



PROJECT IDENTIFICATION FORM (PIF) ¹

PROJECT TYPE: Full-sized Project

TYPE OF TRUST FUND: GEF Trust Fund

PART I: PROJECT IDENTIFICATION

Project Title:	Introduction of energy management system standard in Ukrainian industry		
Country(ies):	Ukraine	GEF Project ID: ²	4784
GEF Agency(ies):	UNIDO (select) (select)	GEF Agency Project ID:	XXUKR11X05
Other Executing Partner(s):	State Agency on Energy Efficiency and Energy Saving of Ukraine; Ministry of Economic Development and Trade (Department of the Technical Regulation), Institute for Energy Saving and Energy Management of the National Technical University of Ukraine "Kyiv Polytechnical Institute"; State Statistics Service of Ukraine; National Accreditation Service Agency of Ukraine	Submission Date:	14.12.2011 Resubmission: 6.1.2012
GEF Focal Area (s):	Climate Change	Project Duration (Months)	60
Name of parent program (if applicable): ➤ For SFM/REDD+ <input type="checkbox"/>		Agency Fee (\$):	555,000

A. FOCAL AREA STRATEGY FRAMEWORK³:

Focal Area Objectives	Expected FA Outcomes	Expected FA Outputs	Trust Fund	Indicative Grant Amount (\$)	Indicative Co-financing (\$)
CCM-2 (select)	3.1: Policy, legal and regulatory framework environment for energy efficiency investments in industry adopted	3.1: Energy efficiency policy and regulations in place 3.2: Investments mobilized for application of EnMS	GEFTF	900,000	2,500,000
	3.2 Sustainable delivery mechanisms established and operationalized		GEFTF	4,400,000	35,862,500
Sub-Total				5,300,000	38,362,500
Project Management Cost ⁴			(select)	250,000	1,387,500
Total Project Cost				5,550,000	39,750,000

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

² Project ID number will be assigned by GEFSEC.

³ Refer to the reference attached on the [Focal Area Results Framework](#) when filling up the table in item A.

⁴ GEF will finance management cost that is solely linked to GEF financing of the project.

B. PROJECT FRAMEWORK

Project Objective: Accelerate the diffusion of energy management system (EnMS) standard in industry through the adoption of energy management system standards.						
Project Component	Grant Type	Expected Outcomes	Expected Outputs	Trust Fund	Indicative Grant Amount (\$)	Indicative Cofinancing (\$)
1. Policy and institutional support for the introduction of a national energy management system standard corresponding to the ISO 50001	TA	The policy and institutional framework supporting the national implementation of energy management system standard in industry is created	1.1 Detailed plan of institutional activities required for adaptation and promulgation of ISO 50001 “Energy management standard” at national legislation level is prepared. 1.2 Policy establishing a voluntary incentive scheme to accelerate the introduction of energy management system standards is adopted. 1.3 Certification scheme for industries is established. 1.4 Accreditation scheme for energy management system service providers / energy auditors is developed. 1.5 National monitoring, reporting and verification methodology and structure to track energy performance at enterprise /sectoral /national level is set up.	GEFTF	900,000	2,500,000
2. Building the national capacity on the planning, implementation and certification of energy management system standards	TA	National capacity on the implementation and certification of energy management system standards in industry is developed	2.1 National training program for energy managers and other enterprise personel is developed. 2.2 National training program for energy experts on energy management and system optimization is developed. 2.3 Qualification program for energy auditors is launched.	GEFTF	700,000	3,500,000
3. Technology diffusion and deployment to promote implementation of energy management system standard in selected industrial sectors	Inv	The sector-wide penetration of energy management system standard is accelerated and IEE technologies promoted	3.1 At least 30 companies in selected industrial sectors implement energy management systems and EE technologies and get ISO 50001 certified. 3.2 Energy management best-practices disseminated. 3.3 Industry awareness of the environmental and economic benefits of energy management system standard is enhanced. 3.4. Non-grant instruments for promotion of EE/RE technologies explored. 3.5 National award scheme for outstanding energy management performance is created.	GEFTF	3,000,000	30,000,000
	TA				700,000	
Sub-Total					5,300,000	38,362,500
Project Management Cost⁵				(select)	250,000	1,387,500
Total Project Costs					5,550,000	39,750,000

⁵ Same as footnote #3.

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

Sources of Cofinancing	Name of Cofinancier	Type of Cofinancing	Amount (\$)
National Government	Unknown at this stage	In-kind	3,900,000
GEF Agency	UNIDO	Grant	75,000
Private Sector	Unknown at this stage	Grant	12,550,000
Others	Financial institutions	Hard Loan	11,000,000
CSO	NGOs	In-kind	150,000
GEF Agency	UNIDO	In-kind	75,000
SMEs	To be identified during PPG stage	In-kind	6,000,000
SMEs	To be identified during PPG stage	Grant	6,000,000
Total Cofinancing			39,750,000

D. GEF/LDCF/SCCF RESOURCES REQUESTED BY AGENCY, FOCAL AREA AND COUNTRY¹

GEF Agency	Type of Trust Fund	Focal Area	Country Name/Global	Grant Amount (a)	Agency Fee (b) ²	Total c=a+b
(select)	(select)	(select)				0
(select)	(select)	(select)				0
(select)	(select)	(select)				0
(select)	(select)	(select)				0
(select)	(select)	(select)				0
(select)	(select)	(select)				0
(select)	(select)	(select)				0
(select)	(select)	(select)				0
(select)	(select)	(select)				0
(select)	(select)	(select)				0
Total Grant Resources				0	0	0

¹ In case of a single focal area, single country, single GEF Agency project, and single trust fund project, no need to provide information for this table

² Please indicate fees related to this project.

PART II: PROJECT JUSTIFICATION

A. DESCRIPTION OF THE CONSISTENCY OF THE PROJECT WITH:

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

The project is consistent with GEF-5 Climate Change Focal Area objective 2 aimed at promoting market transformation for energy efficiency in industry and the building sector. It presents a programme that promotes the introduction of energy management system standards in industry through a combination of technical assistance and investment activities including: (1) Supporting the policy and institutional framework for the introduction of a national energy management system standard corresponding to ISO 50001, (2) Building the national capacity on the development, implementation and certification of energy management system standard and (3) Implementation of projects to adopt energy management system in six industrial sectors.

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

N/A

A.2. Describe the consistency of the project with 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.:

Ukraine submitted its fifth national communication on 27 September 2011. The main drivers of emission trends in the Ukraine are the transition from a centrally planned economy to a market based economy, structural changes in the economy and the decrease in energy consumption as well as the changes in the structure of primary energy use. The Government has taken some steps towards consideration of economic instruments in addition to regulations and standards in the country's climate change related policy portfolio. These include recent initiatives to develop feed-in tariffs for electricity produced from renewables, tax incentives and CO2 taxation and the national Emission Trading Scheme (ETS). It is to be noted however that the provisions of these initiatives are not fully implemented owing to a lack of assigned financial resources. Table 1 presents a summary of information on policies and measures related to climate change, as reported by Ukraine, under its fifth national communication plan.

Table1: **Summary of information on policies and measures**

<i>Major policies and measures</i>	<i>Examples/comments</i>
<i>Policy framework and cross-sectoral measures</i>	
	National plan for the implementation of provisions of the Convention and its Kyoto Protocol (2005, updated 2009) Strategy of national policy for ecology until 2020 (2010) National action plan on environmental issues for 2009–2012 State environmental monitoring programme for 2008–2012
<i>Policies and measures by sector</i>	
<i>Energy</i>	Energy strategy of Ukraine until 2030 (2006) National energy programme until 2010 (1996) Law on power industry (1997, with amendments in 2010)
<i>Building regulations</i>	Programme for the building sector 2009–2014 State programme for the reform and development of housing and communal services for 2004–2010 (2004, with amendments in 2009) Law on heat supply (2005)

	Building codes (2007, 2010)
Renewable energy sources	<p>Law on alternative energy sources (2003)</p> <p>Law on alternative types of liquid and gaseous fuels (2000)</p> <p>Law on green tariffs (2008)</p> <p>Decree on measures promoting the use of alternative energy sources (2009)</p> <p>Ukraine's comprehensive State programme on construction of wind farms until 2010</p> <p>Comprehensive State programme on energy conservation until 2010 (1997, with amendments in 2000)</p> <p>Law on energy savings (1994, with amendments in 1999, 2005–2007 and 2011)</p>
Energy efficiency	<p>Law on combined heat and power generation (2005, with amendments in 2010)</p> <p>State economic programme on energy efficiency for 2010–2015 (2010)</p> <p>Sectoral programme on energy efficiency until 2017 (2009)</p> <p>Sectoral programme on the increase of energy efficiency in buildings for 2010–2014</p>
Transport	<p>Plan for implementation of the governmental environmental protection policy in the transport sector for 2004–2010 (2004)</p> <p>Sectoral programme for energy conservation and for introduction of alternative fuels in transport for 2006–2010</p>
Industrial processes	State programme on industrial development for 2003–2011 (2003)
Agriculture	<p>Husbandry and crop production</p> <p>The governmental programme on the development of Ukrainian village until 2015 (2007). The programme includes a number of sectoral subprogrammes, such as a sectoral dairy husbandry development programme until 2015 and a sectoral soil fertility programme for 2008–2015</p> <p>Manure management systems Governmental support for the installation of utilities for biogas use from liquid manure management systems</p> <p>Promotion of efficient farming Governmental subsidies and loans for the purchasing of modern, fuel-efficient farming equipment</p>
Land use, land-use change and forestry	
Forestry	Governmental programme on forests of Ukraine for 2010–2015 (2009)
Waste	<p>Governmental programme on municipal solid waste management 2004–2011 (2004)</p> <p>Conception of the State economy and scientific–technical programme for the management of municipal solid wastes for 2010–2019 (2010)</p> <p>Law on mandatory collection and sorting of solid waste</p>

Source: FCCC/IDR.5/UKR

With regard to the Industrial sectors, in 2009, the Ministry of Industrial Policy approved the sectoral programme on energy efficiency until 2017 which focuses on improving energy efficiency in energy intensive industries such as ferrous and non ferrous metallurgy, machine manufacturing and the chemical industry. The programme estimates a potential reduction of energy use in those industrial sectors of around 50 per cent corresponding to an estimated reduction of 22.6 MT CO₂ eq. In addition, there are three other programmes related to industrial processes, namely: the State programme for economical industrial development until 2017, the State programme of industrial development of 2003-2011 and the State programme for development and reforms of mining and metallurgy complex until 2011.

In its Fifth Communication Plan, Ukraine also presents the barriers that could hamper the implementation of these policies and measures in the industrial sectors. These barriers include over-optimistic planning, insufficient government financing, lack of incentives for private investments and the global financial crisis. The estimated and expected effect of implemented and adopted policies and measures in terms of GHG emission reductions avoided or sequestered for 2010, 2015 and 2020 is presented in the table 2 below:

Table 2: Summary of greenhouse gas emission projections for Ukraine

	<i>Greenhouse gas emissions (Tg CO₂ eq per year)</i>	<i>Changes in relation to base year level (%)</i>	<i>Changes in relation to 1990 level (%)</i>
Inventory data 1990^a	928.1	0.8	–
Inventory data 2008^a	427.8	–53.5	–53.9
Kyoto Protocol base year^b	920.8	–	–0.8
Kyoto Protocol target^b	920.8	0.0	–0.8
‘Without measures’ projections for 2010^c	408.5	–55.6	–56.0
‘With measures’ projections for 2010^c	386.1	–58.1	–58.4
‘With additional measures’ projections for 2010^c	377.0	–59.1	–59.4
‘Without measures’ projections for 2020^c	755.2	–18.0	–18.6
‘With measures’ projections for 2020^c	638.1	–30.7	–31.2
‘With additional measures’ projections for 2020	590.9	–35.8	–36.3

Source: FCCC/IDR.5/UKR

Further information on the projected effects of the planned, implemented and adopted policies and measures is summarized in table 3 below:

Table 3: Projected effects of planned, implemented and adopted policies and measures in 2010 and 2020

<i>Sector</i>	<i>Effect of implemented and adopted measures (Tg CO₂ eq)</i>	<i>Relative value (% of 1990 emissions)</i>	<i>Effect of planned measures (Tg CO₂ eq)</i>	<i>Relative value (% of 1990 emissions)</i>	<i>Effect of implemented and adopted measures (Tg CO₂ eq)</i>	<i>Relative value (% of 1990 emissions)</i>	<i>Effect of planned measures (Tg CO₂ eq)</i>	<i>Relative value (% of 1990 emissions) 2010 2020</i>
Energy (without CO₂ from transport)	9.9	1.7	4.0	0.7	86.1	14.4	28.4	4.7
Transport – CO₂	0.7	0.8	0.4	0.5	8.9	10.2	4.8	5.5
Industrial processes	11.6	9.0	3.1	2.4	20.3	15.8	6.3	4.9
Agriculture	0.6	0.6	1.2	1.1	2.7	2.6	6.2	5.9
Waste management	0.3	3.6	0.2	2.4	1.1	13.1	0.7	8.3

Source: FCCC/IDR.5/UKR

The planned project is in line with the national priorities of Ukraine to ensure the energy security of the country, reduce fossil fuel consumption and thus, reduce the country's dependence on imported fuel, which will in its turn reduce the CO₂-equivalent emissions and increase of competitiveness of the national economy.

The analysis of the national policies and measures adopted by the Ukraine proves the need to further improve the legislation and create a system of national standards in the sphere of energy efficiency. By implementing the system of energy management in the industry of Ukraine the project will make a considerable contribution to the national programmes by introducing an effective tool to increase energy efficiency and reduce the CO₂-equivalent emissions.

B. PROJECT OVERVIEW:

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

As a result of a planned economy with energy prices that are subsidized by the state in the recent past and the insufficient efforts on introduction of the efficient energy use, Ukraine has very low energy efficiency levels. As per the data of the International Energy Agency (IEA) the energy consumption in Ukraine makes up 0,5 kg of oil equivalent per 1 dollar of GDP, which exceeds the average energy efficiency of GDP of developed countries by 2,6 times. CO₂ emissions per GDP unit in Ukraine are also among the highest in the region. In the country there is a considerable potential for energy use reduction and reduction of the greenhouse gas (GHG) emissions through increasing energy efficiency and promoting the use of renewable energy sources in such sectors as industry, transport, housing-communal services and buildings.

Energy Consumption in Ukraine

Over the period from 1990 - 2001 the electric power consumption in Ukraine reduced up to 44,9% from the level of 1990 because of the economic decline (GDP reduction). The demand for electric power was also reduced. Decreased demand and export led to a reduction of load of power stations and production of electric energy in Ukraine. If in 1990s there was a general deficit of capacities in the energy system of Ukraine, then due to reduction of the demand there was a significant reserve and even an excess of basic capacities of the heat and power stations.

In the period of an isolated work of the energy system under a considerable base of nuclearpower stations (up to 45-50%) the frequency deviation made up from 49,3 to 50,4 GHz (at night) which caused a considerable damage to the energy system equipment and the suppliers. Significant changes also happened in the structure of electric power consumption by sectors of consumers (table 4).

Table 4: **Structure of electric power consumption in different years**

Consumption structure	1990p.	2001p.	2007p.	2008p.	2009
Industry	64,5%;	56,9%;	55,6%	52,1	47,6
Agricultural consumers	9,0%;	3,4%;	2,3%	2,2	2,5
Transport	6,3%;	7,3%;	6,7%	6,7	6,2
Communal-household consumers	8,0%;	10,9%;	11,4%	12,5	12,5
Population	9,4%.	18,3%.	19,5%	21,6	2 ,6
Others	2,9%	3,2%	4,5%	4,9	4,9
Total	100%	100%	100%	100%	100%

Comparing the structure of electric power consumption of 1990 (the year of the highest electric consumption) and 2001 (the year of the least electric power consumption) one can see that an essential change of specific weight toward the reduction happened in the industry and agricultural sector of electric power consumption, and an increase – in the communal-household sector, transport, and population.

Over the period from 2001 to 2007 in Ukraine there is an annual gradual increase of electric power consumption from 122,5 bln. kWh in 2001 up to 148,5 bln. kWh in 2007. One should note that the structure of electric power consumption in 2007 did not see any substantial changes comparing to 2001. The increase takes place in the non-production sphere (communal-household consumers and population), that is mainly at the cost of a group of consumers with a considerable daily, weekly and seasonal unevenness of electric power consumption modes. The analysis of quantitative indicators of energy use efficiency in specific sectors of economy of Ukraine shows:

Industry is a priority sector from the perspective of energy consumption. This is preconditioned by the fact that it is the biggest consumer and the consumption is limited by a relatively small number of users. Some sectors of the industry in Ukraine consume 50-100% more energy per tone of product than the corresponding sectors in the EU countries. One should note that the bigger part of the equipment used nowadays has a low efficiency output, a significant moral and physical depreciation, because it was designed at the times when the energy cost was very low.

The analysis of energy consumption in the industrial sector gives the following picture. In general fuel-energy balance of ferrous metallurgy a share of primary energy (2005) makes up more than 75%. The efficiency output of the fuel use in the sector does not exceed 32-33%. In the sector in 2003 there were 39 blast furnaces functioning out of 45, 45 open-hearth furnaces - out of 66, and 19 convectors – out of 22, the actual energy consumption per ton of production exceeds the analogous average indicator of the EU countries by 1,5 – 1,6 times. In the chemical sector (which gives 6,1% of the GDP and has 6,6% of the total volume of industrial production and 10,5% of export) the actual energy consumption of national chemical production units considerably exceeds the analogous indicators of the leading modern technologies: in the ammonia production – by 1,4 – 1,8 times; caustic salt – by 1,3 – 1,4 times; soda ash by 2,0 – 2,3 times; methanol by 2,0 – 2,3 times; ethylene by 2, 8 – 3,0 times; technical carbon by 1,5 – 2,5 times.

The actual energy consumption in Ukraine exceeded the analogous average indicator of the EU countries per ton of sugar by 2 times; per 1 m² of glass – by 2 times; per ton of cement – by 1,5 – 1,7 times. The technological losses in the electric grids of Ukraine are much higher than it is technically allowed (e.g. in 2009 – 12,7%, in 1990 – 8,09%). The average efficiency output of coal energy blocks of Ukraine makes up approx. 30,5%.

The *Transport sector* nowadays is a “secondary” (in comparison to the OECD countries) sector, however there is no doubt that it will quickly develop as long as the economy improves and the number of personal cars increases. The issue of eco-energy monitoring of work of transport remains important.

The sector of consumption in the *communal management and sphere of services* is very versatile and it contains a lot of individual consumers. There is a considerable potential for improvement of the situation in this sector if one takes into account low levels of insulation of the building constructions, almost entire absence of regulators of technological processes (heating, lighting, ventilation and others) in the majority of houses. The average efficiency output of the heat and power stations and boiler-houses does not exceed 70%, the losses in the heating grids are 25-29%.

The *construction of new buildings and the reconstruction* of the already built ones without taking into account the need in energy economy, especially when the designers and builders do not feel responsible to those who pay the bills for heating, is inadmissible. EU countries have established very strict norms of heating characteristics of buildings and their components: airtightness and ventilation, heat insulation etc. The energy certificate issuance for buildings and constructions becomes relevant.

In 2009 because of the economic crisis in Ukraine there was a partial reduction of electric power consumption almost in all sectors of industry and groups of consumers, except the groups “Population” and “Agricultural consumers”, where electric consumption increased by 2448,5 mln. kWh or by 7,7% and by 46,0 mln. kWh or by 14% consequently. A specific weight of electric consumption of industrial consumers reduced from 52,1% to 47,6%, mainly due to the reduction of share of electric consumption of the metallurgical sector - from 27,5% to 25,1%, chemical and petrochemical – from 4,3% to 3,4%, machine construction – from 4,7% to 3,7% and construction materials – from 2,3% to 1,7%. On the national level the indicators of efficiency of energy use should play an exclusively important role while selecting priority directions for investments and when identifying progress in the effective use of energy within the entire country.

Energy Management in Ukraine

Nowadays in Ukraine one of the main mechanisms of management of the efficiency of the fuel-energy resources (FER) use is the norming of their consumption, which is regulated by the following documents on the national level:

- The Resolution of the Cabinet of Ministers of Ukraine №768 as of July 15, 1997 "On the Procedure of Norming the Specific Expenditures of Fuel-Energy Resources in the Social Production”;
- The Order of the State Committee of Ukraine on energy conservation №878/7166 as of November 7, 2002 “On Approval of the Main Provisions on Norming the Specific Expenditures of Fuel-Energy Resources in the Social Production”.

The system has been in place for more than 12 years however its effectiveness is doubtful as it has significant drawbacks. These are mainly related to the fact that the majority of functioning methodologies of norming the specific expenditures of the FER does not contain the actual

process of norming of energy consumption. The planned indicators of specific expenditures of fuel or energy that are established based on the current norming methodologies, are neither sufficiently substantiated nor objective, since they are calculated in the conditions of uncertainty of many indicators which are necessary for this.

The existing norming system does not give a possibility to make an operational control of effectiveness of the fuel and energy use, and it does not allow controlling the energy efficiency of individual aggregates, technological processes or subdivisions of the enterprise. None of the existing norming methodologies identifies a clear procedure for controlling the fulfillment of established norms of specific expenditures of the FER. As a rule, the fuel and energy consumers do not have an opportunity to timely correct the planned indicators of specific expenditures of the FER, therefore the penalty provisions, which are applied by the State Inspectorate on Energy Conservation are not substantiated. Thus, the existing system of normalization of specific fuel and energy expenditures requires to evolve to include objective methods of controlling the efficiency of use of FERs.

The mentioned factors are directly or indirectly related to the absence of a comprehensive permanently functioning system of energy management in industry, aimed at introduction of an energy policy of the state, improvement of active involvement of decision makers at national level and introducing a set of instrument to accelerate Energy Management and Energy Efficiency, improvement of the normative-legal framework, development of modern methods and instruments of management, organization and administration, introduction of the newest technologies and technical means on energy conservation, optimization of volumes and structure of energy consumption of industrial objects, reduction of energy expenditures, increase of efficiency and control of resources, formation of European public institutes that change a behavior model in the society concerning the energy use and environmental impact issues.

Barriers to effective Energy Management in industry

While technological solutions to energy efficiency and energy management are widely available, there are many barriers preventing the industry's ability to manage energy. These barriers include the (1) Lack of management commitment: although energy management triggered from bottom-up might work for a limited time, sustained results are only possible with a top-down approach where management demonstrates commitment to the energy goals of the organization, approve plans and dedicate the resources required to implement an effective energy management system are available; (2) Insufficient resources: managing energy requires commitment of human and capital resources as well as making energy a core value of the organization; (3) Lack of systematic collection of data on energy; planning the energy management system for an organization requires proper management of data on energy usage, demand, costs and the factors influencing energy consumption, which will in its turn enable the analysis of energy consumption and efficiency information and allow better planning; and (4) Changing priorities of companies (organizations), energy improvements are often implemented as an emergency reaction to an unexpected increase in prices. This is why the benefits of the introduced measures are often not sustained as they do not represent the management priorities and are often reactions to the symptoms rather than problems.

Baseline project

The Government has implemented a number of measures to reduce emissions in Industry. These include the sectoral programme on energy efficiency until 2017 which was launched by the Ministry of Industry in 2009. It focuses on improving energy efficiency in energy intensive industries and estimates a potential reduction of energy use of 50% in selected industrial leading to an estimated reduction of 22.6 MT CO₂ eq. Moreover, there are

three other programmes related to industrial processes, namely: the State programme for economical industrial development until 2017, the State programme of industrial development of 2003-2011 and the State programme for development and reforms of mining and metallurgy complex until 2011.

These programmes carry a number of impediments that would prevent them from fulfilling the set objectives. These include insufficient financing, lack of incentives for the private sector, lack of a conducive institutional framework and inadequate technical assistance provided to Industries.

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) or associated adaptation benefits (LDCF/SCCF) to be delivered by the project:

Baseline Scenario:

Without the support of the proposed GEF project, the implementation of energy management will continue to be a an urgent reaction to increased costs rather than a company culture. The project will address the barriers to the wide implementation of energy management system standard through preparing the institutional infrastucture for the introduction of a national standard on energy management. The project will also tackle the inadequate knowledge and know-how of the companies of the requirements for adopting energy management system standard and implementing energy management system standard through providing specialized training programmes and introducing qualification programmes for energy managers. Finally the project will support the wide dissemination of energy management system standard through supporting the implementation of a number of projects, recording best practice examples and disseminating them to raise the awareness of other companies.

Under the business as usual scenario, energy efficiency improvements in Industry will be implemented as individual measures by companies to tackle the symptoms rather than the problems through simple equipment exchange. This will decrease the potential impact of GHG emission reductions that may be achieved in this sector through the systematic introduction an energy management system standard through a voluntary incentive mechanism to scale up energy management in Industry.

Project scope

The requirements of the international ISO 50001 "Energy Management Systems" provide a good basis for the establishment of efective management systems in Ukraine. The establishment and introduction of practical and effective energy management systems play a significant role in forming the positive changes in an institutional process. However to introduce it successfully, it is necessary to implement the corresponding standard ISO 50001 and create a set of accompanying normative documents. Adoption of energy management system standards effectively addresses all of the barriers described above. Therefore the project aims at accelerating the diffusion of energy management system standard in industry through diffusing the nationwide adoption of energy management system standards. The main project components are providing the policy and insitutional support required for the introduction of a national energy management system standard corresponding to the ISO 50001, building the national capacity on the planning, impementation and certification of energy management system standard and technology diffusion and deployment to promote energy management system standard in six selected industrial sectors.

The main objective for introduction of a national standard on energy management should be the provision of support to industries in establishing the systems and processes necessary for improving energy efficiency. The standard should identify the requirements to an energy management system, which allows an organization to develop and introduce policy and identify objectives taking into account legal requirements and information about the essential energy aspects. It is meant for application by the organizations of all types and sizes irrespective of any geographical, cultural and social conditions. The standard refers to the activity which is under the control of an organization.

Energy management is a management tool that encompasses all issues in the context of energy including the quality of energy generation, supply, expenditures, conservation, purchase, efficiency of production, level of up-to-datedness of technologies, social-economic and ecological energy aspects, namely the emissions and pollution. Energy management ensures the foundation of main dimensions of sustainable development of the energy sector by supporting the efforts related to the energy use. This tool supports the realization of organizational, technical and behavioral activities aimed at minimization of energy consumption and expenditures of materials. Energy management is an effective way of continually improve energy performance through strategic planning, proven procedures, documents and monitoring of effectiveness of the taken energy measures.

In general, the energy management is based on a complex approach oriented on the result – the realization of the energy consumption reduction at a scale appropriate for the organization in question. From the administrative point of view, a good understanding of the energy flows is important for planning and budgeting. Energy management supports the administration by giving relevant information for forecasting the energy usage; it ensures monitoring of the energy system in a systemic and structured way. It gives a possibility to review various development scenarios and this, in its turn, makes it possible to create optimal responses to new challenges. A functional system of energy management makes it possible to immediately reveal substantial changes in the energy consumption of a certain process, which allows for instant actions and thus, for a prevention of further vain spending of energy and money, or even a breakdown of equipment, it simplifies the implementation of effective actions due to an on-going monitoring and control. Energy management helps to make an overview of consumption, needs in fuel so called forecasting, expenditures, purchases, losses and inefficient processes. Based on this information one can identify a potential for economy and investment expenditures. Forecasting will give insight into the energy usage at the national level, sector level and company level provided that the data is also monitored at each level. This can be used to balance the demand and supply of energy and stimulate utilization of renewable or alternative energy.

Introduction of such a system needs the creation of the policy and institutional framework for the adoption of a national standard including the formal declaration of a national standard on energy management system standard that is equivalent to the ISO 50001, creation of a national certification scheme as well as an accreditation scheme for auditors, setting up national monitoring, reporting and verification structures and requirements to allow tracking energy performance at the enterprise level and finally the introduction of a policy introducing a voluntary incentive schemes allowing companies that obtain the standard certification to benefit from tax rebates to provide an incentive scheme for the adoption of the standard.

In addition, the project establishes training/qualifications programmes, tools and methodologies for energy managers, energy users as well as energy auditors to create the national cadre required for the roll-out of the energy management system standard and standards implementation. Finally, it supports the roll out of a technology diffusion programme that promotes energy management system standard in three to six industrial sectors to be determined during the PPG phase through implementing 5 to 10 projects in each sector.

Introduction of an Ukrainian award on energy efficiency will aim at supporting the enterprises, which wish to contribute to the implementation of a rational energy policy and ensure the development of enterprises based on the efficient energy use and expansion of application of renewable energy sources. In the long term the Project will contribute to awareness raising on energy management system and promotion of IEE technologies.

Component 1 - Policy and institutional support for the introduction of a national Energy Management System Standard Corresponding to the ISO 50001

To ensure the robust development and use of an EnMS standard, the project will support the creation of a robust institutional framework involving a range of governmental entities including. (a) The standardization body is the body responsible for developing the standard in consultation with government entities, industry and other stakeholders. UNIDO will work together with the Ukrainian standardization body on the development of a national standard equivalent to the ISO 50001 standard. This entails lengthy negotiations with national stakeholders to ensure a balance between the overall quality of the standard and the flexibility for implementation at the company level. (b) Certification bodies who will conduct certification audits and have the authority to certify that enterprises are properly applying the standard. The project will support the Ukrainian certification body to establish a certification scheme for ISO 50001 to support the implementation of existing Government policies and programmes. (c) The accreditation body, which has the authority to give responsibility to certification bodies for issuing certification and for qualifying energy auditors. The project will support the introduction of a national accreditation scheme for certification companies and energy auditors.

Further the project will introduce policy measures to support the voluntary implementation of the standard. While the enterprise participation in the broader energy conservation agreement programmes is voluntary, they will be obliged to implement certified EnMS if they decide to participate in the broader programme, and are given financial incentives to participate in the overall energy savings agreement programmes. They will also receive technical assistance and training and in some cases are subject to non-compliance penalties. Implementation of a similar approach in other countries demonstrated a market penetration rate of 50 to 60%. By linking the requirement of implementing an EnMS to the implementation of a government programme, high participation rate may be achieved.

Finally this component promotes the set-up of a comprehensive monitoring, reporting and verification programme whereby companies will be obliged to report and government will monitor and verify the progress toward meeting energy efficiency targets and carrying out the objectives set in their strategic energy plans. This will allow the compilation of data at the enterprise, sectoral and country level and promote better planning of EE plans.

Component 2 - Building the national capacity on the planning, implementation and certification of energy management system standards

In order to support the implementation of the established policies and institutional frameworks, a technical cadre of energy experts should be developed. Therefore the project will develop training programmes for energy managers and plant personnel to guide them on the implementation of energy management systems standards starting from defining the energy policy of appropriate to the scale of their organization to the development of energy management plans and programmes, setting the energy management baseline, conducting energy reviews, establishing performance indicators and energy savings targets and to document, check and control the achievements and deviations. This will build on UNIDO programmes and experience in other countries.

Further a specific technical training programme for energy experts on the technical details for implementing energy management and system optimization projects will be developed. The

systems to be considered will depend on the prioritized sectors for intervention under component 3. This will be better defined during the PPG phase.

Finally a qualification programme for energy auditors both internal and external to the company will be developed. During the PPG phase, UNIDO will try to establish a linkage with a reputable international standard institute to develop these programmes in the Ukraine through promoting partnerships and cooperation agreements to transfer knowledge and expertise.

Component 3 - Technology diffusion and deployment to promote implementation of energy management system standard in selected industrial sectors

In order to support the outcomes that will be achieved through the previous 2 components, component 3 will focus on supporting at least 30 enterprises from selected industrial sectors in introducing EnMS and investing resources in energy efficiency projects and technologies. During the PPG phase, the application of non-grant instruments to support investments and means to increase access to EBRD and other EE credit lines available in the Ukraine will be explored. The lessons learned and best practice examples will be compiled and disseminated to promote the knowledge and awareness of industries. Finally to further encourage companies to participate in the programme, a national award scheme will be developed whereby the company with the best energy performance annually will receive an award. The details and eligibility of the companies, the selection criteria, etc. will be defined during the PPG phase.

The project promotes a systematic approach to stimulate the implementation of energy management systems in Industries. It supports the institutional infrastructure that backs up the implementation of the standard and links up to existing Government Programmes on Energy Efficiency. This will guarantee the sustainability of the project and warrant long term results.

Global Environmental Benefits:

The project will ensure the significant cut-down of greenhouse gas emissions which according to preliminary calculations only due to introduction on Energy Management System are estimated at 116,100 t CO_{2eq}. This is calculated on the assumption that the project will implement EnMS in 30 selected companies of an average annual energy consumption of around 50 GWh. It is also assumed that the annual energy savings due to implementation of Energy Management System are at a level of 2 %, which brings us to an estimated energy saving of 30 GWh per year. Over 10 years of equipment lifetime the total estimated energy savings will sum up to 300 GWh. In terms of direct GHG emissions these savings correspond to 116,100 t CO₂-equiv. (emission factor based on IPCC default factors for Eastern Europe - 0.387 tCO₂/MWh). Detailed GHG emission calculation will be performed during the PPG stage.

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.](#):

The project is expected to have a number of social and economical benefits on the local and national levels including:

- enhancing energy independence and competitiveness of national industry through introducing a systematic approach for energy management;
- strengthen national capacity through upgrading skills and supporting the institutional framework;
- improving the local environment through reducing the fossil fuel consumption.

There are no direct impacts on gender, during the PPG stage, UNIDO will perform a gender assessment to collect qualitative and quantitative data on the current situation and possible impacts of introducing energy management system standards. Accordingly, gender specific baselines may be formulated, if appropriate.

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:

The main risks relating to the project implementation are:

Risk	Rating	Mitigation
<p>Political risk: Lack of Government commitment to energy management issues. The project is in line with the national programmes and policies to reduce dependence on imported fossil fuels, increase energy efficiency and mitigate climate change.</p>	Low	The project addresses the institutional barriers and adopts an institutional structure that is supportive of energy management on the longer run.
<p>Technical risk: Companies are not aware of the technical opportunities for adopting EnMS.</p>	Moderate	The project proposes a participatory approach and organizes awareness campaigns to increase enterprise awareness of EnMS opportunities.
<p>Financial risk: Financial and credit constraints prevent industries to invest in EnMS.</p>	Moderate	The project proposes incentive mechanisms to encourage companies to invest in EnMS and foresees active involvement of the financial sector.
<p>Motivational risk: Low interest of enterprises to introduce an energy management systems standard</p>	Moderate	The risk will be reduced by facilitating (in the frame of the project) the conduction of comprehensive information-training campaign for raising awareness of top and middle level managers of industrial sectors.

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:

The key Project stakeholder will be the State Agency on Energy Efficiency and Energy Saving of Ukraine (SAEEES) which is responsible for the national policy on energy efficiency and energy saving and implementation of related measures. It will act as the national coordinating agency on this Project.

Expert support will be provided through cooperation with the Institute on energy conservation and energy management of the National Technical University of Ukraine “Kyiv Polytechnical Institute” and the Institutes of the National Academy of Sciences of Ukraine.

Other Governmental bodies involved in the project are the State Statistics Committee of Ukraine and the State Statistics for Technical Regulation and Consumer Policy and the National Accreditation Agency of Ukraine. These agencies will be the main beneficiaries of the support schemes for certification, accreditation and the national promulgation of the national standard equivalent to the ISO 50001.

The technical stakeholders of the Project are enterprises of the various industry sectors.

NGOs will be involved to cooperation on a stage of the campaign on raising public awareness.

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

The proposed project will build on experiences and lesson learned from past and ongoing projects that seek to promote energy efficiency in Ukraine. There are a number of international projects related to energy efficiency being implemented in Ukraine.

While some of them target different domains and audiences from those that are in the focus of the current project, the effect of these other projects can be expanded and reinforced by this Project.

For instance, the EBRD-UKEEP project (Energy Efficiency Programme for Banks in Ukraine), where EBRD has dedicated USD 150 mln, provides credit lines to several Ukrainian banks for onlending to private sector companies for industrial energy efficiency and renewable energy projects. The companies which used the financial resources and sub-loans under EBRD-UKEEP facility for financing technologies and measures on enhancing of energy efficiency and which have relevant experience can be motivated to implement national energy management system standards.

In the PPG stage cooperation opportunities with the ongoing EBRD-UKEEP programme and the operating bank UkrEximBank will be further elaborated. Through provision of technical assistance to the enterprises (conduction of project feasibility studies based on UNIDO COMFAR applications, energy audit, introduction of EnMS standards, investment consultations related to introduction of EnMS, training, etc.), the projects will be strengthened and gather preferences for co-financing through EBRD credit lines. Under this Project strong partnership with the EBRD and UkrEximBank will be established, industry will be assisted during the application for the UKEEP loans and supported during the negotiation and implementation phase.

The World Bank Energy Efficiency Project aims to provide USD 200 mln credit line to UkrEximBank (ratified by the Parliament of Ukraine in 2011) to finance investments in energy-saving programmes in industrial companies, municipalities and municipal-owned enterprises, as well as energy service companies. During the PPG phase cooperation opportunities will be examined in more details.

The Ministry of Regional Development, Construction, Housing and Municipal Economy of Ukraine, Ministry for Ecology and Natural Resources of Ukraine and Deutsche Gesellschaft für Internationale Zusammenarbeit (GIZ) GmbH are currently implementing a project on energy efficiency in Ukraine - "Energy efficient pilot project" (2009-2012). The project provides advice on the planning, construction and running of a new complex of residential and office buildings in Kiev. Besides the development of innovative energy concepts and the use of modern, environmentally sound technologies, the payback period of the initially high investment in energy saving measures is also seen as highly significant.

The German Federal Ministry for the Environment, Nature Conservation and Nuclear Safety (BMU) has commissioned German International Cooperation (GIZ) to implement the Energy Efficiency in Industry project. The aim of the project is to demonstrate that systematic energy management can reduce energy consumption and related greenhouse gas emissions significantly and thereby reduce energy costs. The project comprises of 3 components: Component 1 basically deals with identifying two pilot companies and setting the institutional scene for project implementation in the Oblast Donetsk. The two companies must be representative (in terms of energy consumption and production capacity) for their specific sub-sector. The major activity of component 2 will be the introduction of the energy management system in the two

companies as well as the elaboration of recommendations for concrete energy efficiency improvements. In component 3 best practices will be developed and disseminated.

A pipe-line GIZ-SAEES project in Industrial Energy Efficiency area entitled "Advice on Energy Management in the Industry (Donetsk) in Ukraine" (2012-2014). The project aims at mitigating GHG emissions through the introduction of efficient recourse and energy management in industry. The target group is selected enterprises from the metallurgical, mechanic engineering, isolation sector from Donetsk region as well as Industrial Association of Ukraine. Planned activities encompass among others the following: launch of Energy Management System into three enterprises, preparation of relevant documentation, training (enterprise staff and internal auditors), dissemination and exchange of experience between the enterprises, provision of technical assistance through experts in relevant production areas. During the PPG stage, alignment with this project will be examined.

The Project will use the results of analytical reports on the Ukrainian legislation on energy efficiency which were received in a framework of the following projects implementation: "[Support to Kyoto Protocol Implementation \(SKPI\)](#)" and "[Identification and Promotion of Energy Efficiency \(EE\) Investments](#)" of INOGATE Programme (Programme is an international energy co-operation programme between the European Union and the Partner Countries of Armenia, Azerbaijan, Belarus, Georgia, Kazakhstan, Kyrgyzstan, Moldova, Tajikistan, Turkmenistan, Ukraine and Uzbekistan) .

This present Project will broaden and strengthen achievements of the other UNIDO/GEF Project "Improving Energy Efficiency and Promoting Renewable Energy in the Agro-Food and other Small and Medium Enterprises (SMEs) in Ukraine", which is focused on implementation and development of the necessary market economy instruments for energy efficiency enhancement and broadening of the renewable energy technologies usage in agro-food sector.

In summary, there is a good potential of synergy between these projects and the one proposed here.

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

The GEF Council document GEF/C.31/rev.1 gives UNIDO comparative advantage for this Strategic Program under the Intervention Type Capacity Building/Technical Assistance. The project has a strong focus on promoting Industrial Energy Efficiency through accelerating the adoption of energy management system standards.

UNIDO Industrial Energy Efficiency programme builds on more than three decades of experience and unique expertise in the field of sustainable industrial development. Combining the provision of policy development support services and capacity-building for all market players, UNIDO aims at removing the key barriers to continuous improvement of energy efficiency in industries and ultimately transforming the market for industrial energy efficiency.

The UNIDO IEE programme assists developing countries and emerging economies by providing policymaking technical assistance, institutional capacity-building and market transformation support instrumental to the adoption and implementation in industry of energy management system standard.

Therefore UNIDO is well placed to implement this project because of its experience and expertise in promoting energy management system standard. UNIDO contributed significantly to the development of the ISO 50001 energy management system standard.

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

UNIDO will contribute in total US\$ 250,000 including US\$ 125,000 in-kind and US\$ 125,000 in grant for co-financing the preparation of the project and its implementation.

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:

During the period 2012 to 2016, the UNDAF prescribes that the UN will support the Government of Ukraine on issues relating to climate change and the environment within 3 areas; (1) Adopting policy frameworks and mechanisms to ensure reversal of environmental degradation, climate change mitigation and adaptation, prevention and response to natural and man-made disasters, (2) Reducing energy, resource and carbon intensity of economy through the application of energy efficient technologies, renewable and alternative sources of energy and (3) Creating mechanisms for sustainable management of natural resources.

The proposed programme is in line with the objectives set under the UNDAF and with UNIDO's role and contribution.

UNIDO started implementing projects in the Ukraine in general since the year 1993 and in the area of environmental and resource efficiency since the year 2003. During this time UNIDO developed a good partnership with local authorities, private sector, multilateral institutions and other stakeholder. In 2011 UNIDO started implementation of the GEF-4 EE/RE project in Ukraine.

UNIDO is in a good position to initiate the preparation and the implementation of the present project. UNIDO will be responsible for the implementation of the project and the fulfillment of the project targets and objectives. In doing so, UNIDO will closely coordinate with KPI, the Ministry of Economy and all other relevant project partners. A project manager at UNIDO headquarters will be responsible for the oversight and monitoring of the project and will report to the GEF on the progress in project implementation according to the GEF reporting schedule. The project manager will initiate the procurement and recruitment actions and manage the teams of international and national experts working on the project.

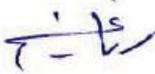
A project management will be set up through the project. The PMU will be hosted by KPI (Institute for Energy Saving and Energy Management of the National Technical University of Ukraine "Kyiv Polytechnical Institute"). The PMU will be responsible for the day to day operation of the project on the ground and will report directly to the project manager at UNIDO. It will consist of a national project coordinator, a project assistant and a technical specialist. Further expertise required will be hired through the technical assistance components to ensure that the technical aspects of the project are addressed.

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)
Mr. Vadym Pozharskyi	GEF Operational Focal Point, Head of Department for International Cooperation and European Integration	MINISTRY OF ENVIRONMENTAL PROTECTION OF UKRAINE	10/03/2011

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	Telephone	Email Address
Mr. Dmitri Piskounov, Managing Director, PTC UNIDO GEF Focal Point		December 15, 2011	Ms. Rana Ghoneim, Project Manager, PTC/ECC/IEE 	+ 431 26026 4356	R.Ghoneim@unido.org