



REQUEST FOR CEO ENDORSEMENT

PROJECT TYPE: Full-sized Project

TYPE OF TRUST FUND: GEF Trust Fund

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PART I: PROJECT INFORMATION

Project Title: Removing Barriers to increase investment in Energy Efficiency in Public Buildings in Ukraine through the ESCO modality in Small and Medium Sized Cities			
Country(ies):	Ukraine	GEF Project ID: ¹	5357
GEF Agency(ies):	UNDP	GEF Agency Project ID:	4114
Other Executing Partner(s):	Ministry of Regional Development, Construction, Housing and Communal Services, State Agency on Energy Efficiency and Energy Saving, and Ministry of Ecology and Natural Resources, City Administrations of ten small and medium sized cities	Submission Date: Resubmission Date:	16 th June 2015 11th December 2015
GEF Focal Area (s):	Climate Change	Project Duration(Months)	60
Name of Parent Program (if applicable): ➤ For SFM/REDD+ <input type="checkbox"/> ➤ For SGP <input type="checkbox"/> ➤ For PPP <input type="checkbox"/>	N/A	Project Agency Fee (\$):	520,600

A. FOCAL AREA STRATEGY FRAMEWORK²

Focal Area Objectives	Expected FA Outcomes	Expected FA Outputs	Trust Fund	Grant Amount (\$)	Cofinancing (\$)
CCM-2	<p>Outcome 2.1: Appropriate policy, legal and regulatory frameworks adopted and enforced</p> <p>Outcome 2.2: Sustainable financing and delivery mechanisms established and operational</p>	<p>Output 2.1: Energy efficiency policy and regulation in place</p> <p>Output 2.2: Investment mobilized</p> <p>Output 2.3: Energy savings achieved</p>	GEF TF	5,480,000	56,673,195
Total project costs				5,480,000	56,673,195

B. PROJECT FRAMEWORK

¹ Project ID number will be assigned by GEFSEC.

² Refer to the [Focal Area Results Framework and LDCF/SCCF Framework](#) when completing Table A.

Project Objective: To transform the market for investments in energy efficiency in public buildings in Ukraine, working initially in 10 small and medium sized cities, catalysing significant additional investment for that purpose using the ESCO modality and introducing both city and nationwide energy management information systems.

Project Component	Grant Type	Expected Outcomes	Expected Outputs	Trust Fund	Grant Amount (\$)	Indicative Co-financing (\$)
1. Regulatory, Legal, and Policy Framework for Energy Efficiency in Public Buildings.	TA	Strengthened monitoring and enforcement mechanisms for Energy Efficiency in public buildings.	<p>1.1 Signature of MoUs with 10 small and medium sized cities in Ukraine to work on ESCO and energy management</p> <p>1.2 Support for preparing Sustainable Energy Action Plans (SEAPs) in 10 selected small and medium sized cities, and assistance signing EU Covenant of Mayors (as required)</p> <p>1.3 Development and adoption of secondary legislation to support new law including financial incentives provided to ESCOs to invest in Energy Efficiency in public buildings such as income tax holiday for a specific period of time, duty and tax exemptions on equipment and services they provide.</p> <p>1.4 Regulations to support the development of</p>	GEFTF	1,040,000	4,000,000

			<p>secondary market for EPC contracts in order that the contracts can be sold to investors to provide for further liquidity and additional investment</p> <p>1.5 Regulations to support the adoption of mandatory nation and city wide energy management for public buildings</p>			
2. Innovative Financing Mechanism and technical support to ESCOs to promote investment in Energy Efficiency in public buildings using the EPC modality.	TA	Innovative Financing Mechanism is adopted and capacity development is provided to banks and to ESCOs and banks to promote investment in support of Energy Efficiency in public buildings using the EPC modality.	<p>2.1 Financial Support Mechanism (FSM) – with IFC is available to support EPC contracts in at least 10 small and medium sized cities in Ukraine</p> <p>2.2 Development of model EPC municipal procurement tender documentation under the financial support mechanism</p> <p>2.2 MOUs signed with banks that are active in small and medium sized cities in Ukraine to use the financial support mechanism</p> <p>2.3 Capacity development of and support to banks with standardized banking products to support development of ESCO</p>	GEF TF	700,000	8,000,000

			<p>market using the EPC modality</p> <p>2.4 Capacity development of and technical support to ESCOs to implement energy efficiency measures in public buildings using the EPC modality.</p>			
3. Pilot Energy Efficiency Projects in Public Buildings in at least 10 cities using the EPC modality.	TA + INV	Pilot projects in at least 10 selected public buildings, using the EPC modality, to demonstrate energy and cost-saving potential of energy efficient measures.	<p>3.1 ESCO Market Help Guide prepared to support the implementation of EPC energy savings projects in Ukraine in public buildings</p> <p>3.2 At least 20 energy audits carried out in schools, kindergartens, hospitals, and administrative government buildings</p> <p>3.3 At least 10 Demonstration projects in schools, kindergartens, hospitals and administrative government buildings, using the EPC modality in 10 different small and medium sized cities in Ukraine.</p> <p>3.4 Capacity development of designated “Energy Managers” to monitor energy use in public buildings through an Energy Management Information System (EMIS) and propose/implement</p>	GEFTF	<p>1,130,000 (TA)</p> <p>1,250,000 (INV)</p>	<p>2,000,000 (TA)</p> <p>38,000,000 (INV)</p>

			necessary energy efficiency measures. 3.5 At least 20 walk-through days with senior public officials to view the demonstration projects.			
4. Institutional Strengthening and Awareness through implementation of nation-wide energy management information system (EMIS)	TA	<p>Institutional basis and nation-wide Energy Management Information System (EMIS) for Energy Efficiency in public buildings are in place including National Database on Energy Consumption in All Public Buildings.</p> <p>Documented, disseminated and institutionalized project results providing a basis for further replication</p>	<p>4.1 Fully mandated and capacitated state agency with a responsibility to monitor and enforce the energy savings and CO₂ emission reductions in public buildings and with approved annual budget to carry out this function.</p> <p>4.2 An approved national energy audit program for promoting larger number of energy audits of public buildings with approved budget.</p> <p>4.3 Agreed methodology and sustainable institutional arrangements for annual monitoring of energy efficiency in public buildings through implementation of a single nation-wide EMIS.</p> <p>4.4 National Database of public buildings re. energy consumption established and energy monitoring and information management system put in place to eventually cover all</p>	GEFTF	<p>600,000 (TA)</p> <p>500,000 (INV)</p>	<p>773,195 (TA)</p> <p>3,000,000 (INV)</p>

		<p>public buildings in Ukraine</p> <p>4.5 City Wide Energy Consumption Databases for Public Buildings established and maintained for 10 small and medium sized cities in Ukraine</p> <p>4.6 Energy Management Information Systems implemented in at least 10 selected Ukrainian small and mid-size cities which includes installation of meters in all public buildings in the selected cities</p> <p>4.7 Project experience, best practices and lessons learned documented, published and available on website.</p> <p>4.8 International Conference on Energy Efficiency in public buildings in Ukraine.</p>			
Sub-total				5,220,000	55,773,195
Project Management Cost (PMC) ³ (includes \$107,500 of direct project costs)			GEFTF	260,000	900,000 (includes 200,000 from UNDP)
Total Project Cost				5,480,000	56,673,195

³ To be calculated as percent of subtotal.

C. SOURCES OF CONFIRMED COFINANCING FOR THE PROJECT BY SOURCE AND BY NAME (\$)

Please include letters confirming cofinancing for the project with this form

Sources of Co-financing	Name of Co-financier (source)	Type of Cofinancing	Cofinancing Amount (\$)
National Government	State Agency of Ukraine for Energy Efficiency and Energy Saving (SAEEES)	In-Kind	\$13,348,416 ⁴
Bilateral Aid Agency	GiZ – Energy Efficiency in Municipalities	Cash	\$4,424,779 ⁵
Bilateral Aid Agency	IFC – Ukraine Residential Energy Efficiency Project	Cash	\$6,500,000
Bilateral Aid Agency	USAID – Municipal Energy Reform Project	Cash	\$14,500,000
International Organisation	UNDP	Cash	\$200,000
International Organization	UNDP	In-Kind	\$700,000
Private Sector	CEP LLC	Cash	\$6,000,000
Private Sector	TST-Service LLC	Cash	\$6,000,000
Private Sector	ILION LLC	Cash	\$5,000,000
Total Co-financing			\$56,673,195

D. TRUST FUND RESOURCES REQUESTED BY AGENCY, FOCAL AREA AND COUNTRY⁶

GEF Agency	Type of Trust Fund	Focal Area	Country Name/ Global	(in \$)		
				Grant Amount (a)	Agency Fee (b) ⁷	Total c=a+b
UNDP	The GEF Trust Fund	CCM - 2	Ukraine	\$5,480,000	\$520,00	\$6,000,600
Total Grant Resources				\$5,480,000	\$520,600	\$6,000,600

F. CONSULTANTS WORKING FOR TECHNICAL ASSISTANCE COMPONENTS:

Component	Grant Amount (\$)	Cofinancing (\$)	Project Total (\$)
International Consultants	\$1,276,000	\$556,000	\$1,832,000
National/Local Consultants	\$580,000	\$1,120,000	\$1,700,000

G. DOES THE PROJECT INCLUDE A “NON-GRANT” INSTRUMENT? No

(If non-grant instruments are used, provide in Annex D an indicative calendar of expected reflows to your Agency and to the GEF/LDCF/SCCF/NPIF Trust Fund).

⁴ Based on UN Operational Rates of Exchange on 1st June 2015, the co-financing amount of State Agency of Ukraine for Energy Efficiency and Energy Saving (SAEEES) as of 295,000,000 hryvnias.

⁵ Based on UN Operational Rates of Exchange on 1st June 2015, the co-financing amount of GiZ as of EUR 4,000,000.

⁶ 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. PMC amount from Table B should be included proportionately to the focal area amount in this table.

⁷ Indicate fees related to this project.

PART II: PROJECT JUSTIFICATION

A. DESCRIBE ANY CHANGES IN ALIGNMENT WITH THE PROJECT DESIGN OF THE ORIGINAL PIF⁸

The project has been designed with a main focus on utilising the ESCO modality, utilising EPC contracts, to catalyse and implement energy efficiency measures in public buildings and a secondary focus on energy management including developing and putting in place and getting adopted a nation wide national energy consumption database for public buildings and a nation wide energy management information system. To accurately reflect this, the project title has been amended to include “through the ESCO modality” and the words ‘in Small and Medium Sized Cities’ have been added. The reason for the increased focus on ESCOs in the full project documentation is that in May 2015 the Ukrainian Government adopted a set of new laws to promote the ESCO business model and energy performance contracts (EPC) and this gives strong hope to the premise that private financing can indeed be brought to the table to finance energy savings measures in public and private buildings in Ukraine. The new law makes it possible to sign multi-year contracts with municipalities in Ukraine for energy savings and to provide performance guarantees and receive financial remuneration from energy savings over a number of years. This new offers the promise that after many years, a real market for ESCOs can finally operate in Ukraine. A significant change from the PIF stage is that the new laws on ESCO have been adopted in Ukraine in May 2015. Due to the existence of the new laws, support under component 1 is therefore adjusted to focus on support for secondary legislation to support the development of the ESCO market in Ukraine and for support for regulations to support a national and city wide energy consumption database and national and city wide energy management information systems.

The project concept and design during the PIF formulation some 2 years ago were based on the premise that Ukraine would explore innovative financial incentives to encourage public sector organisations to invest in energy efficiency (EE) in public buildings of which there are over 50,000 in Ukraine. This premise was valid then and is still valid now. What has changed over the past two years is the economic climate in the country. Armed conflict in eastern Ukraine combined with economic stability throughout the country has meant that interest rates are now much higher and since 2014, investors have been leaving the country in large numbers. In addition, it was erroneously assumed that Ukraine could explore the opportunity to develop a NAMA (nationally appropriate mitigation action) for energy efficiency in public buildings. Ukraine is an Annex 1 Party to the United Nations Framework Convention on Climate Change (UNFCCC) and, as such, is not eligible for carbon finance support under NAMAs. However, Ukraine does qualify for carbon finance under the Joint Implementation mechanism of the Kyoto Protocol second commitment period and the government in mid 2015 has abolished the State Environmental Investment Agency (SEIA) meaning that it does not make sense to include carbon market related activities in the project. If, however, the carbon market happens to recover during (and beyond) the project lifetime, this issue will get re-visited under UNDP’s adaptive management procedures and all efforts will be made to utilize additional resources from the carbon market that the Government could add to existing ones to expand activities and increase investment in energy efficiency in public buildings using the revitalized carbon market.

In addition, the PIF had earmarked the inclusion of “government-owned multi-apartment buildings” for coverage under the project. However, during implementation of the PPG, the Ministry of Regional Development, Construction, Housing and Communal Services confirmed that 95% of apartment buildings in the country are privatised, with the remaining 5% of apartments/apartment buildings being still State-owned and presently utilised

⁸ For questions A.1 –A.7 in Part II, if there are no changes since PIF and if not specifically requested in the review sheet at PIF stage, then no need to respond, please enter “NA” after the respective question.

by Government officials; these will gradually also get privatised. Hence, the remaining 5% of apartments/apartment buildings which are still in the public domain are excluded from consideration under the present project.

Another change from the PIF to the full project documentation is that it was previously not clearly specified that the project will focus on small to medium sized cities in Ukraine and in particular the reason for this is that those cities that are not the focus of other donors. Typically, other donors including IFIs have been working in Ukraine in larger cities with populations of 400,000 inhabitants or more and lending to those larger cities where they have a track record of successful lending. These 10 cities will be selected at the start of the project, shortly after the hiring of the project manager, with the main criteria being that other donors are not active in these cities working in the area of energy efficiency in public buildings and the commitment of the city towards signing EU Covenant of Mayors, preparing a Sustainable Energy Action Plan (SEAP), setting energy efficiency targets, appointing energy managers, installing meters in public buildings, developing a city wide energy consumption database and putting in place an energy management information system (EMIS). Annex 7 of the project document provides more details on the criteria for selecting cities. Ukraine has 101 cities with populations of 50,000 inhabitants or more, of which 11 cities have populations of 400,000 inhabitants or more. For the purposes of this project, a small and medium sized city is a city that has a population of between 50,000 inhabitants and 400,000 inhabitants. It is estimated that there are 90 such cities in Ukraine and most of these cities have no other donors working with them. International Financial Institutions (IFIs) typically focus all their attention in Ukraine related to energy sector activities to support for larger cities where there are better prospects for closing large municipal loans. In smaller cities, there is very likely that municipal officials have very little familiarity with the concepts of ESCO and energy management. The project can therefore play an important role in educating municipal officials and local banks about the benefits and opportunities associated with the ESCO business model and also with energy management with the goal of helping ESCO related lending to occur.

Finally, the PIF earmarked 50 public buildings for energy audits, with some 5 to 8 of them to eventually being targeted for implementation of energy efficiency measures as pilots. During implementation of the PPG, it was felt that it would not be optimum use of project resources by undertaking 50 audits during the 5-year project life and having only 5-8 public buildings undergoing rehabilitation/refurbishing as pilots to make them energy efficient. Consequently, in discussions with project authorities, the decision was made to reduce the number of audits to 20 and increase the number of pilots to 10 in 10 different cities, thus implementing energy efficiency measures in 50% of the public buildings that would undergo energy audits utilizing project budget resources. Recognizing that ESCOs need economies of scale to make EPC investments worthwhile and profitable, the EPC building retrofits that receive some grant support in each of the 10 cities will, where possible, also be bundled with other municipal funding available for retrofits in order to achieve sufficient economies of scale and retrofit more than one building at the same time to make it interesting for ESCOs to undertake EPC in these cities. In summary, it will be important that the EPC tenders may involve the retrofit of more than one public building at one time and it will be important to involve local banks also through the financial support mechanism. The first selected building could benefit from GEF grant assistance but the additional buildings will need to be undertaken with commercial financing and/or the support of the financial support mechanism.

A.1 NATIONAL STRATEGIES AND PLANS:

The need for energy independence is very often the subject of discussions at the highest levels of Government, especially when these target Ukrainian domestic and foreign policy; consequently, its energy policy undergoes adjustments in such a manner so as to help support it in keeping this course. In 2012 (figures for 2013 will be released by the National Statistics Service in December 2014), for example, the country's total primary energy supply (TPES) of 132.5 million tons of oil equivalent (Mtoe) (Fig. 1) was largely based on natural gas (34.8%), coal (34.6%), nuclear (19.2%) and oil (9.6%), with the remaining 1.8% supplied by biomass, hydro and wind power. Even though domestic

production covered a substantial share of its energy needs, Ukraine still had to import some 35% of its needed energy resources (amounting to approx. 46 Mtoe), primarily natural gas and oil. This had and continues to have the net effect of putting an ever increasing burden on the national economy due to increasing energy prices and poses a threat to national energy security.

For a detailed description of the “National Strategies and Plans, please refer to the UNDP Prodoc, Section 1 “Situation Analysis”, pages 5-6.

A.2 GEF FOCAL AREA AND/OR FUND(S) STRATEGIES, ELIGIBILITY CRITERIA AND PRIORITIES:

This project is fully consistent with GEF-5, Climate Change Objective 2: "Promoting Market Transformation for Energy-Efficiency in Industry and Buildings". It will promote the market for implementing energy efficiency measures in public buildings.

For a detailed description of the GEF focal area strategies, please refer to the UNDP Prodoc, Section 2 “Project Rationale and Policy Conformity” and “Country Ownership: Country Eligibility and Country Drivenness”, pages 14 – 22.

A.3 THE GEF AGENCY’S COMPARATIVE ADVANTAGE:

UNDP has wide experience of working in energy efficiency projects in the buildings sector in Eastern Europe and CIS region, and has developed considerable experience in this area, having successfully developed over 30 projects aimed at removing barriers to energy efficiency. UNDP also has considerable experience working in smaller cities, including in towns and communities and in Ukraine is currently implementing the \$30 million Community Based Approach (CBA) project, which includes a focus on energy-efficiency in smaller towns and communities in Ukraine.

In particular, UNDP has considerable success with developing national energy consumption database for public buildings and national energy management information systems (EMIS). In Croatia, the highly satisfactory rated UNDP GEF energy efficient lighting project which finished in 2013 successfully launched and deployed a national energy management information system throughout Croatia which has been used as a model for replication and duplication in other countries.

UNDP also has experience in successfully establishing financial support mechanisms for renewable energy and for energy efficiency. In Georgia, UNDP supported the establishment of a revolving fund for small hydro projects in partnership with the German Development Bank, KfW. In Serbia, UNDP is working with the EBRD and with commercial banks to support a financial mechanism to give incentives to biomass projects for electricity generation.

In the recently-approved UNDP-GEF Ukraine bioenergy technologies project in the municipal sector which started in late 2014, UNDP is working with the IFC to design and implement a financial support mechanism which will provide incentives to invest in substituting existing gas-fired municipal boilers with biomass fuel. It is envisaged that this mechanism will be expanded to cover energy savings projects in addition to renewable energy projects and that the same financial support mechanism can and will be used to assist this project, in particular by working with local banks to facilitate their borrowing and lending for ESCO type activities in buildings.

For a detailed description, please refer to “Section B.3: The GEF Agency’s comparative advantage for implementing this project” of the PIF, pages 15 - 16.

A.4 THE BASELINE PROJECT AND THE PROBLEM THAT IT SEEKS TO ADDRESS:

The Ukrainian economy is characterized by high-energy consumption and high carbon intensity throughout almost all sectors of the economy, including both residential and public buildings. In 2005, the level of carbon intensity in of the Ukrainian economy topped the chart worldwide at 3.67 kg of CO₂/\$ of GDP, 3 times as much as that in the US

and almost 7 times that of France. As per Ukraine's Report on Demonstrable Progress under the Kyoto Protocol (2006), that level was expected to drop down to 2.6 kg of CO₂/\$ of GDP by 2015. The main reasons for the high levels of carbon intensity include obsolete and outdated capital stock in the power generation and industrial sectors dating back to when Ukraine was part of the Soviet Union, as well as old and outdated building stock in the government, private and communal sectors. Ukraine has substantial unrealised energy efficiency potential; the IEA's Ukraine 2012 estimate puts it at 20-30% of the energy supply - a magnitude that should ensure that it is accorded a high priority in a sustainable energy policy. Also, STAP's study on "Climate Change: A Scientific Assessment for GEF" (STAP, 2012) shows that "in moderate and cold climates, it is feasible and cost-effective for both new buildings and retro-fits to reduce heat energy needs by 70 to 90% compared to standard practice".

The baseline problem that this project seeks to address is that the investment required to promote and stimulate large investment in energy savings projects in public buildings in Ukraine is in the billions of dollars. Yet, the public resources available for such investments are minimal and not nearly enough for the scale of investment required. Recognizing this fact, the Ukrainian government has adopted in May 2015 a new law on ESCO to promote private investment in energy savings projects in both industrial, commercial and buildings sectors. The advantage of the ESCO approach for energy efficiency in buildings is that private capital is used to rehabilitate the building and the investor(s) take their return from the guarantee of savings and the return of a percentage of money saved from the energy saved calculated over a period of a number of years.

In the baseline project, the attention that is being paid to energy-efficiency in public buildings continues to develop in a haphazard manner. The focus of other donors for energy efficiency in public buildings continues to be on larger cities. Smaller and medium sized cities will continue to be neglected when it comes to innovative approaches for introducing greater energy savings measures in public buildings. ESCO projects will, for the most, part be likely to follow a Quasi-ESCO model and energy management will not be done at a national level following a single standardized approach. In summary, without this project ESCO and energy management in public buildings will not be carried out to such a high level. Over the past two years in Ukraine, the economic situation has been getting worse. The country has been pre-occupied with the conflict in the eastern part of Ukraine and with security related issues.

In Ukraine, local/commercial banks have not been actively engaged in financing ESCOs for projects. As a result, the ESCO market is hindered financially. Issues include high interest rates on loan, absence of legislative incentives, lack of a liberalized energy market, short of information on ESCOs to local banks, lack of possibility to receive local guarantees, and insufficient support for servicing energy saving measures.

There have been high interest rates and significant currency devaluation, government has significant budget deficits and significant reforms are ongoing. This project seeks to address a gap in the market for energy efficiency in Ukraine. This gap in the market is that the ESCO market still does not function effectively and energy management is still not being done properly in most Ukrainian cities. There remains no national registry of public buildings in Ukraine containing energy consumption data and no national energy management information system.

For a more detailed description of the baseline project and the problem that it seeks to address, please refer to the UNDP Prodoc, Section 1.1 "Baseline Situation and Problem to be addressed", pages 6 - 13 and Section 1.2 "Barriers to Energy Efficiency in Public Buildings in Ukraine", pages 13 -14.

Innovation, Sustainability, Potential for Scaling Up and Market Transformation

The project is innovative in that it has really studied what has worked with ESCOs and with financing mechanisms in other countries in the region in order to learn from those experiences in order to best learn the lessons as well as looked at the previous difficult history of ESCOs in Ukraine. There is much greater analysis in the revised proposal of what needs to be done in order to make the ESCO market work. Sustainability of the project will be ensured by the

success of the new secondary legislation which will facilitate ESCO market development which can and will continue to operate after the lifetime of the project, without any donor support. Secondly, the financial support mechanism to be developed UNDP and IFC will continue to operate beyond the lifetime of this project meaning that there is a long term commitment. ESCOs have enormous potential for scaling up in Ukraine. Once the business model of EPC has proven that it can work and is profitable at an acceptable level of risk, many more new ESCO companies will enter the market and sign EPC with municipalities. The ESCO market will continue to grow and to thrive even without donor support. ESCOs (if and when they work) will transform the market for energy efficiency because ESCO solves the problem of scarce public resources not being enough for the huge investment needs to EE in public buildings. Once private financing is available and once local commercial banks in Ukraine can lend to ESCOs using the EPC as the main form of security, then the level of investment flowing into the sector will be much greater.

Financial Support Mechanism

The main purpose of having a financial support mechanism on this project is to support local/commercial banks in providing lending for ESCO activities in Ukraine in the area of public buildings, using energy performance contracts (EPC).

Investment in energy efficiency on the demand side (and also on the supply side) makes economic sense to the consumer of energy services, is beneficial to the environment and assists in postponing investments in new capacity at the utility level. However, such projects often require to be supported with financial incentives, at least initially, because they present certain levels of uncertainty. The degree to which cost and risk factors apply varies according to technology and geographical location and investors expect to get a higher return on their investment to compensate them for taking on additional financial risks, or the financial risks need to be reduced through providing more revenue certainty.

Then, there is the technological uncertainty depending on the time it takes for clean technologies to become widely available: the more widespread their availability, they cheaper they become. Finally, there is the uncertainty related to changing climatic conditions that can affect, for example, the expenses incurred for heat supply depending on the fluctuations of outdoor temperatures. To add to all these, the biggest uncertainty to the investor/provider of debt finance relates to the fact he would require guarantees of payment for services provided and in the past many investors have not been satisfied with municipal guarantees of payment and have requested sovereign guarantees.

In the case of Ukraine, financial support to investors/ESCOs in energy efficiency in public buildings can take the form of either an upfront investment grant or a buy-down in the level of uncertainty that project developers will get paid for the services they supply to public buildings or both. As per the WB/IFC “Doing Business 2014” data, Ukraine ranks 128 out of 189 economies in protecting investors and, in discussions with private project developers, it was clear that this concern was very much present in their minds. In their view, as investing in energy efficiency activities is fairly well-known among lending institutions throughout the world, securing loans in the international finance market for investment in this area does not pose much of a problem, as long as the legal framework is in place for the private sector to invest in public buildings, e.g. in the form of an Energy Service Company (ESCO)

However, of real concern is the probability that investors/ESCOs may not get paid for the services they supply to these public buildings. Investments in energy efficiency are made for a contractual period of approx. 10 years with the ESCO (although the useful life of the equipment is normally 20 years) and any doubt in the minds of developers regarding the business climate in a particular country will make them reluctant to invest

Having in place proper energy management systems which allow for the accurate energy monitoring and reporting helps to ensure that investors are paid back. In fact, what makes the project innovative is the combined focus on both

ESCO and on energy management. ESCOs are by definition innovative as they provide both a technical + financial solution at the same time. Proper energy management is an absolute must for the ESCO business model and for energy performance contracts to operate effectively, it is essential for public buildings to include metering and to have energy efficiency targets, energy managers, and energy management systems in place.

Project analysis and investment requires a critical and highly specialized skill that directly impacts the bottom line of the project in terms of economic and financial terms. Hence, when analysing an ESCO proposal as a prospective investment, it is vital to make sound economic evaluations of project, its design and alternatives in order to accurately estimate the operating expenses, ensuring that the return on investment is successful.

The viability of an ESCO project (for any project, for that matter) depends on several analyses, viz. technical, financial, economic and environmental. In this connection, the feasibility study constitutes the basis for the success of the project and is prepared to present an in-depth techno-economic analysis so that ESCO can make a proper investment decision; in this lies a solid financial analysis that includes a discounted cash flow (DCF) to evaluate the attractiveness of the investment, the determination of the net present value (NPV) and internal rate of return (IRR), taking into account the debt/equity ratio. Typically, when looking at a specific company/ESCO, a financial analysis will focus on the income statement, balance sheet, and cash flow statement. In addition, one key area of financial analysis involves extrapolating the company's past performance into an estimate of the company's future performance, while there cannot be any guarantee that the future performance will materialise. The result of this analysis will show the preferred solution that is financially feasible and economically viable.

In order to increase the scope for large scale investment in energy-efficiency in public buildings, UNDP will partner with IFC on component 2 of the project which involves the detailed design and implementation of the financial support mechanism.

IFC has indicated and confirmed its interest to assist in operationalising the FSM including its development and filling with necessary financial resources and has provided UNDP with a co-financing letter for Us\$6,500,000. The experience of IFC in working with the private sector and its track record in the area of energy-efficiency will be very important during project implementation to work with potential ESCOs to undertake financial analyses of the proposed investments and to provide them with commercial financing solutions. The work of IFC will include designing an appropriate economic and financial analysis programme that will be utilised to provide support to the ESCO to determine the viability of a project on the basis equity, debt, any grant, interest rate, etc and supporting with the development of the municipal EPC tender procurement package for the 10 selected cities.

IFC has an office of 60 professionals in Kiev, Ukraine who focus on financing for development. Within this team possesses a strong team of 4 international staff who specialize on development of FSM in energy-efficiency and who have had a successful track record and results from investing in energy-efficiency in Ukraine.

Work is ongoing between UNDP and IFC on the design of this financial support mechanism which will cover support for both renewable energy and energy-efficiency investments in Ukraine. In particular, a main focus of the financial support mechanism will be directed at capacity building, training, and support for local banks with the goal of facilitating their ability to lend for ESCO type activities.

For a more detailed description of the “Financial Support Mechanism”, please refer to UNDP Prodoc Section 2 “Strategy”, pages 14 -18 and, for Project Components, please see “Project objective, outcomes and outputs/activities”, pages 22- 25.

A.5 INCREMENTAL/ADDITIONAL COST REASONING

It is expected that implementation of energy efficiency activities under this project will result in an indirect reduction of 1,440,000 tCO₂ over the 20-year lifetime of the energy efficiency equipment installed arising from the nation wide operationalization of Energy Management Information System. Finally, to develop the confidence of public building administrators in the whole process, the project will implement 10 pilots selected under a competitive process and in addition, further investments can be expected once the project implements an EMIS nation wide and makes sure it is operational in at least 20 cities throughout Ukraine.

Without this project, energy management and ESCO activities would be very unlikely to take place in small and medium sized cities in Ukraine. Organizations such as World Bank, EBRD, and IFC would continue to support large cities with whom they already have considerable experience and a track record of working with. Only the large cities, which are already receiving assistance would likely have comprehensive energy management information systems in place by the end of the project. Smaller and medium sized cities would continue not to employ the EPC contracting modality and new investments in energy savings projects will be limited and in energy savings projects using the ESCO modality will likely be zero. The combined focus on Energy Management Systems and ESCO market development in Ukraine is innovative in that it is new and has not really been tested on both. Other donors work on ESCO market development or on energy management systems but nobody is currently supporting a combined and integrated approach to ESCO market development and energy management.

The GEF/UNDP can address the issues related to financial barriers for local/commercial bank financing and remove the barriers that lock commercial banks in financing ESCOs. This will be done through developing a tailor made training and capacity building programme for local/commercial banks which includes specific banking products aimed at facilitating lending for EPC contracts and through capacity building, training, and awareness activities for banks with the goal of having them more familiar/comfortable with lending for ESCO activities in order that they are more easily able to lend for financing of ESCO projects in public buildings in Ukraine.

The cost-effectiveness of the approach comes from making sure the ESCO projects using EPC are integrated into the pilot demo activities. In order to benefit from the reduction in energy consumption in public buildings, the project proposes to first focus on the 10 buildings that are identified for implementation as pilots, working in 10 small and medium sized cities in Ukraine that have signed MoUs with UNDP to cooperate on ESCO market development and energy management. This will enable these buildings to enter into agreements with ESCOs to undertake full energy audits, put in place comprehensive energy management information systems, prepare feasibility studies and business plans and have fully-signed EPC contracts to implement the necessary energy efficiency measures. Following this, the project will target the remaining 10 buildings for energy audits and, it is expected, that discussions between the buildings managers and potential ESCOs would have sufficiently advanced, leading to implementation of energy efficiency measures to commence soonest. The experience gained by ESCOs with implementing the pilots through EPC contracts will facilitate their scaling-up of energy efficiency activities in public buildings using the same modality and beyond the 5-year project life-time. It is therefore hoped and envisaged that by the end of the project, significantly more than 10 public buildings in Ukraine will have been supported using a full ESCO approach.

Sustainability is also encouraged by the project strategy. From a technical point of view, the viability of implementing energy efficiency measures in buildings using the ESCO approach has been proven in the international market, both in the context of developed and, to some extent, developing countries. ESCOs are, by definition, sustainable if they work because they invest private capital and not public money. They have the ability to reinvest revenues and profits into new energy savings projects thereby creating a sustainable business model. Even in Ukraine, several private businesses/building owners have implemented such measures on their own in order to both reduce their expenditures for energy services and to go “green”, probably in that order but not using EPC. Some public buildings in Ukraine have also gone the “energy efficiency way” with the support of donors. However, in order to accelerate the process and recognizing the limitations of using the public budget for retrofits, especially in view of the difficulties that the country faces to meet the ever-increasing energy

needs of its population related to old and inefficient building infrastructure stock. Hence, the project will bring a new paradigm shift that will facilitate investment in energy efficiency in public buildings on the part of private investors through the ESCO modality involving EPC contracts and at the same time by introducing modern concepts of energy management. By addressing the non-technical barriers that impede the implementation of energy efficiency measures in public buildings in Ukraine, the project will assist in creating a sustainable niche through strengthening the policy, institutional, legal, regulatory and operational capabilities of the key national institutions, supporting the development of national capabilities and disseminating information. These efforts should ensure the long-term sustainability of energy efficiency measures in the country.

Replicability is also a core focus of the project. The Project's potential for replicability throughout the whole country is very good, since it will adopt a bottom-up approach within the overall policy/investment framework that is envisaged to be developed to promote energy efficiency in public buildings. The replicability of the project approach will rest, to a large extent, on the ability of local banks to lend to ESCOs on the back of signed EPC contracts as this will be a key tool in encouraging and facilitating further investments and further activities by ESCOs in other cities in Ukraine. In particular, the project will focus on the setting of energy efficiency targets by local authorities and the implementation and usage and nationwide adoption of energy management systems. A national database of energy consumption in public buildings in Ukraine will provide a platform for investments. Technical assistance for barrier removal and institutional strengthening to be provided under the project will facilitate such replicability since it will create the required institutional, policy, and technical conditions to enable the generation of renewed investor/ESCO interest for the implementation of additional energy efficiency projects. Moreover, the lessons learned will be of great value to the neighbouring countries sharing similar resource base, should they wish to improve on their experience with the implementation of energy efficiency measures in the buildings stock in their respective countries.

Additional information on cost-effectiveness, sustainability, and replicability is provided in pages 36-39 of the UNDP Project Document.

A.6 RISKS (including climate change, potential social and environmental risks that might prevent the project objectives from being achieved and measures that address these risks).

The main risks in this project are that ESCO market development does not take off and that local/commercial banks are not willing or able to provide financing for ESCO activities, due to high interest rates and concerns over the viability of trust related to payback and guarantees. In addition, ESCOs have concerns which entering into agreement with municipalities that the EPC will continue working for a period of 5 years or more, leading to lack of investor interest and that energy management information systems are not adopted in Ukraine on a nation wide basis. This project is designed in such a way as to best overcome these risks.

For a detailed description of the Risks and how the project aims to address these risks, please refer to the UNDP Prodoc section on "Key indicators, assumptions and risks", pages 25 to 27.

A.7 COORDINATION WITH OTHER RELEVANT GEF-FINANCED INITIATIVES

There are presently 5 on-going climate change projects funded by GEF in Ukraine. Two of them deal with renewable energy (UNDP: Development and Commercialization of Bioenergy Technologies in the Municipal Sector in Ukraine; EBRD: Creating Markets for Renewable Power in Ukraine) and, therefore, have no direct bearing on this project, except that the common thread is GHG emission reduction. The third one (UNDP: Transforming the Market for Efficient Lighting) is directly relevant to this proposed project as energy efficient lighting will definitely be a component in a package of measures aimed at implementing energy efficiency measures in public buildings. The ongoing UNDP GEF Commercialization of Bioenergy Technologies in Ukraine has already started to work with IFC

in the design of a financial support mechanism to support renewable energy projects in Ukraine. It is envisaged that when this project starts the financial support mechanism, currently being designed, can be expanded to also include support for energy-efficiency projects, using the ESCO modality.

The EBRD convenes every three months in Kiev a donor roundtable on energy-efficiency in buildings. This project, represented by either the international CTA and/or the Project Manager and by UNDP staff will be an active participant in all these meetings

For a detailed description under this Section, please refer to the UNDP Prodoc section “Coordination with other GEF-related/non-GEF-related initiatives, pages 36 to 37 and to Annex 8 of the UNDP Project Document.

B. ADDITIONAL INFORMATION NOT ADDRESSED AT PIF STAGE:

B.1 Describe how the stakeholders will be engaged in project implementation.

The main stakeholders in the project will include MinRegion and then 10 City Administrations that the project will work with on ESCO market development and energy management for public buildings. An MoU will be signed between UNDP and the cities who will be working with UNDP on ESCO market development and energy management at the start of the project. The cities will be selected on the basis of their willingness to sign a MoU with UNDP which indicates and details their commitment to EPC (including launching a tender for ESCO procurement for public buildings), their commitment to energy management (including their commitment to appoint energy managers, install meters, introduce an energy management information systems and prepare a city wide energy consumption database for public buildings) and on the basis that other donors are not currently active in the selected city, working in the areas of ESCO and/or energy management in public buildings.

Additional information on stakeholder participation is provided the UNDP ProDoc “Management Arrangements”, page 43 to 45.

B.2 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 benefits.

The project will bring about benefits at both local and national/global levels through reduced environmental and human health threats due to less burning of coal, gas and, to a lesser extent, oil, thus reducing negative environmental impacts. Some of the benefits on the long term are listed below:

- A reduction in imported fuel and, as a consequence, an improvement in the reliability of energy supplies.
- Additional income-generating opportunities for the local economy through the creation of some 3,000 jobs within local communities involved in implementing energy efficiency measures in the public sector.
- Opportunities for the private sector in job creation in the manufacture, installation and servicing of equipment utilised in the energy efficiency chain.
- Long-term savings of billions of dollars to the national economy through the use of energy efficiency measures.
- The project will seek to achieve gender equality through the empowerment of women to fully participate in all project activities and specifically those related to capacity development under the various project components.
- Participation of civil society, through the involvement of NGOs, including women NGOs already mentioned above, and stakeholder consultations, in the decision-making and implementation process related to energy efficiency measures for information and awareness raising activities.

B.3 Explain how cost-effectiveness is reflected in the project design.

Within the requested GEF funding of \$ 5,435,000, \$5.18 million have been allocated for use as technical assistance and investment type activities, in accordance with the Logical Framework. A total of \$255,000 (i.e. less than 5%) of the total budget is dedicated to project management. If we compare the size of the GEF budget per city to the total GEF budget, then it works out to \$543,500 per city selected (for 10 cities), this number works out very favourably with other similar initiatives where the amount budgeted per city to introduce proper energy management and/or ESCO is much higher. Cost effectiveness is included in the project design because by working in multiple cities at the same time it reduces transaction costs and introduces economies of scale.

The project promotes the ESCO business model in Ukraine which is by definition a cost-effective form of project design. Because the ESCO uses private capital to design, invest in and guarantee savings from energy efficiency projects it does not require any public expenditure. This means that the ESCO business model, when it works, is truly both sustainable and cost-effective. GEF funding of \$5,435,000 will have leveraged significantly more additional private sector capital into energy-efficiency measures in public buildings.

The combined direct and indirect global benefits of the project have been assessed at almost 1,449,000 tons of CO₂. With a GEF funding request of \$ 5,435,000, this corresponds to an abatement cost of \$ 3.75 per ton of CO₂ reduced.

C. DESCRIBE THE BUDGETED M & E PLAN:

For detailed description of the M&E Plan, please refer to the UNDP Prodoc, Section 5 “Monitoring and Evaluation” page 45 to 49.

A Project Board, as indicated above, will provide overall guidance to project execution. Private sector investors interested in developing business opportunities in developing and implementing energy efficiency measures/ESCOs and other interested parties will be invited to participate in the meetings of the Project Board, as observers, when required.

UNDP will monitor and report on progress in project implementation in accordance with the UNDP Programme Manual and GEF Monitoring and Evaluation (M&E) guidelines. In undertaking this, it will be supported by a National Project Director, to be designated by MinRegion, a Project Management Unit (PMU) with four full time national staff that will be supported by an international part-time Chief Technical Adviser and the UNDP-GEF Regional Service Centre (RSC) in Istanbul, Turkey. The PMU will have a maximum of five full time positions, an International CTA, a Project Manager, a Task Leader on ESCO Market Development, a Task Leader on Energy Management, and a Project Assistant. The International CTA and the Project Manager will be the lead persons for managing the relationship with IFC. Additional support will be provided by international and national consultants. The PMU will report on relevant progress to the National Project Director and to UNDP on a quarterly basis. Regular monitoring of the project will take place through this reporting mechanism as well as through site visits, as required. It is envisaged that in addition, for component 2 of the project, the standard IFC monitoring and reporting requirements would be applied.

Progress will be measured against targets set out in the Work Plan and indicators defined in the Project Logical Framework. For each of the project components, a detailed monitoring plan will be prepared during project inception. In this connection, a Project Inception workshop will be organized at the start of project activities to review the Logical Framework; specifically detailed means of verification, assumptions, etc. will be revisited and adapted (adaptive project management) as necessary, including measures to track any major project risks and taking into

consideration the situation prevailing in the country. These indicators will draw upon all sources of information, including those of other donors active in the communal services field in the country. Appropriate and specific performance benchmarks will be established prior to project implementation to effectively monitor project progress and to make crucial management decisions.

Annual Tripartite Review meetings (TPRs), with the participation of the project team and stakeholders, will be held to review progress, identify problems, and agree on solutions to maintain timely provision of inputs/achievement of results. The Project Board will review annual work plans as well as provide strategic advice on the most effective ways and means of implementation. Reporting to GEF will be accomplished through Annual Project Reviews (APRs) and Project Implementation Reviews (PIRs).

Additionally, the project will be the subject of an independent mid-term review midway through project implementation and a terminal evaluation at project completion. The independent evaluations will review the relevance, timeliness and impact of project inputs and discuss lessons learned for use in improving the quality of future development interventions with similar activities that could be undertaken in collaboration with other development partners to the project. The results of the terminal evaluation, incorporating the lessons learned, will be disseminated both within and outside Ukraine. All reports will be posted on the project website.

The costs for Monitoring and Evaluation are estimated at \$ 77,000 (Table 10 below). This budget allocation includes activities related to preparing quarterly progress reports, undertaking Project Implementation Reviews, Annual Project Reviews, an independent mid-term review, an independent terminal evaluation, and organizing/participating in Project Board Meetings, as required.

Table 10: Monitoring and Evaluation (M&E) Work Plan and Estimated Associated Budget.

Type of M&E activity	Responsible Parties	Budget US\$ <i>Excluding project team staff time</i>	Time frame
Inception Workshop and Report	<ul style="list-style-type: none"> CTA, National Project Manager UNDP CO, UNDP GEF 	Indicative cost: 12,000	Within first two months of project start up
Measurement of Means of Verification of project results.	<ul style="list-style-type: none"> UNDP GEF RTA/CTA/National Project Manager will oversee the hiring of specific studies and institutions, and delegate responsibilities to relevant team members. 	To be finalized in Inception Phase and Workshop.	Start, mid and end of project (during evaluation cycle) and annually when required.
Measurement of Means of Verification for Project Progress on output and implementation.	<ul style="list-style-type: none"> Oversight by CTA and National Project Manager Project team 	To be determined as part of the Annual Work Plan's preparation.	Annually prior to ARR/PIR and to the definition of annual work plans
ARR/PIR	<ul style="list-style-type: none"> CTA, National Project Manager and team 	None	Annually

Type of M&E activity	Responsible Parties	Budget US\$ <i>Excluding project team staff time</i>	Time frame
	<ul style="list-style-type: none"> UNDP CO UNDP RTA UNDP EEG 		
Periodic status/ progress reports	<ul style="list-style-type: none"> CTA, National Project Manager and team 	None	Quarterly
Mid-term Review	<ul style="list-style-type: none"> CTA, National Project Manager and team UNDP CO UNDP RCU External Consultants (i.e. evaluation team) 	Indicative cost: 25,000	At the mid-point of project implementation.
Terminal Evaluation	<ul style="list-style-type: none"> CTA, National Project Manager and team, UNDP CO UNDP RCU External Consultants (i.e. evaluation team) 	Indicative cost : 25,000	At least three months before the end of project implementation
Project Terminal Report	<ul style="list-style-type: none"> CTA, National Project Manager and team UNDP CO local consultant 	0	At least three months before the end of the project
Audit	<ul style="list-style-type: none"> UNDP CO CTA, National Project Manager and team 	Indicative cost per year: \$ 3,000 (Total: \$ 15,000)	Yearly
Visits to field sites	<ul style="list-style-type: none"> UNDP CO UNDP RCU (as appropriate) Government representatives 	For GEF supported projects, paid from IA fees and operational budget	Yearly
TOTAL indicative COST		US\$ 77,000	
Excluding project team staff time and UNDP staff and travel expenses			


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 form. For SGP, use this [OFP endorsement letter](#)).

NAME	POSITION	MINISTRY	DATE (MM/dd/yyyy)
VADYM POZHARSKYI	GEF FOCAL POINT	STATE ENVIRONMENTAL INVESTMENT AGENCY OF UKRAINE	08/02/2013

B. GEF AGENCY(IES) CERTIFICATION

This request has been prepared in accordance with GEF/LDCF/SCCF/NPIF policies and procedures and meets the GEF/LDCF/SCCF/NPIF criteria for CEO endorsement/approval of project.

Agency Coordinator, Agency Name	Signature	Date (Month, day, year)	Project Contact Person	Telephone	Email Address
Adriana Dinu UNDP-GEF Executive Coordinator		December 11 th 2015	John O'Brien Regional Technical Advisor, EITT	(+90) 212 512 58 53	john.obrien@undp.org

ANNEX A: PROJECT RESULTS FRAMEWORK (either copy and paste here the framework from the Agency document, or provide reference to the page in the project document where the framework could be found).

	Indicator	Baseline	End of Project Targets	Sources of Verification	Risks and Assumptions
Objective					
To assist the Government in addressing the barriers to transform the market for investments in energy efficiency in public buildings in the country.	<p>Emission reductions (in tCO₂ over 20-yr timeline).</p> <p>Investment in energy efficiency.</p> <p>Energy saved by capacity installed (MWh/MWh_{Th}).</p> <p>Number of green jobs created.</p>	<p>The building sector (housing, institutional/communal and commercial) consumes about 40% of total heat and 25% of all electricity in Ukraine making it a major contributor to greenhouse gas emissions.</p> <p>Energy consumption in existing buildings is on average approximately four times higher than that in Western European countries.</p> <p>No investment taking place to improve energy efficiency in existing buildings.</p>	<p>8,893 tons of CO₂ reduced over 20-year equipment lifetime.</p> <p>Indirect post-project GHG reduction of 1,440,000 tons of CO₂.</p> <p>Investment of \$ 21 million from ESCOs.</p> <p>3,000 green jobs created.</p>	<p>Project's annual reports, GHG monitoring and verification reports.</p> <p>Project mid-term review and terminal evaluation reports that provide a more accurate estimate of expected CO₂ reduction.</p>	Continued commitment of project partners, including Government agencies and private stakeholders.

Outcomes					
Outcome 1: Streamlined and comprehensive legal and regulatory framework to promote energy efficiency in public buildings through strengthening of monitoring and enforcement mechanisms.	Existence of adequate policy and regulatory framework.	None available at the present time.	Completed within 12 months of project initiation and approved by Government by the end of year 2.	Published documents. Government decrees/laws.	Commitment of the various Government institutions.
Outcome 2: Innovative Financing Mechanism is adopted and capacity development is provided for ESCOs to promote investment in support of Energy Efficiency in public buildings.	Innovative Financing Mechanism established.	None exists at the present time.	Completed within 24 months of project initiation and applied by all stakeholders.	Project documentation.	Cooperation of all stakeholders.
Outcome 3: Pilot projects in selected public buildings which demonstrate energy and cost-saving potential of new energy efficient measures.	Pilot projects completed.	No such ESCO modality-driven implemented at the present time.	Completed within 48 months of project start.	Project documentation	Growth of programme will be sustained.
Outcome 4: (a): Institutional basis for supporting energy efficiency in public buildings and implementing a nation-wide Energy Information Management System (EMIS) is in place.	Existence of adequate framework.	No such organisational structure exists at the present time	Organisational structure in place within 24 months of project initiation. At least 20 new cities in Ukraine are implementing	Project documentation.	Continued support of Government.

<p>(b): Documented, disseminated and institutionalized project results providing a basis for further replication.</p>		<p>Lack of sufficient information to effectively pursue programme.</p>	<p>EMIS by the end of the project and at least 5 cities implementing EMIS by the half way point</p> <p>Increased awareness among stakeholders in place to promote and develop the market for energy efficiency in public buildings.</p>	<p>Project terminal report and website.</p>	<p>Growth of programme will be sustained.</p>
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RESPONSES TO STAP RECOMMENDATIONS

Comment	Response	Reference
<p>1. The rationale for focusing on improving energy efficiency in public buildings is very clear in the PIF and the problem with respect to improving energy efficiency in public buildings is also very well explained. The PIF also provides a very good table describing the baseline situation for each of the components of the project.</p> <p>2. STAP's study on "Climate Change: A scientific assessment for GEF" (STAP, 2012) shows that in moderate and cold climates it is feasible and cost-effective for both new buildings and retro-fits to reduce heat energy needs by 70 to 90% compared to standard practice. (The study can be downloaded at www.stapgef.org) STAP has recommended high performance retro-fits for EITs. STAP recommends reference to the above STAP report and in particular Table 4.2 for potential mitigation options in the building sector.</p> <p>3. STAP recommends identification of retro-fit technologies for public buildings and adoption of an integrated building concept covering heating, lighting, appliances, water heating, etc and application of advanced IT systems (STAP 2012).</p> <p>4. Under Component 2, information on the investment required and the cost effectiveness of investment in different technologies and the savings in electricity and heating bills for the public sector agencies is necessary. How will the financial incentives be sustained? And what will be the source of financing?</p> <p>5. Under Component 3 it is proposed to invest USD 1 million/building for demonstrating energy</p>	<p>N/A</p> <p>2. This study is referenced at the end of the first para. on page 13 of the RCE.</p> <p>3. Agreed.</p> <p>4. This is noted on page 16-17 of the GEF RCE. In addition, under Component 1, the project will establish a database of public buildings re. energy consumption and set up an Energy Management and Information System (EMIS) for all public buildings in the country making sure that the EMIS is adopted in at least 0 cities in Ukraine, in collaboration with GIZ and USAID making sure that we are working on small and medium sized cities not targeted by GIZ and USAID. Financial incentives will be sustained because our model is to work with existing financial structures to support ESCO market development. The source of financing for ESCOs is their own debt or equity financing, so if the ESCO market works then financing will be sustainable. The project proposes to use the ESCO modality to implement energy efficiency measures in public buildings using EPC contracts. This will be facilitated by the adoption of secondary legislation to support the new May 2015 law defining the operation of ESCOs in the country and with the implementation of multi-year Government funding allocation for public buildings. The ESCO mechanism is by definition sustainable as it uses external finance to implement EE measures.</p>	

<p>efficient systems. The question is will such a large investment lead to significant reduction in energy use and cost reductions for the utility owning the building. Thus, care should be taken to incorporate such technologies which provide significant savings in energy at moderate or low cost.</p> <p>6. Developing minimum energy performance standards should give long term benefits. It is assumed most buildings are heated with cheap natural gas. This makes the cost-effectiveness of energy efficient investments less enticing, so regulations are required.</p> <p>7. Estimating energy efficiency costs per building can only be indicative in the proposal until specific buildings have been selected when their size, age, construction materials, function etc. is then known. So the quoted costs can only be treated as indicative. This also applies to the mitigation potentials of the 8 demonstration buildings. Also when calculating CO2 emissions avoided, the possibility of a rebound effect should be taken into account?</p> <p>8. For demonstrations, simple payback periods will provide useful information that is easily understandable, but more rigorous analysis should be required for MRV. Seasonal variations, particularly in heating/cooling demands mean all year round monitoring against a 12 month baseline will be needed.</p> <p>9. The planned international conference on energy efficiency should include some building owners and energy managers to give their side of the story and lessons learned from a practical perspective.</p>	<p>5. On the basis of EOI (Expressions of Interest) received for the 10 pilot projects (Annex 2), the cost of implementing energy efficiency measures per building is between \$ 60,000 and \$ 195,000.</p> <p>6. This issue is addressed in Component 1 of the RCE (page 21).</p> <p>7. This is correct – full feasibility studies for selected buildings will show actual costs of measures to be implemented, energy savings and GHG emissions. Also, as these are public buildings, the rebound effect at the building level may be minimal, but could have repercussions at the central Government level.</p> <p>8. Yes, this will be achieved through EMIS mentioned above. Energy management information systems, by definition, provide rigorous MRV.</p> <p>9. This is correct and is clarified at the bottom of page 23.</p>	
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Comments by United States Government	UNDP Response to US Government Comments at the PIF Stage	
<p>Although the United States is fully supportive of this project's goals, there are numerous areas in which the proposal should be strengthened. We requested the opportunity to review this project prior to GEF CEO Endorsement to allow UNDP to incorporate responses to our technical questions and comments. In particular we urge UNDP to carefully consider the following recommendations as it prepares the project for CEO endorsement:</p> <p>The proposed project does not take into account major donors' projects including those of the EU, EBRD, GIZ, and USAID. For example, USAID MHRP with NEFCO and E5P started first in Ukraine Municipal ESCO for public buildings in Kyiv. The proposal neglects discussion about these donor initiatives and possible cooperation, synergy, or lessons learned that could help to strengthen the proposed efforts. Additionally, the National Agency for Efficient Use of Energy Resources (NAER) is not mentioned in the proposal but seems to be a natural partner considering they are involved in similar ongoing activities.</p> <p>The proposal does not indicate how funding from the GEF will contribute additional environmental benefits to what has already been or is projected to be accomplished through other completed, ongoing or approved projects funded by other donors. This project does not contribute to SEAPs preparation with clear emission reduction plan of activities and CO2 accounting/sequestration actions.</p>	<p>To take into account the concerns of the US government, the revised proposal now pays significantly more attention to how this project will cooperate with and coordinate with other ongoing initiatives in Ukraine. A detailed table (UNDP Prodoc, annex 8) is provided clearly explaining the coordination between initiatives.</p> <p>A matrix table is now provided in the revised document outlining the areas of activities of the various donors related to energy efficiency in Ukraine and a lot more detail is provided on how this project complements the work of other donors. In summary, the main differences are that the UNDP GEF project aims to provide:</p> <ol style="list-style-type: none"> 1) Support for the Pure ESCO model in Ukraine with 10 'real' demonstration projects that use a real ESCO model where the ESCO provides technical services, financing, and a guarantee of savings 2) Energy Management Information Systems (EMIS) and Demo Projects only in small and medium sized cities not covered by other donors 3) A new and innovative financing mechanism, which is being developed with the IFC with UNDP focusing on technical assistance and capacity building for banks and ESCOs and IFC focusing on the financing aspects <p>The project will contribute to SEAP preparation for the 10 pilot cities provided that they are not already being supported for SEAPs by other donors. It will aim to target cities that have signed the EU Covenant of Mayors, yet do not have donor support for SEAP preparation. This is now clarified in the revised project document and GEF RCE.</p>	<p>Annex 8 to the project document.</p>

<p>Since the proposed ESCO mechanism requires significant change of legislation to produce large, broader adoption of energy efficiency standards (and donors such as EBRD, WB, and USAID already working on these legal changes) it is unclear that this project will be able to have a larger impact beyond the proposed pilot projects. Along these lines, the project relies heavily on awareness to spur continuing government commitment on energy efficiency, which is not sufficiently convincing. The proposal would be significantly strengthened if there were more engagement in developing appropriate incentives or penalties that would encourage mainstreaming of energy efficiency practices.</p>	<p>The new legislation related to ESCO market development has already been adopted in Ukraine as of May 2015. One of the most important features of the new legislation is that it is now possible to sign ten year contracts with the municipal sector. However, secondary legislation is still not enacted which would further support ESCO market development. Municipalities still cannot sign contracts with ESCO with undefined success fee payments and this is an issue. Secondly, the experience with ESCOs is that they nearly always run out of money after financing the first few EPC contracts and debt financing becomes either extremely difficult if not impossible to obtain as the debt-equity ratio increases so the ability to sell EPCs in the secondary market to pension funds or investors/speculators would greatly facilitate ESCO market growth and expansion. Therefore, The proposal will have a larger impact beyond the proposed pilot projects in that, if successful, the project will support the first real EPC contracts in Ukraine to be properly implemented. This in turn should promote and stimulate further ESCO market development. The project will not rely only on awareness raising activities. It is now further clarified how the project will also have a significant focus on the development of secondary regulations to support ESCO market development as well as providing appropriate financial incentives.</p> <p>We agree with the comment of the GEF that the project would be significantly strengthened by developing appropriate incentive mechanisms or penalties. At the core of the revised strengthened project design is a new sustainable energy financing mechanism, to be developed with the IFC and implemented jointly with UNDP. This financial mechanism will focus on developing standardized banking products for RE and EE and reducing the risks associated with the financing of EE projects so by working closely with the banking sector we provide for a sustainable solution to support ESCO market development and we help to put in place appropriate incentives and penalties.</p>	
<p>The proposal does not sufficiently address risks and mitigation strategies. The Project Component 1: Institutional, Regulatory and Legal Framework to Support Energy Efficiency in Public Buildings,</p>	<p>The main risk is that EPC still does not work in Ukraine due to high interest rates and low levels of trust of ESCOs in municipal authorities that they will be paid back over periods of seven to ten years. The</p>	

<p>calls for new government decrees related to establishing a mandate for SEIA and national targets on energy efficiency. The success of the project will therefore depend, to a large extent, on government action. The Risks section appears optimistic about the prospects for continuing government commitment and engagement on energy efficiency. It would be helpful if the PIF would explain the reasoning further, and provide more detail on how the project will respond in case any delays or obstacles are encountered.</p>	<p>project will do everything possible to make EPC contracts work but as a risk mitigation measure if they don't work in pilot cities due to the high interest rates and lack of ESCOs willing to take on the risk of high interest loans, then budget funds will be reallocated to energy management.</p> <p>UNDP believes that the risks section is not optimistic about continued government commitment to energy-efficiency in Ukraine but rather realistic. Government of Ukraine introduced the new ESCO law in May 2015 which is a very large step forward and the Government is currently looking to establish the S21 Energy Efficiency Revolving Fund , targeting \$100 million USD from state budget and donor funds to provide low interest loans for investments in energy efficiency in buildings in Ukraine.</p> <p>The answer to the comment about appropriate incentives or penalties in the mainstreaming of energy efficiency practices is that the ESCO business model is recognized as the best hope for Ukraine to stimulate additional investment in EE in public buildings in a market environment where there is a lack of public money available to make these investments and where the scale of investment required is in the billions of dollars.</p>	
<p>The cost associated with this proposed project looks unreasonably high for the proposed very limited impacts. USAID MHRP project implemented 34 demonstration projects for total 7.5 mln USD (50% co-financed by public and private partners).</p> <p>We also have numerous more technical comments:</p> <p>The proposed attribution of energy efficiency in buildings to the State Agency for Environmental Investments looks incorrect (taking into account of role and responsibilities in the GOU). NAER, MinEcon and MinRegion are responsible for energy efficiency in public buildings.</p> <p>Project Component 2, “Innovative financing mechanisms to provide incentives for the public sector to invest in energy efficiency,” will explore “carbon finance through a supported NAMA.” It further states that the “supported NAMA like intervention will explore in detail how to build upon work which has already been carried out in Ukraine</p>	<p>Component 3 has a budget of \$2.38 million for 10 demonstration projects (using EPC) which is an average of \$238,000 per project, which is very similar to the cost listed for the USAID MHRP project (7.5 mln/34 = \$220,000 per project) and in addition the UNDP project has an added layer of complexity because we are doing demo projects on energy savings in public buildings using ESCO modality, so one would expect a higher cost.</p> <p>UNDP has made some minor changes to the budget proposing an increase to component 4 of some \$400,000 to reflect the high cost of implementing energy management information systems including metering in 10 different cities. As none of these demonstration projects has successfully demonstrated an EPC contract using the pure ESCO modality, it is not correct to state that no further demonstration projects are required in Ukraine.</p>	

<p>with regards to Green Investment Scheme (GIS) sales of Assigned Amount Units (AAUs) ...” and “will explore how a supported NAMA like mechanism can be integrated into a possible domestic emissions trading scheme for Ukraine which is currently under investigation.” It would be helpful if the PIF would explain how “NAMA” is being defined here. From the description, it is unclear whether the mechanism would work like a supported NAMA with financing support but no sales of emission reductions, or a crediting NAMA (with potential sales/trades of emission reductions to third parties, which can then be used as emission offsets). Or will part of it be supported and part a crediting NAMA, wherein sales of emission reductions are allowed but only after a certain target of (non-tradable) reductions are achieved? This is an important distinction; if the intention is to pursue a crediting NAMA with all reductions available for sale, then some of the emission reductions achieved could be offset through emissions produced elsewhere, reducing the net benefit to the global environment from the project.</p>	<p>The State Agency for Environmental Investments (SAEI) is now disbanded in 2015 as the Kyoto Protocol JI mechanism is no longer working in Ukraine. This is clarified in the revised proposal. The institutional set up for energy efficiency is further defined and explained. NAER reports to MinRegion so the project follows the correct approach by having MinRegion as the main implementing partner.</p> <p>If USAID MHRP project can implement 34 demo projects for 7.5 million, then it seems reasonable for UNDP to implement 10 demo projects for \$1 million budget with 50% of the support going for EPC contracts (10 x \$50,000) and 50% of the support going to support metering for energy management information systems (10 x \$50,000).</p> <p>Hence, in the revised project the total cost of component 3 has been cut by \$700,000 USD and it is clarified that only demonstration projects will only be implemented, provided that they can use the EPC modality with each city receiving a maximum of \$50,000 USD for support related to EPC contract and \$50,000 support related to metering for energy management information system.</p> <p>Possible project support for NAMAs was mentioned in the PIF. It is not in the version of the project document and GEF RCE submitted to the GEF Secretariat. Therefore, this comment is not applicable.</p>	
<p>On page 15, a grid emission factor of 0.91 tons/MWh from an EBRD report is used to estimate the reductions. This is close to what one would expect from coal-fired generation. Given that one-half of the total power generation in Ukraine is from low emission nuclear and hydro power, this estimate thus seems high. Is this a marginal or an average emission factor? Does it account for T&D losses (i.e. per kWh generated basis or delivered basis).</p>	<p>The 0.91 tons/MWh figure was mentioned in the PIF. It was removed from the version of the project document and GEF RCE submitted to the GEF Secretariat. Therefore, this comment is not relevant.</p>	

ANNEX C: STATUS OF IMPLEMENTATION OF PROJECT PREPARATION ACTIVITIES AND THE USE OF FUNDS⁹

A. PROVIDE DETAILED FUNDING AMOUNT OF THE PPG ACTIVITIES FINANCING STATUS IN THE TABLE BELOW:

The activities undertaken within the framework of PPG were directed towards the design and development of the full size project entitled “Removing Barriers to Increase Investment in Energy Efficiency in Public Buildings.” Under Component 1, a review of policy, institutional, and legislative framework needed to support energy efficiency in new and existing residential and public buildings in Ukraine was undertaken. Baseline studies also outlined the work undertaken by other donors and the clear gaps within which the UNDP/GEF project can operate and the detailed baseline report which explains the situation which would likely happen in the absence of the project. As part of the work undertaken in revising the documents, UNDP hosted an ESCO roundtable to meet with ESCOs and discuss the issues related to energy-efficiency in public buildings. Additional work was undertaken into making an analysis of why the ESCO market has not worked properly, to date, in Ukraine. The work and analysis revealed that while other donors (including UNDP) have been working in the area of ESCO market development, there is still a lot of work that needs to be done. In a similar, fashion, analysis of energy management revealed that there is no single approach to energy management and no national energy consumption database for public buildings and no nationally adopted energy management information system (EMIS). Work also included baseline studies on the technical problems of the existing building stock; identifying technology solutions for the identified problems; defining the criteria for selecting future demonstration projects; and calculating energy savings estimates, and cost estimates for a selected set of technology solutions. Under Component 2, consultations were held with private sector stakeholders, central and local government authorities, NGOs, etc., in order to clarify the main barriers and perspectives for increasing investment in energy efficiency of public buildings in the municipal sector and a validation seminar was held in Kyiv with all stakeholders to validate the project approach. Work also included definition of monitoring and evaluation (M&E), preparation of a sustainability plan outlining the principles and guidelines for ensuring the long-term sustainability of project achievements; definition of management arrangements governing the project. Under Component 3, an analysis of what are attractive and competitive business terms and conditions for investors for ESCOs was undertaken; work included research on a Financing Mechanism to safeguard ESCOs in case of payment default by the public building administrator under the EPC contract; development of financial incentives to be provided to ESCOs to invest in Energy Efficiency in public buildings such as income tax holiday for a specific period of time, duty and tax exemptions on equipment and services, etc.. Finally, under Component 4, the project was finalized taking into account all findings and discussions with key stakeholders. The Finalized Project Document and GEF Request for CEO Endorsement were drafted and presented.

A.1: DESCRIBE FINDINGS THAT MIGHT AFFECT THE PROJECT DESIGN OR ANY CONCERNS ON PROJECT IMPLEMENTATION, IF ANY:

A major finding that affected project design was the finding 95% of apartment buildings in the country are privatised, with the remaining 5% of apartments/apartment buildings being still State-owned and presently utilised by Government officials; these will gradually also get privatised. Hence, these remaining 5% of apartment buildings are excluded from consideration under the present project and the project is focusing on public buildings such as schools, kindergartens, hospitals, museums, and administrative buildings. Another finding is that other donors are almost

⁹ If at CEO Endorsement, the PPG activities have not been completed and there is a balance of unspent fund, Agencies can continue undertake the activities up to one year of project start. No later than one year from start of project implementation, Agencies should report this table to the GEF Secretariat on the completion of PPG activities and the amount spent for the activities.

entirely focusing their support on larger cities with populations of 400,000 inhabitants or more. For this reason, this project focuses its assistance for energy efficiency in public buildings on small and medium sized cities.

PPG Grant approved at PIF:			
<i>Project Preparation Activities Implemented</i>	<i>GEF Amount (\$)</i>		
	<i>Budgeted Amount (\$)</i>	<i>Amount Spent to date(\$)</i>	<i>Amount Committed (\$)</i>
Component 1: Baseline Analysis & Technical Review	40,000	38,000	2,000
Component 2: Institutional arrangements, Monitoring and Evaluation	15,000	10,000	5,000
Component 3: Financial Planning and Co-Financing Investments	20,000	20,000	-
Component 4: Finalization of the Complete Package of Documentation	15,000	10,000	5,000
Total	90,000	78,000	12,000

ANNEX D: CALENDAR OF EXPECTED REFLOWS (if non-grant instrument is used)

Provide a calendar of expected reflows to the GEF/LDCF/SCCF/NPIF Trust Fund or to your Agency (and/or revolving fund that will be set up)

N/A