



PROJECT IDENTIFICATION FORM (PIF) ¹

PROJECT TYPE: Full-sized Project

TYPE OF TYPE OF TRUST FUND: GEF Trust Fund

PART I: PROJECT IDENTIFICATION

Project Title:	Catalyzing market transformation for industrial energy efficiency and accelerate investments in best available practices and technologies in the Former Yugoslav Republic of Macedonia		
Country(ies):	Macedonia, The Former Yugoslav Republic of	GEF Project ID:	4902
GEF Agency(ies):	UNIDO	GEF Agency Project ID:	120127
Other Executing Partner(s)	Ministry of Environment and Physical Planning, Ministry of Economy, Energy Agency of the Republic of Macedonia	Submission date	13 March 2012
		Re-submission date	14 September 2012
GEF Focal Area (s)	Climate Change	Project Duration (months)	42
Name of parent program (if applicable)	Not Applicable	Agency Fee (\$)	140,000

A. FOCAL AREA STRATEGY FRAMEWORK:

Focal Area Objectives	Expected FA Outcomes	Expected FA Outputs	Trust Fund	Indicative Grant Amount (\$)	Indicative Co-financing (\$)
CCM-2	Outcome 2.1: Appropriate policy, legal and regulatory frameworks adopted and enforced	Output 2.1: Energy efficiency policy and regulation in place Output 2.3: Energy savings achieved	GEFTF	245,000	650,000
CCM-2	Outcome 2.2: Sustainable financing and delivery mechanisms established and operational	Output 2.2: Investment mobilized Output 2.3: Energy savings achieved	GEFTF	1,050,000	4,750,000
Sub-total				1,295,000	5,400,000
Project Management Cost				105,000	220,000
Total Project Cost				1,400,000	5,620,000

¹ It is very important to consult the PIF preparation guidelines when completing this template.

B. PROJECT FRAMEWORK

Project Objective: To accelerate market transformation for industrial energy efficiency by strengthening policy, regulatory and institutional frameworks and supporting increased diffusion of and investment in best available industrial energy efficiency practices and technologies.

Project Components	Grant Type	Expected Outcomes	Expected Outputs	Indicative Grant Amount (\$)	Indicative Co-financing (\$)
1. Strengthening Macedonian policy, regulatory and institutional frameworks and capacity for market transformation for industrial energy efficiency and green industry.	TA	Enhanced promotion and support of sustainable industrial energy efficiency and green industry by strengthened policy and regulatory frameworks and market-based mechanisms	<ol style="list-style-type: none"> 1. National Energy Management System Standard compatible with ISO 50001 is adopted and promulgated. 2. Secondary legislation (i.e. by laws) for energy efficient and green industry is developed (and adopted), including introduction of energy efficiency performance indicators linked to ISO 50001 in the national protocol for Integrated Prevention and Pollution Control (IPPC) for industry 3. Framework (methodology and institutional set up) for Monitoring, Reporting and Verification of energy efficiency and GHG emissions performance of industrial enterprises is developed and tested. 4. Supporting programs for energy efficiency best-practice and technologies implementation in industry are developed and implemented (options include IEE Best Practices Dissemination Program and IEE Best Performance Award) 5. Financial incentives to promote and support energy efficiency best-practices and investments are designed and established (option include financial incentives for ISO 50001 certification, free or cost-shared technical assistance) 6. Certification program for Energy Auditors developed. 7. Strengthened technical capacity of the Macedonia institutions responsible for the development, implementation and monitoring of national and international energy and climate change mitigation policies and programs (Energy Agency, Ministry of Economy, Ministry of Environment, National Bureau of Statistics) 	231,000	610,000

2. Market development support for deployment and diffusion of best available practices and technologies for energy efficiency and environmental sustainability in industry	TA	Accelerated and increased adoption of energy and environment management systems leading to greater resource investments in energy efficiency measures and low carbon technologies, an increased energy productivity and competitiveness of the Macedonian industries	<ol style="list-style-type: none"> 1. Top management of at least 50 enterprises understands the economic and environmental benefits of energy efficiency and is made aware of key relevant commercial best-available practices and technologies. 2. A group of 50 local energy efficiency and environment professionals are equipped with the technical expertise and tools required to: <ol style="list-style-type: none"> a) develop and implement in industry Energy Management Systems (EnMS) in line with ISO 50001 b) carry out industrial energy audits c) train industry personnel in EnMS and energy system assessment and optimization d) offer EnMS, energy auditing and system optimization technical services to industry 3. Ten (10) enterprises from key Macedonian industrial sectors develop and implement Energy Management Systems (in line with ISO 50001) 4. Five (5) enterprises from key Macedonian industrial sectors develop and implement integrated Energy and Environment Management Systems in line with ISO 50001 and ISO 14001 5. Personnel of fifty (50) enterprises receive training on the implementation of energy management systems and energy system optimization measures. 6. At least ten (10) low cost energy efficiency projects are implemented by industrial enterprises as result of their participation in the Training program of the project. 	620,000	1,750,000
3. Scaling-up of investments in energy efficiency and low carbon technologies for industry	TA	Accelerated and increased adoption of energy efficient and low carbon process/sector specific technologies	1. Two-three (2-3) selected energy efficiency/low carbon lighthouse projects are implemented in key energy intensive industrial sectors	200,000	800,000
	Inv		2. Mechanism to enhance mobilization and disbursement of available commercial financing for energy efficiency and low-carbon technology investments is introduced	220,000	2,200,000
4. Monitoring and Evaluation	TA	Not applicable	<ol style="list-style-type: none"> 1. Monitoring and evaluation framework 2. Independent final project evaluation 	24,000	40,000
Sub-Total				1,295,000	5,400,000
Project Management Cost				105,000	220,000
Total Project Costs				1,400,000	5,620,000

C. INDICATIVE CO-FINANCING FOR THE PROJECT BY SOURCE AND BY NAME IF AVAILABLE, (\$)

Source of Co-financing	Name of Co-financier	Type of Co-financing	Amount (\$)
GEF Agency	UNIDO	Grant	60,000
GEF Agency	UNIDO	In-kind	450,000
National Government	Ministry of Environment	In-kind	50,000
National Government	Ministry of Economy	Cash	50,000
National Government	Ministry of Economy	In-kind	150,000
Other	Energy Agency	In-kind	50,000
Private Sector	Enterprises	Cash	1,250,000
Private Sector	Enterprises	In-kind	400,000
Private Sector	Financial institutions	Cash	1,900,000
Bilateral Aid Agency(ies)	USAID	Cash	850,000
Bilateral Aid Agency(ies)	Unknown at this stage	Unknown at this stage	300,000
Other	NCPC	In-kind	110,000
Total Co-financing			5,620,000

PART II: PROJECT JUSTIFICATION

A. DESCRIPTION OF THE CONSISTENCY OF THE PROJECT WITH:

A.1.1 The GEF focal area/LDC/SCCF strategies:

The project falls under and supports the GEF-5 Climate Change Mitigation (CCM) focal area. By addressing key existing information, capacity and policy barriers for sustainable industrial energy efficiency in Macedonia the project directly contributes to and is fully aligned with the CCM Strategic Objective 2 - Promote market transformation for energy efficiency in industry and the building sector. The project would make a tangible contribution to stimulate the creation of a Macedonian market for industrial energy efficiency (IEE) products and services. The project is consistent with UNIDO acknowledged comparative advantage for promoting energy efficiency in the industrial sector.

A.1.2. For projects funded from LDCF/SCCF: the LDCF/SCCF eligibility criteria and priorities: N/a

A.1.3. For projects funded from NPIF, relevant eligibility criteria and priorities of the Fund: N/a

A.2. National strategies and plans or reports and assessments under relevant conventions, if applicable, i.e. NAPAS, NAPs, NBSAPs, national communications, TNAs, NIPs, PRSPs, NPFE, etc.:

The project is highly consistent with the national priorities that are expressed in key Macedonian's strategies, policies and legislation on energy, climate change mitigation and economic development. The industrial sector is the largest energy consumer in Macedonia; in 2006 it accounted for 33.8% of total final energy use.

Promotion and implementation of energy efficiency in industry permeates all relevant national policies and strategies that address climate change mitigation such as the Energy Law (OGRM. no 16/2011), Strategy for Development of the Energy Sector until 2030 (OGRM 61/2010), Strategy for improvement of the Energy Efficiency in Republic of Macedonia until 2020 (September 2010), First National Action Plan for Energy Efficiency 2009-2016. In the Second National Communication on Climate Change (2008) of Macedonia to the UNFCCC, energy savings and energy efficiency were identified as the priority area of intervention to offset the increasing demand for energy deriving from the forecasted 3% average annual economic growth.

The project is well aligned with the Nationally Appropriate Mitigation Actions presented in the Second National Communication to the UNFCCC. GHG emission reduction interventions identified focused on the industrial energy transformation sector and heating systems, including fuel switching, improvement of the energy efficiency and energy saving, increasing of the contribution of renewable energy sources in the country's energy balance and awareness raising of the final consumers.

No technology needs assessment for the manufacturing sector has been carried out so far. In 2005 a National Capacity Need Assessment for Global Environmental Management was carried out together with an Evaluation of Technology Needs for GHG Abatement in the Energy Sector. Both exercises highlighted a significant gap in terms of performance, capabilities and modern technologies which led to indicate technology transfer has a key area for work and international assistance.

B. PROJECT OVERVIEW:

B.1. Describe the baseline project and the problem that it seeks to address:

Baseline project

The proposed GEF project aims at increasing and accelerating adoption of and investment in best available industrial energy efficiency practices and technologies while strengthening policy, regulatory and institutional frameworks for industrial energy efficiency.

The proposed GEF intervention would build on and lever the following baseline project activities:

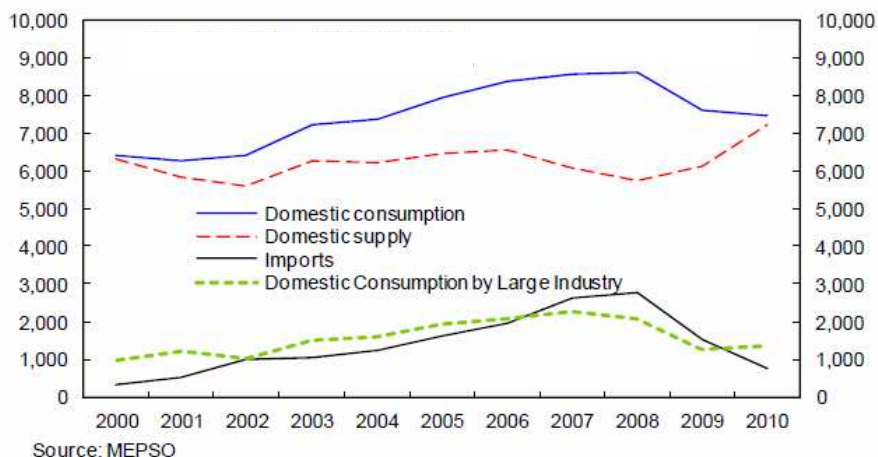
1. Macedonia's ongoing and planned policy and legislation development and implementation work aimed at complying with commitments made within the Energy Community Agreement and implementation of the relevant First National Energy Efficiency Action Plan
2. Existing programme of the Ministry of Economy to support competitiveness through subsidies for compliance with and certification to ISO management systems
3. Existing national protocol for Integrated Prevention and Pollution Control for industry
4. The USAID programme to support increased competitiveness of Macedonian SMEs through improved energy efficiency that will be launched in the 3rd/4th quarter of 2012
5. The industrial energy efficiency services offer, projects pipeline and ongoing/planned activities of the Macedonian National Cleaner Production Centre
6. Ongoing, planned and envisaged innovation and energy efficiency improvement investment programmes of selected large energy intensive enterprises
7. Existing financing mechanisms available to Macedonian enterprises for investments in industrial energy efficiency

Background

Macedonia is a small economy with a gross domestic product (GDP) of about \$9.17 billion (2010 est.), representing about 0.01% of the total world output. It is an open economy integrated into the international trade, with a total trade-to-GDP ratio of 81.6% at the end of 2009. Agriculture and industry have been the two most important sectors of the economy in the past, but the services sector has gained the lead in the last few years. Economic problems persist, even as Macedonia undertakes structural reforms to finish the transition to a market-oriented economy. Modernization of the largely obsolete infrastructure is happening slowly, and foreign investment has not kept pace with neighboring economies. A relatively low standard of living, high unemployment rate, and modest economic growth rate are the

central economic problems.

Figure 1: Electricity demand and supply in Macedonia, 2000-2010 (GWh)



Baseline analysis

Energy supply and consumption patterns in the Former Yugoslav Republic of Macedonia:

Domestic electricity supply is mainly from thermal and hydro generation. Lignite fired thermal power plants account for 800 MW of the country electricity generating power (equivalent to about 50%); heavy fuel oil (back-up capacity) amount to 210 MW and hydropower generating capacity amount to 528 MW of installed power and about 20% of country total generated electricity. A new natural gas fired thermal plant is expected to go on line by the end of 2012. Other renewable energy sources such as solar, wind and geothermal account for less the 1% of country generating capacity. Transmission and distribution losses are estimated at about 15%, including technical and commercial losses.

Since the year 2000, Macedonia electricity generation capacity is insufficient to match peak power demand (about 1,500 MW) while maintaining a safe spare capacity margin. Consequently Macedonia started to import electricity. Total imports averaged at about 20% of total electricity demand (1,468 GWh) between 2000 and 2009, and peaked at 32% (2,757 GWh) in 2008, with an average cost of €95 million during the period 2003–09, and a peak of €235 million (equal to 3.6 percent of GDP) in 2008. It is important to note that imported electricity is almost exclusively procured and consumed by Macedonian large industrial users (see Fig. 1 on the following page).

Energy consumption patterns in the Former Yugoslav Republic of Macedonia and its industry

In 2006 the breakdown of final energy consumption by sectors was: industry 33.8%, households 29.2%, transport 20.5%, commercial and services 13.1%, agriculture and forestry 1.8% and others 1.7%.

Final energy consumption breakdown by source was

	2006	2011
Electricity	2,221 GWh	2,390 GWh
Coal	1,279 GWh	1,105 GWh
Oil and oil derivatives	2,128 GWh	1,971 GWh
Natural gas	393 GWh	454 GWh
Biomass	38 GWh	34 GWh
Total	6,717 GWh	6,627 GWh

Energy consumption in the industry sector is dominated by the steel and ferro-alloys production sub-sector. Other sub-sectors with comparable levels of energy consumption are non-metallic minerals and food sectors, followed by textile, mining and chemicals.

Industry final energy consumption breakdown by sub-sector (2007)

▪ Iron and Steel	59%
▪ Non-metallic minerals	20%
▪ Food and Tobacco	8%
▪ Textile and Leather	3%
▪ Construction	2%
▪ Mining	2%
▪ Chemicals and Petrochemicals	2%
▪ Others	4%

In 2006 industry final energy consumption was 577 ktoe with the following breakdown: 33% electricity, 32% oil products, coal 19%, thermal energy 10%, natural gas about 6% and wood less than 1%.

With regard to electricity demand, the 10 largest industrial customers (in metals, chemical and cement production) accounted for 25 percent of total electricity consumption in 2005–08; the residential sector consumed about 47%.

Electricity demand grows continuously during the period 2002-2007 at an average annual rate of 4.46 percent.

During the same period, industry reported the biggest growth in final energy consumption, with an annual growth rate of 7.15%, followed by the commercial and the service sector with almost 4%, residential with 2.64%.

The metals and cement industry sub-sectors are also the most intensive final consumers of coal and natural gas.

The energy performance of Macedonian economy and industry remain significantly below those of OECD Europe as well as neighbouring countries. According with the Macedonia Statistical Office, Macedonia's economy in 2009 was 3.48 times more energy intensive than the EU 27 average (amounting to 165.20 kgoe/1,000 Euro of GDP, base year 2000). Key reasons for the high energy intensity can be traced to:

- Economy and industry structure, with predominant energy intensive sectors
- Low efficiency power generation, supply and consumption
- The prevalence of using electric energy for residential heating during winter

As for industry energy performance clear and reliable figures are not available (reported estimates shows energy intensity more than 60% higher than EU 27 average), due to poor quality of industrial energy consumption data and lack of appropriate analytic skills which prevent proper assessment of energy performance in industry. Nevertheless the evidence gathered from past programs targeting individual enterprises shows that efficiency levels differ significantly between sectors and between companies from the same sub-sector, but that technical and economic potential for energy savings and efficiency gains is remarkable. A large share of industrial energy use stems from heavy fuel oil, gas and coal used to operate boilers that are typically either highly inefficient and/or under-utilized. Likewise electricity with electric motors, which account for over 80% of the industrial sector's total electricity use.

According with the estimates of the Strategy for Improvement of the Energy Efficiency in the Republic of Macedonia until 2020, industry is the sector with the largest potential for energy savings: 91.1 ktoe cumulated over the period 2010-2020, equal to 38% of the total.

Policy framework for Industrial Energy Efficiency (IEE)

The Strategy for Energy Development in the Republic of Macedonia until 2030 and the Strategy for Improvement of the Energy Efficiency in the Republic of Macedonia until 2020 are the two key documents that provide the overarching guidance for policies and programs to be developed and implemented in the fields of energy and energy efficiency. The Strategy for Improvement of the Energy Efficiency indicates industry as the sector with the highest potential for energy savings.

As part of the Energy Community Treaty's requirements, the Government of Macedonia developed its first National Energy Efficiency Action Plan (NEEAP). The NEEAP lays out programs and plans for the implementation of proposed strategic measures towards achievement of a national energy saving targets for the period 2010-2018. The implementation of best available technologies (BAT) and practices (BAP) such as improved process technologies, energy audits, motor-driven systems optimization and energy management are indicated as key interventions for the implementation of industrial energy efficiency.

There are other national strategies and policies that directly or indirectly call for and/or define roadmaps and goals relevant for industrial energy efficiency.

The Industry Policy of the Republic of Macedonia 2009-2020 is an overarching document that defines priorities, aims and instruments for creating a competitive economy. Its basic purpose is enhancing the competitiveness of the domestic industry through support to enterprises for acquiring state-of-the-art knowledge and technologies, innovations and research leading to growth and development, creation of a stimulating business and investment climate. Energy efficiency is not explicitly defined as a tool to improve the competitiveness. The Ministry of Economy has prepared also a limited number of industrial sector specific strategies, i.e. for textile and steel industry and tourism. Each strategy aims at an increased productivity and process efficiency but again, energy efficiency is not recognized as a prerequisite to achieve these goals.

In the National Strategy for Sustainable Development industrial energy efficiency (IEE) is seen as an important economic development pillar. The need to complete the legal framework, undertake trainings on energy audit and management, establish energy performance indicators and benchmarking as well as to improve the access to finance for IEE measures is clearly envisaged. Similarly, the National Strategy for Economic Development (1997) highlights the need for national policy to be concerned with energy efficiency as a key factor in achieving national development goals.

Conclusion - Most national policy documents enshrine the enhancement and acceleration of the adoption of best-available IEE technologies and practices in a sustainable manner, through capacity building and investment support programs and initiatives aimed to ultimately decrease dependence on energy imports, reducing energy intensity, non productive energy consumption and the impact on the climate.

Legal framework for IEE

The Energy Law (May 2006), with its subsequent amendments (Official Gazette of the Republic of Macedonia No. 106/08, 16/2011 and 136/11) is the main legal document governing energy supply and consumption. The Law governs the objectives of the energy policy and it sets out which activities should be carried out to achieve such objective. For instance it governs the construction of new energy facilities, the functioning of the Energy Regulatory Commission (ERC), the introduction of a liberalized markets for electricity, natural gas, oil and oil derivatives, thermal and geothermal energy. It provides also the overarching legal framework for the promotion of renewable energy resources and energy efficiency.

But the development and enactment of secondary legislation is lagging behind. Regulations on energy audits and certification of auditors have to be developed. The framework for monitoring, reporting and verifying energy consumption and savings has to be properly developed. No bylaw or regulation for energy efficiency in industry has been neither designed nor planned.

The Integrated Prevention and Pollution Control (IPPC) protocol, currently mandatory for certain industrial enterprises,

while it is seen as instrumental to the deployment of BAT, BAP and the promotion of fuel-switching, it does not include any specific requirement regarding energy efficiency.

Despite the remarkable efforts of the young Energy Agency and the relevant ministries, a significant amount of work remains to be done to establish the policy and normative environment needed to ensure the achievements of the energy efficiency, renewable energy and energy security goals set by the Macedonian Governments.

Institutional framework for IEE

The Department of Energy, within the Ministry of Economy, oversees the entire energy sector, both supply and demand side, and it is in charge of all energy efficiency-related issues, especially from a policy perspective. The Ministry of Economy cooperates with the Macedonian Academy of Sciences and Arts, as well as with individual experts from the University of Cyril and Methodius. During the last years a growing number of NGOs have been increasingly involved in the policy dialogue about the energy and environmental related problems of Macedonia.

The Energy Agency of the Republic of Macedonia has the mission to support the realization of the Government energy policy through the preparation of strategies, the development and implementation of plans, regulation and programs with special emphasis of energy efficiency (EE) and usage of renewable energy sources (RES).

The Energy Agency has the mandate to lead and coordinate initiatives to promote EE and RES, prepare proposals for law, regulations and technical standards; prepare EE and RES studies, monitor and report on Macedonia NEEAP and energy policy implementation.

The Ministry of Environment and Physical Planning is responsible for ensuring that Macedonia meets the requirements and fulfils the duties set forth by the international environmental agreements that the country has subscribed, including the Kyoto Protocol. Depending on the specific nature or area of the intervention the Ministry of Environment’s role can vary between leading institution, or coordinating, or partner ministry.

The Energy Regulatory Commission (ERC) of the Republic of Macedonia is the independent regulatory body responsible for energy tariffs setting and regulation, as well as for the implementation of additional incentives that encourage investment in supply-side energy efficiency and renewable energy. ERC is currently working to develop new and update methodologies and rulebooks for calculating tariffs for all energy sources.

Energy tariffs

The price of electricity is subsidized by the government for all consumers with the exception of few very large industrial users that have to procure and import their electricity from the international market.

The present (December 2011) electricity tariff structure differentiates energy and power costs by voltage levels (110 kV, 35 kV, 10 kV and 0.4 kV); by consumer types (industrial, commercial, household and municipality/street lighting); by time of day; and by demand characteristics (Active Power, Reactive Power, and maximum Demand Charges). In the following table tariffs for medium voltage consumers are presented.

Table 1: Tariffs for medium voltage consumers

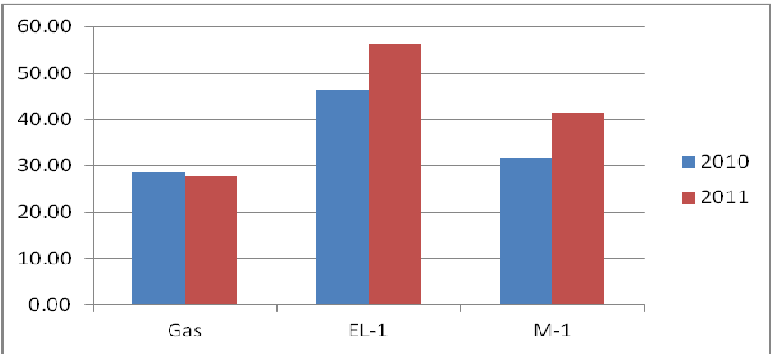
Item	Unit	Time	Tariff			
			35 kV		20 kV or 10 kV or 6kV	
			MKD	USD	MKD	USD
Power	kW	Monthly	844.35	17.71	651.21	13.66
Energy	kWh	HT	2.48	0.052	2.74	0.057
		LT	1.29	0.027	1.35	0.028
	kVARh	HT	0.64	0.013	0.6	0.012
		LT	0.31	0.006	0.37	0.008

Source: EVN

HT = High-tariff; LT = Low-tariff

The prices of oil, natural gas and heavy fuel-oil are strongly correlated with the international market prices. Prices can be changed every 2 weeks, depending on the price variability in the world markets. Unlike electricity, the price of oil, natural gas and heavy fuel-oil does not differentiate between industry, residential, etc. The graph below shows a comparison between the 2010 and 2011 prices of natural gas (nm³), extra light oil and heavy oil (liters) in Macedonian Denar (MKD).

Figure 2: Price of natural gas (Gas), extra light (EL-1) and heavy fuel (M-1) oil



Financing for IEE

The banking sector of the Republic of Macedonia comprises of 18 banks and 11 saving houses. Banks maintain satisfactory liquidity, with a continuous upward liquidity trend, in particular of the high-liquid assets.

The overall capabilities of the local banking and financing sector for energy efficiency projects lending are still limited, at best. Currently only few banks, supported either by bilateral technical cooperation projects or international financial institutions, offer dedicated financial products for energy efficiency.

On the financing supply side the main challenge is still represented by the fact that local banks have little or no experience in technical evaluation of energy efficiency projects, and IEE in particular, which clearly hinders decision to provide financing. Local banks are unfamiliar with how to assess the risks of financing EE projects as well as with how to analyze and value the “cash flow” that a project would generate.

On the financing demand side, i.e. enterprises, there is a need to better appraise projects and communicate the financial and economic benefits of external credit opportunities, since the majority of enterprises seems prefer using their own resources for EE project implementation, with inevitable delays and postponements, even when it would not be the most financially convenient option.

The lack of funds for preparation of IEE projects is a critical financing barrier to the implementation of IEE projects. There are a number of banks that support IEE projects, however, their funding instruments are not sufficiently promoted / disseminated among the potential clients, including the industries.

Barriers for Industrial Energy Efficiency

Over the last few years industrial energy performance has made some progress, especially in large enterprises, as result of some increased policy-makers attention to energy efficiency and the support of a number on internationally funded projects.

However, the current policy and legal framework for industrial energy efficiency is still largely incomplete and inadequate, with laws that may even contradict and hamper energy efficiency improvement.

Given the cross cutting character of energy efficiency many are the Government and public institutions that have and need to be involved and work on EE: Ministry of Economy, Ministry of Environment and Physical Planning, Ministry of Finance, Ministry of Transport and Communications and the Energy Agency. Efforts have been and are being made

to improve cooperation and coordination, but more remains to be done.

Government technical capacity for IEE policy-making and implementation remains seriously constrained by a lack of financial and human resources, and expertise to develop and implement substantive and effective policies and programs to promote and support energy efficiency in industry. In this regard it has to be mentioned the lack of a well structured and institutionalized monitoring, reporting and verification framework for energy performance in industry as well as in other economic sectors (2006 and 2007 were the most recent years for which official data are available and have been used for key national strategic documents).

While most enterprises now pay greater attention to energy costs, they have limited awareness and understanding of the financial and qualitative benefits that energy efficiency, energy and environment management can deliver. On the one hand this is consequence of lack of information about and understanding of what is technically feasible and what is commercially available with regard to IEE. There are no structured IEE promotion, dissemination and education programs. On the other hand, inadequate energy data monitoring and analysis practices and insufficient technical capacity are the causes of poor energy performance assessments and subsequent impossibility to size the potential energy and costs savings. Technical expertise of industrial staff is concentrated on key equipment and attention is focused exclusively on reliability and continuity of operations, with very little or no understanding on the impact of different operations on energy performance.

Although some Macedonian industries are ISO9001 and ISO14001 certified, the transition from old management practices to those required by modern market economy is still lagging behind. Rarely enterprises have some elements of an energy management system in place, such as a policy, energy reduction targets and an appointed person responsible for energy. In the vast majority of Macedonian enterprises there is a lack of structured approach to managing energy.

The major technical and economic potential for the implementation of energy efficiency measures in the industrial sector remains mainly untapped. The market for energy efficiency services and technologies is underdeveloped. This is consequence of policy and legal frameworks that have still to create the right enabling environment to boost the penetration of energy efficiency technologies in both large enterprises and SMEs and for the local energy services industry to grow. At the same time, this is also the result of still insufficient technical expertise as well as a services offer that does not fully meet needs and opportunities.

Financing continues to be a major challenge with regard to the local banks capabilities to properly appraise energy efficiency projects/investments and reducing transaction costs. As for enterprises there is a need for better understanding of the financial and economic benefits of external credit opportunities vis-à-vis the use of own resources. The lack of funds for project preparation remains a critical barrier for implementation.

Past, ongoing and planned technical assistance programs for IEE

Past and ongoing technical assistance programs on energy efficiency have only partially targeted industry. International organizations and financial institutions such as UNECE, WB and EBRD have all supported energy efficiency projects through direct leading programs or on-lending programs through local banks or provision of technical assistance. USAID is the bilateral donor that has provided the more consistent technical assistance support at the policy and strategy development level, besides supporting energy efficiency investments, especially in SMEs.

A credit and guarantee scheme for building sustainable energy efficiency and renewable energy sources is established through the state owned Macedonian Bank for Development Promotion (MBDP) and five local commercial banks: Komercijalna Banka, UNI Banka, NLB Tutunska Banka, IK Banka, and Ohridska Banka. Energy efficiency projects are financed up to \$500,000 per project with the following financial structure: 60% MBDP, 10% owner's equity, and 30% commercial bank participation, with a repayment period up to 4 years.

In March 2009 EBRD has launched two investment facilities that provide debt financing for renewable energy and industrial energy efficiency projects to small and medium-sized enterprises in the Western Balkans including Macedonia, as follows:

- Western Balkans Sustainable Energy Direct Financing Facility. €50 million to provide direct individual loans between €1 million and €6 million to industrial energy efficiency and renewable energy projects. The facility is complemented with grant funding for Technical Assistance for project identification, preparation and implementation verification. Incentive payments of up to 15% of the loan principal shall be provided to eligible projects upon successful physical completion of the construction and beginning of operation of project facilities. The repayment period can be up to 12 years including a grace period of 2 to 3 years.
- Western Balkans Sustainable Energy Credit Line Facility. €50 million to provide loans to participating banks for on-lending to sub-borrowers for energy efficiency and renewable energy investments up to €2 million per project in the industrial sector or in buildings used for commercial services. . The facility is complemented with grant funding for marketing and awareness-raising, establish technical eligibility criteria, prepare/appraise projects, implementation verification, etc. Incentives payment up to 20% of the loan principal shall be provided to eligible projects. EBRD local representatives expected Macedonia to participate in both facilities with 1 to 2 projects every year. The interest rates are market based. Collateral will be required and will depend on the type of the financing provided.

USAID has introduced two Development Credit Authority (DCA) facilities to support small and medium sized enterprises (SME) and energy efficiency projects in Municipalities and Residential sector. The SME facility is \$9 million split between two financial institutions – UNI bank (\$5 million) and NLB Leasing (\$4 million). The energy efficiency facility is \$10 million split equally between the same two financial institutions. The maximum loan amount for Municipalities and Residential Sector is set at \$400,000 while for SMEs is extended to \$500,000.

The idea behind the USAID DCA is that through this guarantee that covers 50% of the banks' risk, banks would engage in more non-traditional lending activities. The SMEs DCA had a promising operation start with 15 companies accessing the facility for loans ranging from \$6,500 to \$200,000. However, based on a more recent assessment, the Guarantee facility has not worked as and generated the results expected. One potential reason for such below-expectation performance has been identified in the lack of a technical assistance component for EE project preparation.

Established in 2007 by UNIDO in collaboration with the Ministry of Environment and Physical Planning, the National Cleaner Production Centre (NCPC) is based in the Faculty of Mechanical Engineering of the Ss. Cyril and Methodius University of Skopje. Since then the NCPC has successfully established itself as national focal point for the provision of resource efficiency and cleaner production (RECP) services to industry and SMEs in particular.

Since the end of 2010 the NCPC has been focusing its activities on the food processing agro-industry sector providing technical assistance and training on the development and implementation of low carbon production. Activities performed and to be performed include development of methodology and approaches, training of national service providers, execution of RECP assessments, identification of low carbon production opportunities, detailed techno-economic analysis of most promising ones, promotion of environmentally sound technologies (EST) and awareness raising. The NCPC closely collaborates with the Macedonian Chambers of Commerce and Industry.

The Republic of Macedonia is a contracting party of the Energy Community Treaty. As such Macedonia has committed itself to implement the "Acquis communautaire", develop an adequate regulatory framework and to liberalize the energy markets in line with the Acquis under the Treaty. The latter includes key EU legal acts in the area of electricity, gas, environment and renewable energy. The Treaty envisages that the main principles of EU competition policy are also applicable. Macedonia took up also the commitment to implement a set of security of supply and energy efficiency related legislation. However, while the Energy Community Treaty sets out clear requirements and timelines with respect to legal and regulatory steps as well as the implementation of Action Plans, there are no resources attached to the Treaty to support the work and compliance.

With regard to planned programs targeted to IEE, USAID is launching in the 3rd -4th quarter of 2012 a SMEs

Competitiveness Enhancing Program with a substantial component on energy efficiency. The Program, which will focus on SMEs, will combine technical assistance at policy and institutional level with capacity building and EE and RE investments support.

Trajectory of the baseline scenario

The Macedonia *Law on Energy* has only one line referring to energy efficiency in industry. According with the “Strategy for Improvement of the Energy Efficiency in the Republic of Macedonia until 2020”, hereinafter simply referred as EE Strategy, industry is the economic sector that is expected to generate the biggest share of energy saving over the period 2010-2020 at the lowest investment cost (Table 2)

Table 2: Cumulative energy savings and investments by economic sector

Economic sector	Cumulative energy savings From 2010 to 2020	Cumulative investments From 2010 to 2020
Industry	91.09 ktoe	73.90 €M
Residential	57.14 ktoe	279.56 €M
Commercial and Public Building	28.60 ktoe	114.10 € M
Industry	91.09 ktoe	73.90 €M
Transport	60.48 ktoe	54.50 €M

However, looking more closely to numbers and assumptions behind, one would find that investments for industry are expected to come entirely from the private sector with no allocation of public funding (unlikely all other economic sectors) and no supporting program specifically targeted to industry. By-laws, cost-reflective energy prices and liberalized energy markets (as of 2015) are expected to drive investments and energy savings.

However, the evidence from OECD countries shows that while regulation and energy price are key drivers for substantial energy savings at low cost for public budgets, regulation and energy price alone are not sufficient to capture the full economic potential for energy efficiency improvements and savings.

According with the *Law on Energy* all secondary legislation for the energy sector and energy efficiency should have been drafted by February 2012. As of January 2012 the development of most bylaws for energy efficiency had still to be initiated.

According with the strategic timelines of the EE Strategy, the period 2010-2012 should have also served to fill gaps in the institutional capacity and frameworks for energy efficiency. The establishment of Energy Efficiency Units within the Ministry of Economy and the Energy Agency was envisaged together with the setting up of a monitoring and verification process/ framework to track progress and continually improve effectiveness of policies, regulation and programs. As of January 2012 none of the Units has been established and no significant work has been done for monitoring and verifying energy consumption and performance in the various economic sectors, and in particular in industry.

It has to be mentioned that the EE Strategy explicitly refers to the need for financial support from external donors and international financial institutions to achieve the set goals, to a level of about 20% of the total investments.

In the absence of the proposed GEF-UNIDO project Macedonia will continue to and increasingly lag behind in reaping the environmental and economic benefits offered by the energy efficiency improvement potential of its industrial sector. That will be the result of a persistent, in the short term, lack of adequate institutional capacity for industrial energy efficiency, lack of tailored regulation and suitable market support and incentives to ensure sustainable

progression of industrial energy performance, as well as insufficient awareness, knowledge, capacity and funding for energy efficiency and savings projects.

In the short-term little changes are likely to happen in the market with respect to the provision of energy efficiency and energy management advisory services. It is very unlikely that energy service companies (ESCOs) will appear in the short and even medium term since in the present *Law on Energy* their role is not defined nor there is any incentive for their entrance in the market. In the case ESCOs should somehow start their engagement in Macedonia in the near future, they will almost certainly concentrate their activities in the commercial building sector initially and only at a later stage engage with industry. The horizon for their gradual involvement in the IEE market can not be foreseen. The GEF-UNIDO project would and shall contribute to catalyze these processes.

It seems very likely that the majority of Macedonian enterprises will continue to face constraints with respect to access to finance and that they may continue to mainly rely on their own resources to finance new investments.

Ongoing internationally supported projects will continue to provide useful and important support but given the size of the challenge more resources are and will be needed to ensure impact and sustainability. The USAID program is envisaged to make a significant positive contribution towards promotion and support of energy management systems and increased energy efficiency investments in Macedonia SMEs, but still it will reach a limited part of the SMEs population.

Considering the above, the baseline scenario will not be able to mitigate significantly the legal and institutional, knowledge and awareness, market and investment related barriers that are hampering increased energy efficiency in industry and the creation of a modern service market for IEE.

Energy efficiency projects and investments will increase compared to the past thanks to the USAID project, but they will remain localized to a relatively small number of companies. But overall meaningful gaps will remain in the overall normative and market infrastructure for industrial energy efficiency, delaying to tomorrow what could and should be achieved today. The harvest of the major economic energy efficiency improvement potential in Macedonia industry would be further delayed and prolonged with consequent GHG emissions that could and should be otherwise spared to the Global Environment.

The GEF-UNIDO intervention would have a significant incremental and multiplying effect on the impact of the current and expected baseline activities. Synergies would be particularly substantial with the USAID SMEs Competitiveness Enhancing Program where the contribution of UNIDO knowledge assets and expertise with respect to EnMS/ISO 50001/EE programs would free tangible cash resources for reaching out and supporting a larger number of companies.

B. 2. Incremental / Additional cost reasoning: describe the incremental (GEF Trust Fund) or additional (LDCF/SCCF) activities requested for GEF/LDCF/SCCF financing and the associated global environmental benefits (GEF Trust Fund) of associated adaptation benefits (LDCF/SCCF) to be delivered by the project:

Project Objective

The proposed project will accelerate the transformation of the Macedonian market for industrial energy efficiency by strengthening policy, regulatory and institutional frameworks for IEE and support increased diffusion of and investment in best available industrial energy efficiency practices and technologies.

Project Approach

The project will use a combination of technical assistance, capacity building and investment support to contribute addressing many of the policy, legal, institutional, financing and knowledge barriers that are hampering the transformation and growth of a national market for industrial energy efficiency services and resource investments. Project activities will be articulated in three main components: 1) Strengthening of policy, legal and institutional frameworks; 2) IEE market development support through knowledge dissemination, capacity building for and deployment of best-available practices and technologies; 3) mechanisms/support for increased investments in IEE.

Incremental Project Activities

Component 1. Strengthening Macedonian policy, regulatory and institutional frameworks for IEE and green industry

This component is designed to ensure that supportive policies, secondary legislation and programs specifically targeted to IEE are put in place. It is also meant to ensure that decision-makers build the knowledge and infrastructure needed to promote and support industrial energy efficiency in a sustainable and increasingly more effective way.

In this component, GEF funds will be used to provide specialized IEE expertise, mainly international, in support of the design and development of specific policies, by-laws and IEE market-stimulating programs. Co-financing will partially contribute to the design and development phase and will provide resource for the enacting and making operation policies and programs developed. Specific activities under the following outputs will be finalized during the project preparation period.

Key proposed outputs and activities

Output 1.1. National Energy Management System Standard compatible with ISO 50001 is adopted and promulgated. Activities under this output are likely to include facilitating and supporting national established processes for adoption and promulgation of ISO and other international/European standards as national standards.

Output 1.2. Secondary legislation (i.e. bylaws) for energy efficient and green industry is developed and adopted, including introduction of energy efficiency performance indicators linked to ISO 50001 in the national protocol for Integrated Prevention and Pollution Control (IPPC) for industry

Activities under this output are likely to include convening one or more multi-stakeholder working group and provide technical and legal expertise/inputs in the design of secondary legislation specifically targeted to the manufacturing sector for energy consumption data and performance reporting as well as energy efficiency “promotion and support”.

Output 1.3. Framework (methodology and institutional set up) for Monitoring, Reporting and Verification of energy efficiency and GHG emissions performance of industrial enterprises is developed and tested.

Activities under this output will include convening stakeholders and expert working groups, provision of technical expertise in the design of an appropriate methodology and effective institutional set up. The project would also provide national and international experts support in testing the methodology.

Output 1.4. Supporting programs for energy efficiency best-practice and technologies implementation in industry are developed and implemented (options include IEE Best Practices Dissemination Program and IEE Best Performance Award)

Based on the analysis and stakeholder consultations carried out during the preparation of the PIF a number of potential relevant programs and incentives have been identified. Which ones will be supported and implemented within the full-fledged project will be defined during the PPG phase. However, activities under this output are likely to include provision of models and implementation guidance, facilitating stakeholder consultations, providing technical expertise for designing schemes and processes.

Output 1.5. Financial incentives to promote and support energy efficiency best-practices and investments are designed and established (option include financial incentives for ISO 50001 certification, free or cost-shared technical assistance).

Possible incentives have been identified during the preparation of the PIF and consultations with stakeholders; these includes financial incentives for ISO 50001 certification and free/cost-shared technical assistance for EE investments preparation. However, significant further work and consultations will be needed during the PPG phase to define which incentives will be supported and implemented within the full-fledged project. Activities under this output are envisaged to focus on provision of technical expertise for designing the incentive schemes and facilitating stakeholder consultations,

Output 1.6. Certification program for Energy Auditors is developed

Activities under this output will involve provision of international technical expertise in the design of the certification program with respect to requirements, procedures, curriculum, training material, qualification exams, etc. and convening national expert working groups for validation and endorsement.

Output 1.7. Strengthened technical capacity of the Macedonia institutions responsible for the development, implementation and monitoring of national and international energy and climate change mitigation policies and programs (Energy Agency, Ministry of Economy, Ministry of Environment, National Bureau of Statistics)

This output will be the results of the learning-by-doing and activities carried out by the various institutional partners of the project under the previous outputs. Additional activities may include few thematic training tailored to specific relevant institutions.

Component 2: Market development support for deployment and diffusion of best available practices and technologies for energy efficiency and environmental sustainability in industry:

This component is designed to introduce and support deployment of energy management systems, ISO 50001 and best-available practices for industrial energy systems efficiency improvement in Macedonian enterprises and IEE market. The goal will be pursued by working both on the demand and supply side for energy efficiency services, through knowledge dissemination between industry decision-makers, skills and expertise upgrade of national EE service providers, training enterprises through hands-on experience and coaching in implementing energy management systems and EE projects. This component will make use of a “Train-the-Trainers” approach.

In this component, GEF funds will be used to provide specialized energy management system, ISO 50001 and energy system optimization expertise, mainly international, in support of the delivery of the capacity building program for local EE service providers and enterprises as well as of the pilot implementation of EnMS/ISO50001 in selected large energy intensive enterprises. Co-financing will partially contribute to the delivery of the capacity building programs and it will provide the resources for the implementation of EnMS/ISO 50001 as well as of low-cost energy efficiency improvement projects identified as result of both EnMS implementation and the capacity building program. Specific activities under the following outputs will be finalized during the project preparation period.

Key proposed outputs and activities

Output 2.1: Top management of at least 50 enterprises understands the economic and environmental benefits of energy efficiency and is made aware of key relevant commercial best-available practices and technologies.

Activities under this output are likely to include facilitating and supporting the delivery of awareness raising events tailored to industry top management.

Output 2.2. A group of 50 local energy efficiency and environment professionals are equipped with the technical expertise and tools required to:

- a) develop and implement in industry Energy Management Systems (EnMS) in line with ISO 50001
- b) carry out industrial energy audits
- c) train industry personnel in EnMS and energy system assessment and optimization
- d) offer EnMS, energy auditing and system optimization technical services to industry

Activities under this output will include coordinating the delivery of the overall capacity building program and providing the international expertise in EnMS and IEE to train local expert trainees and coach them in their work with partner enterprises. Some limited technical assistance support for the implementation of low-cost EE projects is also envisaged.

Output 2.3. Ten (10) enterprises from key Macedonian industrial sectors develop and implement Energy Management

Systems (in line with ISO 50001).

Output 2.4. Five (5) enterprises from key Macedonian industrial sectors develop and implement integrated Energy and Environment Management Systems in line with ISO 50001 and ISO 14001

Based on initial discussions and assessment, prospective partner enterprises will most likely belong to the following sectors: iron and steel, non-metallic minerals, petrochemicals and mining.

Activities that will contribute to the achievement of Outputs 2.3 and 2.4 will be, to a great extent, integral part of the capacity building activities carried out under Output 2.2. Additional activities are likely to include the provision of international expertise to work with national experts in finalize ISO 50001 implementation either as stand-alone management system or as management system integrated with ISO 14001.

Output 2.5. Personnel of fifty (50) enterprises receive training on the implementation of energy management systems and energy system optimization measures.

Activities under this output will include provision of support and guidance in convening trainings as well as international experts for delivery of the initial sessions.

Output 2.6. At least ten (10) low cost energy efficiency projects are implemented by industrial enterprises as result of their participation in the Training program of the project.

As results of enterprises' participation in the project capacity building program and implementation of EnMS in line with ISO50001, a pipeline of energy efficiency improvements measures and investments will be identified. Activities to be performed under this output will focus on advancing to the implementation stage at least 10 low-cost energy efficiency projects with significant savings potential.

It shall be highlighted that through implementation of EnMS and ISO50001 energy efficiency is integrated in companies' daily procurement practices as well as in more strategic and/or capital intensive investment decisions. Progressive wider dissemination of EnMS and ISO 50001, supported through regulation, incentives and/or other programs, will increasingly and inherently shift industry procurement and investment patterns towards energy efficiency services and technologies.

Component 3: Scaling-up of investments in energy efficiency technologies for industry

This component aims at accelerating the pace of investments in IEE projects and technologies. During the PPG phase the design of the component will be finalized and activities detailed accordingly. In the light of the findings and insight gather through the analysis and stakeholder consultations carried out during the PIF preparation, two approaches and corresponding possible outputs will be further appraised during the PPG phase without excluding the possibility of hybrid approach. Indeed, while a number of financial institutions and organizations have highlighted the difficulties faced in lending out available funds for EE and RE, a number of enterprises expressed greater willingness to invest in EE using their own resources if technical assistance could be provided towards project/investment preparation. In any case, this component will include training on financial and risk assessment of EE investments for relevant professionals of national financial institutions.

In this component, GEF funds will be likely used to provide international and national expertise for either designing/ packaging light-house EE projects and/or designing a mechanism to increase lending of national and international financing institutions for EE investments. Co-financing would be either represented by equity and resources contributed by partner enterprises towards the implementation of light-house EE projects or by the funds earmarked or mobilized by national and international banks to finance EE projects and investments supported by the GEF project.

Key Proposed Outputs and Activities

Output 3.1. Three-four selected energy efficiency lighthouse projects are implemented in key energy intensive industrial sectors

Activities under this output would include technical assistance to selected partner enterprises in designing and packaging light-house EE projects for financing and implementation kick-off.

Output 3.2. Mechanism to enhance mobilization and disbursement of available commercial financing for energy efficiency and low-carbon technology investments is introduced (options include: TA facility attached to Macedonian bank credit line or enhancement of loan guarantee schemes).

During the PPG phase special attention will be given to mechanisms/schemes that could support and enhance the USAID loan guarantee mechanism (Development Credit Authority facility) for small and medium sized enterprises and the credit scheme of the Macedonian Bank for Development Promotion. Based on the initial discussion and assessment the GEF-UNIDO project may support the design, pilot and initial operation of a technical assistance facility for EE investment preparation to be supplemental and directly linked to one of these two existing mechanisms. Activities associated to the establishment of any supporting scheme will certainly include training on financial and risk assessment of EE investments for partner financial institutions.

Activities under this output would include provision of international and national experts to work with national and international financing institutions to detail modalities of collaboration and to make operational such modalities in order to increase EE lending from existing credit facilities.

Project management:

Project management will focus on supporting the project implementation arrangements on a day-to-day basis; managing the staff and experts involved in the pilot projects and other activities; coordinating with all stakeholders, including other GEF-funded projects under implementation; monitoring and evaluating project progress and capturing lessons learned; and communicating with all stakeholders, both in Macedonia and internationally, about the project's activities and results.

The Ministry of Environment and Physical Planning, the Ministry of Economy and the Energy Agency of the Republic of Macedonia are the key institutional counterparts and beneficiaries of the project. While detailed project implementation and management structure will be defined during the project preparation phase, on the basis of discussions held with counterparts during the preparation of the PIF the following is envisaged:

- A Project Advisory Committee (PAC) will be established for periodically reviewing project implementation progress, facilitate co-ordination between partners, provide advice and guidance, and ensuring ownership, support and sustainability of the project results. The PAC will include representatives of the Ministry of Environment, the Ministry of Economy and the Energy Agency, plus representatives of industry, NGOs, financial institutions and other bilateral/ international organizations partnering in the project.
- A lean Project Management Unit (PMU) reporting to UNIDO and the PAC will be established. The PMU will be responsible for the day-to-day management, monitoring and evaluation of the project activities. In close collaboration with the Ministry of Environment, the Ministry of Economy and the Energy Agency, the PMU will ensure coordination of all project activities being carried out by project personnel and partners.

Global Environmental Benefits

While addressing barriers to increased and sustainable energy efficiency in industry, the outputs and outcomes of this project are expected to deliver substantial reduction of GHG emissions. The project will lead to considerable energy

savings and GHG emission reductions through project component 2 and 3. The project will produce direct GHG emission reductions through the implementation of EnMS, the technical capacity built and the implementation of EE projects within the project duration. Indirect reductions will accrue from the replication and dissemination of EnMS and light-house EE projects as well as through the policy and regulatory technical assistance that will create a more supportive enabling environment for industrial energy efficiency.

Based on initial calculations the project is expected to bring about direct GHG emission reductions at the level of 30,000-45,000 tons CO₂eq and indirect GHG emission reductions between 250,000 and 500,000 tons CO₂eq over a ten years period. During the PPG phase calculation and estimates will be refined.

B.3. Describe the socioeconomic benefits to be delivered by the Project at the national and local levels, including consideration of gender dimensions, and how these will support the achievement of global environment benefits (GEF Trust Fund) or adaptation benefits (LDCF/SCCF). As a background information, read Mainstreaming Gender at the GEF”:

Energy efficiency will reduce the local environmental impacts of the energy production and use. Through the IEE the atmospheric emission of harmful substances such as oxides of sulfur, oxides of nitrogen, and smoke will be reduced. The adverse effects on health such as common respiratory ailments that are associated with those emissions will consequently decrease. Improvements in commercial economic performance, and uplifting the energy efficiency sector itself, will inevitably lead to nationwide employment opportunities. Energy efficient manufactures will also preserve the occupants` health and wellbeing.

Reducing CO₂ emissions through IEE is one of the most cost effective methods of reducing GHG emissions, and thereby combating climate change. It has been demonstrated that one of the most cost-effective ways of maximizing commercial profitability is the adoption of appropriate IEE measures. Nationwide, this will improve Macedonia’s export performance and improve the value of the economy. The IEE will also enable to meet the rising national maximum demand. Energy conservation will reduce the necessary volume of electricity and crude oil in particular. This will enhance the robustness of Macedonia’s energy security and will increase the country’s resilience against external energy supply disruptions and price fluctuations.

Having in mind that the women are equally engaged in the industry as men, they will benefit from the job creation and abatement of health problems that are presently common due to the air pollution associated with the energy intensity and dirty energy sources.

B.4 Indicate risks, including climate change risks that might prevent the project objectives from being achieved, and if possible, propose measures that address these risks to be further developed during the project design:

Risk	Level of Risk	Mitigation
Institutional: Coordination between key ministries and stakeholders remains weak and enterprises do not actively participate in the project.	Moderate	This risk will be substantially mitigated by: (i) building understanding and capacity of project counterparts and stakeholders during project preparation to ensure stronger ownership of project; (ii) Clear definition of roles and responsibilities during project preparation and establishment of a Project Management Unit (PMU) to coordinate executing partners and major stakeholders during implementation.

		(iii) Project Steering Committee establishing the institutional linkages among stakeholders
Policy and Regulatory – Proposed policies, regulations and programs are not adequately adopted and implemented; weakening of political commitment.	Moderate	This risk will be substantially mitigated by: (i) Engaging decision makers early on in the project preparation phase, building their understanding and keep them involved during the implementation. (ii) Carefully designing and providing capacity building programs tailored to policy-makers and institutional specific needs.
Technological: Companies and EE service providers fail to understand the technical/business opportunities and potential benefits of implementing energy management systems and energy efficiency projects.	Low	This risk will be substantially mitigated by: (i) building clear understanding of target beneficiaries about EnMS and the project during project preparation; (ii) preparing effective information packages (iii) carefully designing tailored capacity building programs for experts and enterprises clearly defining the targeted outcomes (iv) setting up intermediate performance indicators to monitor, verify and report on progress
Economic and Financial: Following the EnMS implementation and energy systems optimization assessment and report, enterprises might not be willing to invest in energy efficiency projects and technologies, even if energy saving potential is important	Low	This risk will be substantially mitigated by: (i) providing training for enterprises’ key personnel to build their capacity to better understand the economic and financial value of investing in energy management and energy systems optimization. (ii) provide project preparation technical assistance and enhance promotion and marketing of existing financing facilities through training for both banks and target clients.

B.5. Identify key stakeholders involved in the project including the private sector, civil society organizations, local and indigenous communities, and their respective roles, as applicable:

Given its articulated structure and intervention logic, the project will work with many stakeholder groups, delivering benefits to most of them.

At the Government and institutional level the Ministry of Economy, the Energy Agency and the Ministry of Environment and Physical Planning will be the key stakeholders, counterparts and beneficiaries of under Project Component 1.

Manufacturing enterprises, both large and SMEs, and their sector associations will play the key role as stakeholders, partners and beneficiaries of Project Component 2. Under this component EE service providers and consultants, including the National Cleaner Production Centre, will be also playing a key role and providing a critical contribution to the achievement of project outputs.

National banks and international financial institutions will be the key stakeholders of Project Component 3.

Non Governmental Organizations (NGOs) such as the Center for Climate Change and international organization such as the Regional Environmental Centre will be involved to facilitate and support ongoing dialogue with enterprises and institutions as well as broader stakeholder consultations.

B.6. Outline the coordination with other related initiatives:

United States Agency for International Development (USAID)

The USAID program to be launched during the 2nd-3rd quarter of 2012 offers great potential for synergies with the UNIDO-GEF project and multiplying overall impact and cost-effectiveness of both programs.

The USAID program has a focus on SMEs and enhancing their competitiveness through increased energy efficiency. The Program will provide substantial capacity building for IEE, including energy management systems, and technical assistance for EE and RE investments support.

The UNIDO-GEF project will focus on large energy-intensive enterprises and sectors.

UNIDO has been the initiator of the process that in June 2011 led to the release of ISO 50001 Energy Management System Standard and it has actively contributed to its development. UNIDO currently is the leading international organization in building capacity of enterprises and experts in implementing energy management systems in line with ISO 50001, with comprehensive and tested training programs. Based on discussion held with USAID colleagues in Macedonia, UNIDO would provide its EnMS/ISO 50001 implementation training program to USAID for use within its Program, saving significant USAID budget resources that would be devoted towards the provision of more training and technical assistance under the USAID and GEF-UNIDO projects. Similar synergies would be possible for other trainings planned by USAID for which UNIDO has already available comprehensive and proven training programs.

Additional synergies and coordination between the USAID program and the UNIDO-GEF project will be pursued under Project Component 1 and 3. Under Project Component 1 the USAID and UNIDO-GEF will collaborate and join resources with respect to the development of a monitoring, verification and reporting framework and methodology. Under Project Component 3, collaboration will be explored in relation to the risk guarantee fund that USAID has currently in place but that is not performing according to expectation.

National Cleaner Production Centre (NCPC)

Established in 2007 by UNIDO in collaboration with the Ministry of Environment and Physical Planning, the NCPC is based in the Faculty of Mechanical Engineering of the Ss. Cyril and Methodius University of Skopje. Since then the NCPC has successfully established itself as national focal point for the provision of resource efficiency and cleaner production (RECP) services to SMEs, for coordinating RECP initiatives, partnering with public and private institutions at national and regional levels and enhancing national capacity through training.

Since the end of 2010 the NCPC has been focusing its activities on the food processing agro-industry sector providing technical assistance and training on the development and implementation of low carbon production. Activities performed and to be performed include development of methodology and approaches, training of national service providers, execution of RECP assessments, identification of low carbon production opportunities, detailed techno-economic analysis of most promising ones, promotion of environmentally sound technologies (EST) and awareness raising.

The UNIDO-GEF project will build on the experience and knowledge assets accrued by the NCPC over the years. The NCPC will be a key project partner and beneficiary under Project Component 2. The UNIDO-GEF project will close work with the NCPC also under Project Component 1 with respect to monitoring, verification and reporting of industrial energy performance and the inclusion of energy performance indicators in the national protocol for Integrated Prevention and Pollution Control (IPPC) for industry.

National and International Financing Institutions

The GEF-UNIDO project would look for synergies and collaboration with the national and international financial institutions that have ongoing financing facilities or mechanisms to support EE investments in industry.

During the PPG phase the GEF-UNIDO project will explore feasibility and modalities of collaboration with national banks such the Macedonian Bank for Development Promotion, Komercijalna Banka, UNI Banka, NLB Tutunska Banka, IK Banka, and Ohridska Banka; as well as with the EBRD in order to identify mutually beneficial collaboration opportunities between the UNIDO-GEF project and the two EBRD regional investment facilities current available for Macedonian companies.

C. DESCRIBE THE GEF AGENCY’S COMPARATIVE ADVANTAGE TO IMPLEMENT THIS PROJECT:

UNIDO is included in the Comparative Advantage Matrix for promoting energy efficiency in the industrial sector. Furthermore, GEF Council Document on Comparative Advantages of the GEF Agencies has recognized UNIDO’s extensive knowledge of SMEs in developing countries and countries with economies in transition.

UNIDO will draw upon its previous and current experience of cooperation with Macedonian manufacturing enterprises and stakeholders as well as of implementation of environmental and resource efficient projects that contribute to enhance Macedonian industry competitiveness while delivering key global and local environmental benefits.

UNIDO will bring to the project its leading experience and extensive knowledge assets (i.e. training programs, tools, methodologies, platforms, etc.) for capacity building on energy management systems (EnMS) and standards implementation, industrial energy system audit and optimization, certification schemes for EnMS, energy managers and ISO 50001 auditors, monitoring and verification, etc.

C.1 Indicate the co-financing amount the GEF agency is bringing to the project:

UNIDO is contributing to the project both in-kind and cash resources. The in-kind co-financing will be represent by the knowledge and training assets that are available to UNIDO and that UNIDO would contribute to the project. These would include the following:

- Energy management systems (EnMS) and ISO 50001 implementation
- Energy system assessment and optimization
- Energy audits
- Monitoring and Verification
- Certification schemes for ISO 50001 auditors and energy managers

Additional in-kind contribution will be contributed by the UNIDO NCPC through the provision of knowledge assets such industrial energy audits, pre-feasibility studies and energy efficiency project pipelines as well as expert advisory services and support for Project Component 2 and 3. The NCPC has provided inputs and support in the preparation of the present PIF. Its knowledge and pool of expertise would be further capitalized during the PPG phase and the full-fledge project implementation phase.

The overall value of UNIDO in-kind co-financing contribution is estimated to amount to 450,000 USD.

As for the cash co-financing, UNIDO would contribute 60,000 USD to the implementation of the full-fledged project.

C.2. How does the project fit into the GEF agency's program (reflected in documents such as UNDAF, CAS, etc.) and staff capacity in the country to follow up project implementation:

The project is well aligned with the UNIDO strategy for Macedonia and other countries of the Former Yugoslav Republic, focusing on environmentally sound and resource efficient industry, reduction of ozone depleting substances and persistent organic pollutants.

UNIDO contributes to UNDAF 2010-2015 under Outcome 3: Environmental Protection. The proposed would contribute to the achievement of Sub-outcome 3.1: *National policies better address climate adaptation measures and demonstration mes respond to climate change challenges* and to Output 3.1.2: *Demonstration of energy efficiency and renewables initiatives implemented and preparatory assistance for financing projects through the clean development mechanisms supported.*

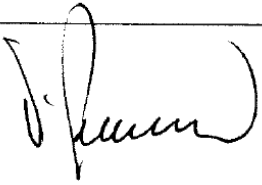
UNIDO has several ongoing environmental projects in Macedonia including the GEF project "Phasing-out and elimination of PCBS and PCB-containing equipment". UNIDO does not have a country office but it has a National Cleaner Production Centre which provides local support to projects. The Centre has at the moment two full time employees.

PART III: APPROVAL/ENDORSEMENT BY GEF OPERATIONAL FOCAL POINT(S) AND GEF AGENCY(IES)

A. RECORD OF ENDORSEMENT OF GEF OPERATIONAL FOCAL POINT (S) ON BEHALF OF THE GOVERNMENT(S): (Please attach the [Operational Focal Point endorsement letter\(s\)](#) with this template. For SGP, use this [OFP endorsement letter](#)).

NAME	POSITION	MINISTRY	DATE (MM/dd/yyyy)
Ms. Daniela RENDEVSKA, GEF Operational Focal Point	Head of Unit for Bilateral and Multilateral Cooperation	Ministry of Environment and Physical Planning, FYR Macedonia	12 SEPTEMBER 2012

B. GEF AGENCY(IES) CERTIFICATION

This request has been prepared in accordance with GEF/LDCF/SCCF policies and procedures and meets the GEF/LDCF/SCCF criteria for project identification and preparation.					
Agency Coordinator, Agency name	Signature	DATE (MM/dd/yyyy)	Project Contact Person	Tele- phone	Email Address
Dmitri Piskounov, Managing Director PTC, UNIDO GEF Focal Point		14 September 2012	Mr. Marco Matteini Industrial Development Officer	+ 431 26026 4583	M.Matteini@unido. org 