and ii) the standard annual M&E activities conducted in the frame of the project such as the preparation annual APRs and PIRs.

The total estimated budget for M&E related activities, including the specific activities conducted under component 4 (excluding dissemination) and those, which are a part of the overall management of the project is approximately USD 240,000 with the following break down:

Staff costs:	USD 80,000
Project review and evaluation missions:	USD 80,000
GHG monitoring and verification equipment:	USD 40,000
Financial audits	USD 40,000
<b>TOTAL:</b>	<b>USD 240,000</b>

Project Objectives Outputs/Performance Indicators	M&E Activity	Responsibilities for M&E Activities	Timeframes
<b>Immediate Objective 1:</b> Overcoming the general institutional barriers to the promotion of energy efficiency <b>Indicator:</b> The regional and other public authorities taking an active role in promoting the energy efficiency investments			
<b>Output 1.1</b> Enhanced capacity of the regional authorities to promote energy efficiency <b>Success Indicator:</b> The regional and other public authorities actively promoting energy efficiency investments and measures <b>Intermediate Benchmarks:</b> (a) The institutional arrangements for strengthening the role of the regional authorities in promoting energy efficiency clarified and updated within 6 months from the project start up; Applicable PR material delivered and a workshop/ seminar organized for energy experts that can serve as energy advisors for the local county within 18 months from the project start up;	Project Midterm and Final Evaluation  Annual Project Reports (APR)  Project Implementation Reviews (PIR)	CO, UNDP/GEF HQ  PMU (Project Management Unit) / UNDP CO	In the end of the second year and at least three months before the end of the project, respectively  12 months after the beginning of the project, after that annually
<b>Immediate Objective 2:</b> Overcoming the barriers to improving the energy efficiency of the residential sector. <b>Indicator:</b> The demand for energy efficient equipment and projects show an increasing trend in the residential sector			
<b>Output 2.1</b> Increased public awareness on the available energy efficient technologies and measures and their benefits to the consumers. <b>Success Indicator:</b> Based on a survey to be undertaken as a part of the project's midterm evaluation, the awareness of the people on the available energy efficient technologies and measures and their benefits to the consumers has increased. <b>Intermediate Benchmarks:</b> (a) The current situation analysis updated and the implementation strategy for the activities under output 2.1 finalized within 6 months from the project start up; (b) The first PR material developed and published within 12 months from the project start up and updated annually; (c) The first campaign, including, as applicable, sharing of information leaflets; articles, programs and commercials in public media; etc. started within 12 months from the project	Project Midterm Evaluation  APRs/PIRs	CO, UNDP/GEF HQ  PMU / UNDP CO	In the end of the second year of the project  12 months after the beginning of the project, after that annually

start up and repeated as needed.			
<p><b>Output 2.2</b> A successfully conducted pilot marketing campaign to promote the purchase of the CFLs.</p> <p><b>Success Indicator:</b> At least 100,000 lamps sold during the pilot campaign</p> <p><b>Intermediate Benchmarks:</b></p> <p>(a) A tender for the lamp manufacturers to participate the campaign published within 3 months from the project start;</p> <p>(b) The first pilot campaign launched within 9 months from the project start up;</p>	<p>Project Midterm Evaluation</p> <p>APRs/PIRs</p>	<p>CO, UNDP/GEF HQ</p> <p>PMU / UNDP CO</p>	<p>In the end of the second year of the project</p> <p>12 months after the beginning of the project, after that annually</p>
<p><b>Output 2.3</b> Replication of similar campaigns for other regions and technologies.</p> <p><b>Success Indicator:</b> The activities replicated for other regions and, as applicable, technologies.</p> <p><b>Intermediate Benchmarks:</b></p> <p>(a) The analysis of the experiences and lessons learnt from the first pilot campaign finalised within 12 months from the project start up;</p> <p>(b) By building on the lessons learnt, the strategy and mechanisms for replicating the CFL campaign in other regions finalised within 15 months from the project start up;</p> <p>(c) As applicable, the CFL campaigns replicated across the country by the end of the project;</p> <p>(d) An analysis exploring and elaborating feasible mechanisms for promoting other energy efficient household appliances, such as refrigerators and freezers, finalised within 18 months from the project start-up;</p> <p>(e) As applicable, the implementation of promotional campaigns for other energy efficient household appliances launched within 30 months from the project start up.</p>	<p>Project Final Evaluation</p> <p>APRs/PIRs</p>	<p>CO, UNDP/GEF HQ</p> <p>PMU / UNDP CO</p>	<p>At least three months before the end of the project, respectively</p> <p>12 months after the beginning of the project, after that annually</p>





<p><b>Output 3.4</b> A Partial Guarantee Facility to leverage financing for the energy efficiency investments</p> <p><b>Success Indicator:</b></p> <p>(a) The partial guarantee facility established and in operation within 12 months from the project start up.</p> <p>(b) At least USD 7,500,000 worth of additional resources leveraged for energy efficiency investments by the end of the project.</p>	<p>APRs/PIRs</p> <p>Project Final Evaluation</p>	<p>PMU / UNDP CO</p> <p>CO, UNDP/GEF HQ</p>	<p>Annually</p> <p>At least three months before the end of the project, respectively.</p>
<p><b>Immediate Objective 4:</b> Facilitating the effective replication/utilisation of the project results and lessons learnt.</p> <p><b>Indicator:</b> The activities replicated at the national and, as applicable, regional level</p>			
<p><b>Output 4.1</b> A system for monitoring the GHG emission reductions of the proposed pilot/demonstration projects</p> <p><b>Success Indicator:</b> A system with trained personnel for monitoring the GHG emission reductions of the first pilot/demonstration projects in place within 24 months from the project start up</p> <p><b>Intermediate Benchmarks:</b></p> <p>(a) The GHG emission monitoring and verification protocol developed within 12 months from the project start up.</p> <p>(b) The operating personnel of the projects trained for compiling the information needed within 24 months from the project start up.</p> <p>(c) The required equipment for monitoring the first demo projects installed by the time of launching the projects</p>	<p>Project Midterm Evaluation</p> <p>APRs/PIRs</p>	<p>CO, UNDP/GEF HQ</p> <p>PMU / UNDP CO</p>	<p>In the end of the second year of the project</p> <p>12 months after the beginning of the project, after that annually</p>

<p><b>Output 4.2</b> Project results, experiences and lessons learnt documented and disseminated at the national and regional level.</p> <p><b>Success Indicator:</b></p> <p>(a) Final project report published and disseminated at the national and regional level;</p> <p>(b) Workshops and other public outreach activities organised at the national and regional level to discuss and disseminate the project results, conclusions and recommendations.</p> <p><b>Intermediate Benchmarks:</b></p> <p>(a) The monitoring reports for and the GHG emissions reduction of the first demo projects calculated and verified by the end of the project;</p> <p>(b) Midterm evaluation completed and the report made available by the end of the Year 2;</p> <p>(c) Final evaluation completed and made available at least three months before the anticipated closing date of the project;</p> <p>(d) Draft final project report made available in Croatian and English at least two months before the end of the project;</p> <p>(e) The final reports in Croatian and English finalised and distributed to key institutions both within Croatia and abroad by the end of the project.</p> <p>(f) Workshops and other public outreach activities organised at the national and regional level to discuss and disseminate the project results, conclusions and recommendations by the end of the project.</p>	<p>Project Terminal Report</p>	<p>PMU / UNDP CO</p>	<p>At least 1 month before the end of the project</p>
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