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Government of the Republic of Belarus

**Evaluation of UNDP/GEF Project: Removing Barriers to Energy
Efficiency Improvements in the State Sector in Belarus**

(PIMS 2426)

Mid-Term Evaluation Report

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ABBREVIATIONS

Acronym	Meaning
APR	Annual Progress Report
BIES	Belinvestenergoberezhnie (State Energy Investment Enterprise)
BY	Belarus
CEE	Committee of Energy Efficiency
CHP	Combined Heat and Power
EC	Energy Center
EED	Energy Efficiency Department (formerly CEE)
EE	Energy Efficiency
ESCO	Energy Service Company
EU	European Union
gce	Grams of coal equivalent
GEF	Global Environment Facility
GHG	Greenhouse Gas
GIS	Geographic Information System
GoB	Government of Belarus
IRR	Internal Rate of Return
JI	Joint Implementation (Kyoto Flexible Mechanism)
JSC	Joint stock company
M&E	Monitoring and Evaluation
MoE	Ministry of Economy
MoF	Ministry of Forestry
MoHPU	Ministry of Housing and Public Utilities
MoNREP	Ministry of Natural Resources and Environmental Protection
MTE	Mid-Term Evaluation
MTce	Million tonnes of coal equivalent
MToe	Million tonnes of oil equivalent
NPD	National Project Director
PDF	Project Development Facility
PIR	Project Implementation Report
PMU	Project Management Unit
Prodoc	Project Document
RE	Renewable Energy
RFP	Request for Proposal
RUE	Republican Unitary Enterprise
SC	Steering Committee
SOE	State Owned Enterprise
SPA	Special Partnership Agreement
ST	Study Tour
TA	Technical Assistance
TCE	Tonnes of coal equivalent
UNDP	United Nations Development Programme
UNECE	United Nations Economic Commission for Europe
UNFCCC	United Nations Framework Convention on Climate Change
USD	United States dollar

EXECUTIVE SUMMARY

The project document for “Removing Barriers to Energy Efficiency Improvements in the State Sector in Belarus” (herein referred to as the Project) was signed in December 2006. The Project commenced operations in January 2007 with the Inception Mission and workshop. The state sector in Belarus accounts for over 68% of the country’s total energy and fuel consumption. As such, the need to reduce the state sector’s energy and fuel consumption serves as the main driver for this Project.

The project development **goal** is to reduce GHG emissions through the removal of key barriers to the adoption of energy efficient (EE) improvements in the state sector.

To achieve this goal, the Project was designed with a number of expected **project outcomes**:

- Outcome 1: Increased incentives for state organizations to invest in EE;
- Outcome 2: Financial resources available to the state sector for energy efficiency investment are used more efficiently
- Outcome 3: Project successes throughout Belarus are sustained and replicated.

Context and Purpose of the Mid-Term Evaluation

The purpose of the mid-term evaluation (MTE) for this Project is to evaluate the progress towards the attainment of global environmental objectives, project objectives and outcomes, capture lessons learned and suggest recommendations on major improvements. The MTE is to serve as an agent of change and play a critical role in supporting accountability. As such, the MTE will serve to:

- Strengthen the adaptive management and monitoring functions of the Project;
- Enhance the likelihood of achievement of Project and GEF objectives through analyzing Project strengths and weaknesses and suggesting measures for improvement;
- Enhance organizational and development learning;
- Enable informed decision-making;
- Create the basis for replication of successful project outcomes achieved to date;
- Identify/validate proposed changes to the Project Document to ensure achievement of all project objectives; and
- Assess whether it is possible to achieve the objectives in the given timeframe, taking into consideration the speed, at which the project is proceeding.

Evaluation Findings

Main **achievements** of the Project as of June 2009 have been:

- Use of energy norms on a pilot basis by 5 state organizations in estimating their annual energy budget requirements (3 budgetary organizations in Mogilev region

and 2 in the Vitebsk region). The Project studied EE opportunities as selected by Mogilev and Vitebsk regional executive committees with the objective of preparing recommendations on implementing technically-based energy norms for budgeting, and on the provision of incentives for key staff in these organizations to increase EE investments;

- Investment plans of US\$15.1 being implemented with state enterprises, ESCOs and commercial banks of which US\$ 10.9 million was financed through commercial loans, not government concessional funding as originally intended;
- Increased capacity of national energy experts on energy business planning and energy audits;
- A draft regulation to increase the proportion of loan to grant finance for EE projects. Approval of this draft, however, has been placed on hold by the GoB;
- The development of an “Energy Center”. Currently, the Center is under the management of the Government of Belarus (GoB) under the Department of Energy Efficiency (EED). The EED, however, is currently working on establishing the Energy Center as a legal autonomous and self-sustained organization that will provide consulting services to facilitate development of EE investments throughout Belarus.

The most important **conclusions** drawn from the MTE mission include:

- EED has been unable to initiate changes in budgeting and to create government-supported mechanisms for concessional loan finance. This may be due to the change or downgraded status of the EED from a stand-alone State Committee on EE to a Department within the State Standardization Committee;
- The design of incentives for state budgetary organizations to increase investment in EE using energy norms and settlement accounts appears to be difficult task. This is largely due to the difficult task of attempting to reform the well established and rigid budgeting process in Belarus with the Ministry of Finance, Ministry of Taxation and the Regional Budgeting Authorities;
- The sustainability of the GoB system of bonuses and incentives to staff for implementing EE measures is uncertain since funding of the incentives are not directly related to energy savings. Moreover, budgeting for the incentives and bonuses are not compulsory and not specified by GoB regulations;
- As an alternative to changes in government budgeting and creating government-supported mechanisms for concessional loan finance, the Project has found replicable mechanisms to implement EE investment plans through:
 - “simple partnership agreements” (SPAs) between “quasi-budgetary” organizations that collect revenue from delivering municipal services and energy service companies (ESCOs); and
 - business contracts between a state enterprise, an ESCO and a commercial bank;
- The original project design would have more effective if the ProDoc had recognized the distinction between state budgetary organizations, “quasi-state” budgetary

organizations and self-sustaining state enterprises. Each of these organizations have distinct approaches for increasing EE implementation;

- There is competent expertise in the Energy Center (EC) in efficient gas-fired power generation. More work is required to build the capacity of the EC to facilitate other EE investments that are economically feasible with short payback periods (e.g. appliances, buildings, pumps replacements, motors etc.);
- The log-frame of the Project requires revision and clarification if it is to be used as a Project monitoring tool. It has been revised a number of times and is not presented in the outcome-based format typical of other GEF projects. Moreover, some are difficult to achieve (such as settlement accounts), do not have any relationship with the intended outcome, or are not clear in their intentions (i.e. is Outcome 2 related to approving legislation related to increasing EE loan finance or only to increase EE loan finance?). This has had some adverse effect on the progress of the Project;
- Project implementation has been slowed by a number of factors including a lack of investment of Project resources on Outcome 1 where project design issues existed, lack of inputs by foreign or specialist consultants who could accelerate the pace of Project delivery, delayed legalization of the Energy Center, and the lack of EED support to finance a fully functional PMU;
- The Project needs to continue to improve its capacity to monitor EE investments, energy usage and GHG reductions. This would include the capacity of the Project to prepare EE investment profiles, detailed calculations of energy usage and GHG reductions; these could be effectively used to demonstrate the EE aspects of investments that have been developed.

Project **sustainability is moderately likely**. Project sustainability can be enhanced:

- through strengthening the use of SPAs between quasi-budgetary organizations and ESCOs for EE investments;
- if there are regulations that specify budgetary allocations for staff bonuses and incentives based on increasing EE investments. Promulgation of such regulations, however, appears to be highly unlikely;
- when the Energy Center becomes a legal entity;
- if there is a strong ESCO industry in Belarus that can provide quality services to state enterprises and quasi-state budgetary organizations (who cumulatively consume over 92% of the country's fuel resources).

Replication of EE measures will occur if:

- the GoB sets mandatory budgeting of staff bonuses and incentives for increasing EE investments. The setting of mandatory budgets, however, appears to be highly unlikely;
- state budgets or subsidies decline forcing quasi-state budgetary organizations to use the SPA as a contract modality to invest in EE measures;
- the Project can build a pipeline of economically feasible EE measures with excellent rates of return.

Performance Ratings

The overall rating of the Project in terms of project progress is “Moderately Satisfactory” (MS), mainly due to the design problems and the need to reset the targets of Outcome 1, and the slow progress in the legalization of the Energy Center. A summary of ratings for the individual components are provided in Table A with suggested edits to the “Project Outcomes” that clarify Project intentions.

Table A: Evaluation of Project Activities and Outputs (as of June 2009)¹

Project Outcome	Relevance	Efficiency	Effectiveness	Results / Impacts	Overall Rating
Outcome 1: Increased incentives for state organizations to invest in EE	MS	MS	MU	MU	MU
Outcome 1.1: State organizations using energy “norms” or standard intensities to estimate their annual budget for energy expenditures	S	S	S	MU	S
Outcome 1.2: State organizations are depositing their energy savings into settlement accounts <i>Recommended reset of outcome: “Quasi-state organizations” are using a SPA to implement their EE investments with the assistance of the Energy Center</i>	U	MU	U	U	U
Outcome 1.3: State organizations are issuing incentives to staff responsible for energy efficiency to increase their level of EE investments	MS	S	MS	MS	MS
Outcome 2: Financial sources available to state sector for EE investments used more efficiently	S	S	S	S	S
Outcome 2.1: Capacity of state Improved qualifications of nationally accredited organizations and national experts is enhanced to conduct energy audits according to international best practices standards	S	S	S	Unable to rate	S

¹ *Highly Satisfactory (HS):* The project has no shortcomings in the achievement of its objectives; *Satisfactory (S):* The project has minor shortcomings in the achievement of its objectives; *Moderately Satisfactory (MS):* The project has moderate shortcomings in the achievement of its objectives; *Moderately Unsatisfactory (MU):* The project has significant shortcomings in the achievement of its objectives; *Unsatisfactory (U)* The project has major shortcomings in the achievement of its objectives; *Highly Unsatisfactory (HU):* The project has severe shortcomings in the achievement of its objectives.

Table A: Evaluation of Project Activities and Outputs (as of June 2009) ¹

Project Outcome	Relevance	Efficiency	Effectiveness	Results / Impacts	Overall Rating
<i>and business planning</i>					
Outcome 2.2: Proportion of loans to grants offered by the state for energy efficiency offered by EED is increased (Note: this is related to drafting of regulations)	S	S	S	MS	S
Outcome 2.3: The capacity of state enterprises is enhanced to use loan finance instead of grants for energy efficiency projects Recommendation to combine this outcome with Outcome 2.1	S	S	S	Unable to rate	S
Outcome 2.3 4: Project investments in energy efficiency are secured Project secures EE investments using loan, grant and equity financial resources	HS	HS	HS	HS	HS
Outcome 3: Energy efficiency investment Project successes throughout Belarus sustained and replicated	S	S	MS	MS	S
Outcome 3.1: Energy Center is established to supporting state enterprises in mobilizing loan, grant and equity finances and to implementing EE improvements	S	S	MS	MS	MS
Outcome 3.2: A pipeline of EE projects is developed that can be implemented after the GEF Project is complete	Unable to rate	Unable to rate	Unable to rate	Unable to rate	Unable to rate
Outcome 3.3: Number of projects and Energy Center's partners is expanded Recommended re-wording: Outreach of Energy Center is enhanced to foster partnerships and an increased number of projects	S	S	MS	MS	S
Monitoring and Evaluation	S	S	MS	S	S
Overall Rating					MS

The sustainability of the Project is rated as **MS (moderately sustainable)** due mainly to a lack of confirmed financial resources to continue activities in a post-project environment. The replication potential for EE projects amongst the different types of state organizations is assessed as follows:

- *Budgetary organizations.* Replication of EE projects has not yet occurred within the 5 budgetary organizations that are piloting the use of energy norms and providing staff incentives for increasing EE investments. Replication will only occur if there is a form of regulatory pressure to use energy norms; this appears highly unlikely at this time given the difficulties for the Project to be influential to the GoB in reforming its budgetary practices including the practice of “cutting” budgets according to current needs.

- Quasi-budgetary organizations. Replication of the SPA has not yet occurred since the Project has only recently introduced the concept to the GoB as a means to increase the proportion of loan finance. However, if state budgets continue to decline as expected, there will be reduced allocations to EE investments in Belarus, and the SPA modality will likely be adopted and replicated for financing EE projects with quasi-budgetary organizations.
- State self-financed organizations. The Project has demonstrated that EE projects can be developed with a significant loan component. While there has not yet been replication of EE investment in state self-financed organizations in Belarus, the potential for replication is significant based on economics of the two demonstrated projects with 75% to 100% loan finance, a number of cooperative agreements signed with the EC and the regulatory pressure to reduce fossil fuel consumption.

Recommendations

Recommendation 1: Focus on strengthening implementation of EE investment plans between state enterprises, ESCOs and commercial banks, and building a pipeline of projects that can be implemented after the GEF project is complete. State enterprises consume over 84% of all energy resources within the state sector in Belarus. As such, it is important for the Project to demonstrate the best practices for developing and implementing a wide range of EE projects in the state sector.

Recommendation 2: For Outcome 1, drop further efforts on developing incentives and bonuses for staff to increase EE investments with state budgetary organizations, and re-allocate resources to strengthen the pilot demonstration of “simple partnership agreements” (SPAs) between “quasi-state” budgetary organizations and ESCOs. State budgetary organizations only consume 6% of energy resources within the Belarusian state sector; the World Bank “Energy Efficiency” loan project is scheduled to commence in late 2009 that will specifically target state budgetary organizations for EE investments. Quasi-state budgetary organizations only consume 8% of energy resources in the state sector in Belarus; project resources for Outcome 1 should be re-allocated to strengthen SPAs as they appear to be the only means of increasing EE investments in this sub-sector (this re-allocation would be replacing the “settlement account” target in Outcome 1.2 that is unachievable). These pilot SPAs can also demonstrate the insertion of clauses into the SPAs that set aside a quota of energy savings profits for staff bonuses based on EE performance.

Recommendation 3: Follow-up on the legalization of the Energy Center and produce a strategic plan to identify other areas of EE expertise that it will develop and model for revenue generation. To develop a self-sustaining EC, a strategic plan for the EC will articulate how the EC will grow into EE areas beyond the current expertise in gas-fired power generation; the EC can grow into areas such as building EE, appliances and labeling, EE motors, EE lighting systems for industries and public facilities, and other EE activities that are economically feasible with short payback periods. The plan should include:

- a vision or a mission statement for the Energy Center;

- a ranking of EE opportunities for development that by fuel savings and payback periods;
- short, medium and long term targets for specific EE areas to be developed;
- a business model to sustain revenue generation by developing target EE projects (including financing and revenues generated from energy savings); and
- capacity building needs to ensure the plan can be implemented in a timely manner (see Recommendation 4).

Recommendation 4: Continuation of training of energy auditors and energy business planners. To be able to implement the strategic plan (Recommendation 3), the Project should continue to support training of energy auditors, business planners and key personnel from Belarusian-based ESCOs. Trainers should have exposure to international best practices in a wide range of EE areas, and serve as “windows” to international EE practices and technologies.

Recommendation 5: Reset outcomes and targets as specified in the MTE report to improve management of the Project. The revised log-frame will provide clear targets and management actions for the PMU and UNDP Belarus and improve implementation efficiency of the Project. To meet the targets, the PMU will have a log-frame on which to plan its work, and to allocate appropriate resources to achieve set targets.

Recommendation 6: If available, the Project should use competent external assistance to accelerate implementation. This would include the hiring of other ESCOs (to facilitate additional EE developments) and specialist consultants (to accelerate delivery of the targets such as drafting of SPAs).

Recommendation 7: Project staff should closely monitor EE investments developed using allocated Project resources. This would include using Project software, metering equipment, and time spent with the enterprises with EE investments. As an outcome, Project staff should be able to provide detailed calculations and details of the EE investment, payback terms, actual payments, energy baseline, energy used and saved by the EE investment and GHG reductions.

Recommendation 8: Project extension should only be considered if necessary. The current project completion date is December 31, 2010, deemed sufficient time to complete a number of outstanding Project tasks including the piloting of the SPAs, increasing the capacity of energy auditors and business planner to international standards, building a pipeline of EE projects and legalization of the Energy Center. However, if there are any delays to completing these tasks due to factors external to the Project (i.e. delayed legalization of the EC, slow build-up of a pipeline of EE projects, etc), a Project extension should be considered to complete all outstanding tasks.

1. INTRODUCTION

This report summarizes the findings of the Mid-Term Evaluation Mission conducted during the June 29 to July 11, 2009 period for “Removing Barriers to Energy Efficiency Improvements for the State Sector in Belarus” (herein referred to as the “Project”) implemented by the United Nations Development Program (UNDP), PIMS 2426 and with financing support from the Global Environment Facility (GEF). The Project Document (Prodoc) provides details on the progress of removing key barriers to energy efficiency improvements for state sector assets in Belarus. Project activities include:

- Increasing incentives for state sector organizations to invest in energy efficiency;
- Improving the efficiency of fund utilization from and by the state sector for energy efficiency improvements; and
- Ensuring energy efficiency project successes in Belarus are sustained and replicated.

1.1 Background

1.1.1 Overview of the Belarus and Its Economy

Belarus, which borders Poland to the west, Russia to the east, Ukraine to the south, and Latvia and Lithuania to the north, has limited indigenous energy resources and is therefore highly dependent on imports. Natural resources are limited, and, apart from small deposits of natural gas, oil and peat, its most important natural resource are the forests that cover 38% of the country. Winters are cold and summers are cool and moist, and there is a great need for heating during the winter months. The country is divided into 6 oblasts (districts), and one municipality (consisting of the capital Minsk).

Belarus was one of the Soviet Union's major industrial regions specializing in the production of machinery and equipment. Although these industries have declined significantly in scale since independence from the USSR in 1991, heavy industry and manufacturing continue to make an important contribution to the economy. Moreover, Belarus has retained close political and economic ties with Russia, signing a treaty on a two-state union that envisions greater political and economic integration. Belarus was severely impacted economically from the 1998 financial crisis in Russia; Belarus, however, has been recovering with a GDP growth of 6% in 2000 to 10.4% in the first half of 2008. Notwithstanding the global downturn of late 2008, Belarus recorded a 9.2% GDP growth in 2008. The industrial sector continued to be the source of this growth, at 10.3% in 1999, 8% in 2000, and 9.9% in 2006¹⁴.

Factors that had supported the healthy growth of the Belarusian economy up to 2008 include:

- a significantly improved external environment for Belarus exports both to Russia and the EU (especially since 2001) and strengthened domestic demand;
- recent improvements in labor productivity, energy efficiency, and capacity utilization;
- government investments in housing construction and preferential financing of state-supported sectors and enterprises;

¹⁴ Belarusian government website: http://www.government.by/en/eng_analytics291.html

- Russian subsidies in form of preferential energy prices charged to Belarus for gas, crude oil, and electricity imported from Russia; and
- provision of affordable, reliable, and sufficient energy to the national economy by the energy sector over the past decade.

The global economic downturn of 2008, however, has affected Belarus, in particular its exporting industry. There has been a deterioration of trade volumes and real exchange rate appreciation with trading partners, combined with limited access to external capital markets and delays in payment for Belarusian exports; the impact has exacerbated difficulties with external payments. Moreover, foreign reserves were declining with the economic outlook for 2009 estimated to be in the order of 1 to 2% growth. The Government of Belarus (GoB) has recently requested financial assistance from the IMF and World Bank.

1.1.2 Overview of Belarus Energy Sector

In 2005, Belarus had a power-generating capacity of 7,800 MW¹⁵ generating 30.96 TWh of electricity, with natural gas-fired power plants accounting for 90%, oil-fired plants accounting for 9%, and hydropower and wood waste for the remaining 1%. Approximately 26% of the electricity demand is now met through the import of electricity from Lithuania and Russia, another source of hard-currency expenses for the government of Belarus.

Currently, Belarus has limited indigenous energy resources and is, therefore, heavily dependent on imports of primary energy fuels, mainly from Russia. Energy imports from Russia are purchased in part for hard currency providing the current government very strong economic and political incentives to reduce energy consumption. In 2005, net imports accounted for 86% of Belarus' total primary energy consumption.

Belarus does enjoys a strategic location between Russia and the European Union allowing it to play a key role as a transit route for oil and gas exports from Russia to EU markets. Belarus is also able to convert crude oil supplied from Russia into refined product exports. One of the benefits Belarus received from this transiting arrangement was lower prices for gas from Russia as the fuel is not subject to export duties due to a Russian-Belarusian Union agreement.

Russia's recent actions to introduce market-based prices for its energy exports to the CIS countries have raised concerns for the GoB. Their actions have served as warnings of the likelihood that Russian subsidies to Belarus for energy commodities would be phased out.

1.1.3 Energy Efficiency in Belarus

Since the 1990s, the Government of Belarus has recognized the importance of reducing its historically excessive dependence on energy imports from Russia and the need for action to strengthen its energy security. This has been reflected in a number of GoB programs that outline government strategy and develop concrete action plans to modernize the energy sector, improve energy efficiency, and increase the use of domestic energy resources.

The state sector of Belarus is the largest consumer of fuel and energy resources in the country, accounting for 20 MTce or 68% of all fuel and energy resources in Belarus (compared

¹⁵ International Energy Agency energy profile for Belarus: http://www.iea.org/Textbase/stats/countryresults.asp?COUNTRY_CODE=BY

to less than 2% by the private sector and approximately 30% by the population). For the purposes of this MTE report, the state sector is divided into three types of organizations: 1) **state budgetary organizations**; 2) **state self-financed organizations**; and 3) **“quasi-state” budgetary organizations**.

State budgetary organizations: These are financed from the national or local budgets according to the level of government responsible for their operation. National-level state organizations, such as large hospitals, sanatoriums, and prisons fall under the control of the respective ministries. Local budgetary organizations, such as clinics and kindergartens, fall under the authority of regional¹⁶ executive committees (which include the executive committee of the city of Minsk) according to their location. As a rule, budgetary organizations provide services free of charge. The only source of financing of these organizations is budget funds and grants, which are planned and allocated annually.

State self-financed organizations: State self-sustained organizations are also referred to as state enterprises or joint stock companies (JSC) where the government maintains the majority shareholding, and appoints the organization’s management. These organizations, however, are profit motivated and are expected to cover their own costs through their business activities. Examples of state self-sustained organizations include industrial enterprises, various Belenergo facilities, and Belarusian Railways. State self-sustained organizations are entitled to access innovation funds offered by their oversight organization for energy efficiency investments. They can also sign “partnership agreements” with various organizations and companies (such as ESCOs) to facilitate development of EE projects.

Quasi-state budgetary organizations: The Prodoc does not make specific mention of quasi-state organizations; as such, they are specified in this MTE report to distinguish themselves from state budgetary organizations in that they receive higher revenues from delivery of municipal services such as water supply and sanitary services. While they are financed from national or local budgets, they can enter into a “simple partnership agreement” (SPAs) to develop EE projects using the proceeds from generated municipal services revenue to pay for ESCO services.

Of the 20 MTce energy consumed by the state sector, state self-financed organizations consume 16.9 MTce or 84% of all fuel and energy resources within the state sector. In comparison, budgetary organizations and quasi-state budgetary organizations only consume 1.3 and 1.8 MTce respectively¹⁷.

1.2 Government Initiatives Supporting Energy Efficiency

Prior to the commencement of the Project, Belarus had undertaken a number of institutional and policy changes to implement its goals of reducing its dependence on imported energy sources:

- ⇒ In 1993, the government established a State Committee on Energy Efficiency and Control in 1993, renamed in 2001 as the Committee on Energy Efficiency, and again in 2006 to its current name, Energy Efficiency Department (EED). The mandate of EED tasks is to:

¹⁶ The term “region” is used throughout this document to refer to administrative regions in Belarus, which are also referred to as *oblasts*. Belarus is divided administratively into seven regions, one of which encompasses the territory of the capital city of Minsk.

¹⁷ EED statistics and personal communication with Mr. Sergei Prokazov, Project Manager

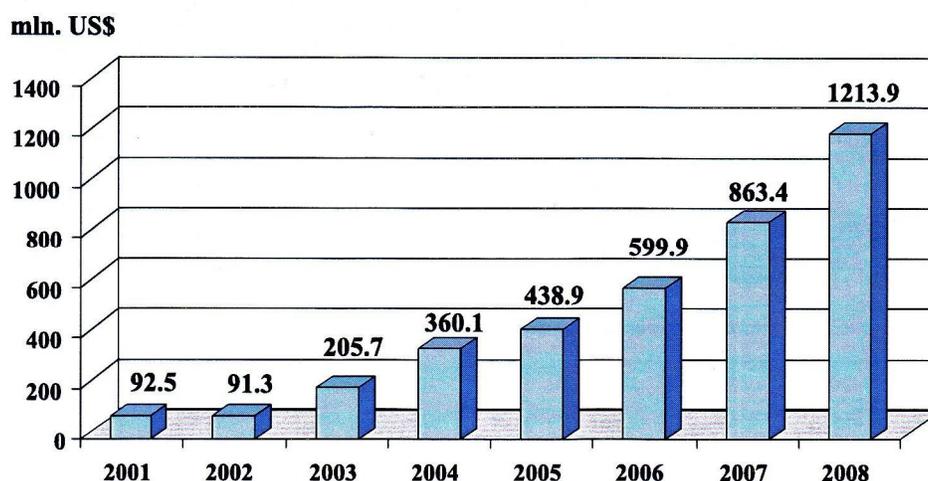
- promote state policy in the efficient use of fuel and energy resources;
- develop technical regulations, standardization of energy consuming technologies used in Belarus, supervise the production of energy consuming and energy producing equipment to state standards, and establish regulations dedicated to efficient use of fuel and energy resources;
- take part in state supervision of detailed technical design both for new construction and modernization of existing sites to become more energy efficient;
- provide state supervision for the efficient use of fuel and energy resources;
- provide oversight for the state program of energy savings in regions, districts, cities, towns, municipalities and enterprises;
- establish necessary financial and legal measures to support projects in energy saving;
- introduce renewable energy sources;
- provide information to support energy saving initiatives; and
- institute a system of training and continuing staff education.

EED has seven subsidiary enterprises (or regional departments) and six engineering consulting companies. Owing to the importance of energy efficiency in Belarus, the EED is now under the State Committee for Standardization who report directly to the Council of Ministers.

- ⇒ A special inter-agency Committee of Experts was created in 1998 by a Decree of the Council of Ministers to promote energy efficiency and co-ordinate efficient use of local energy sources, including wood and wood waste. This committee is headed by the chairman of the EED and includes members of all key sectoral ministries, regional departments, scientific institutions and state enterprises;
- ⇒ Between 1996 and 2000, USD 370 million was invested in energy saving activities under the National Programme on Energy Saving. The bulk of this investment was on the installation of metering devices, design of new energy saving materials and technologies, boiler rehabilitation, and replacement of old heat boilers with more efficient ones, all to reduce fossil fuel consumption;
- ⇒ The EED has been carrying out educational, awareness raising and research projects related to the promotion of domestic renewable energy generation, energy efficiency and energy saving;
- ⇒ The GoB has been setting targets to increase generation of at least 25% of electricity and heat from local fuels and alternative energy sources in Belarus up to 2012 (approved by Ordinance 1680 of the Council of Ministers of the Republic of Belarus on December 30, 2004). Much of this would be met by developing wood biomass in a sustainable manner throughout Belarus.

The impact of these GoB actions has been the increase in EE and RE investments from USD 92.5 million in 2001 to USD 1,213.9 million in 2008 as shown on Figure 1.

Figure 1: Financing of Energy Efficiency and Renewable Energy Projects in Belarus



Source: Energy Efficiency Department, 2009

1.2.1 Improvements for Attracting Foreign Investment

Belarus currently maintains features of a planned economy with the government controlling key factors of production and economic decisions. Although inflation was rapidly decreasing from 251% in 1999 to approximately 100% in 2000 to around 22% in 2003, other investment barriers in Belarus in 2003 remained¹⁸ including:

- A relatively high tax burden used by government to support certain companies and employment as well as social programmes;
- Uncertainty over the protection of property rights and an unfavourable business environment that only served to increase business development costs;

Belarus has recognized the need to attract foreign expertise and technologies to meet national goals of increasing biomass fuel usage for heat and energy generation. Changes were required to gradually reduce direct government participation, strengthen market-based approaches to boost investor confidence, and move towards a legal and regulatory basis more suitable for a competitive market structure. Since 2004, GoB has responded with a number of measures to attract foreign investments including:

- A Presidential Order to make Belarus more attractive for foreign investors;
- Raising awareness of GoB officers to be more supportive of foreign resources that can reduce Belarus dependence on imported fuels;

¹⁸ Belarus: In-Depth Review of the Investment Climate and Market Structure in the Energy Sector, Energy Charter Secretariat, 2007, http://www.encharter.org/fileadmin/user_upload/document/Belarus_ICMS_2007_ENG.pdf

- Official recognition of the need for foreign technology investments Through the “State Integrated Program of Modernization of Belarusian Energy System Generation Facilities and Increase of Domestic Fuel and Energy Resources Use, 2006-2010” (approved by President’s Decree #399 dated August 25, 2005);
- Selective engagement policies to bring in foreign investors; and
- Drafting of annual Presidential Decrees for exempting import duties on specialized power generation equipment.

1.2.2 Assistance of the Donor Community

Other donor agencies that have provided support for GoB initiatives for developing energy efficiency include:

- ⇒ The United Nations Economic Commission for Europe (UNECE). UNECE were a strong and long-term supporter of this Project and played an important part in encouraging Belarus’ ratification of the UNFCCC in 2000. The UNECE was also instrumental in the development of this Project as well as the Energy Efficiency 21 Project, which aims to assist Belarus in meeting international environmental treaty obligations under the UNFCCC through the development of energy efficiency investment projects;
- ⇒ World Bank. The Bank are involved with EE improvements in Belarus through three ongoing and pipeline projects:
 - “Social Infrastructure Retrofitting Project” (BY-7056). Since 2002, this project had invested approximately USD 7 million for boiler replacement or conversion from oil and coal to gas and wood fuel (about 30 small size units). Recently, the project was extended until 2010 with an additional USD 15 million targeted for conversion of small and medium sized boiler houses to biomass. This project also provided technical assistance in analysing tariffs and subsidies and developing recommendations for change;
 - Belarus Post-Chernobyl Recovery Project (Loan No. 4821-BY, USD 50 million). The project aims to provide the population residing in the Chernobyl affected area with energy efficient and reliable heat and hot water services in order to improve their living environment. Assistance includes energy efficiency through upgrading or replacement of heat production and distribution equipment, and improving thermal insulation and lighting in public buildings; and the provision of household connections to the existing gas distribution network to improve heat supply and replace utilization of dirty fuels, including those that may be contaminated with radioactive material;
 - Belarus Energy Efficiency Project (Project ID 108023, USD 125 million). This loan project scheduled for commencement in September 2009 aims to assist Belarus by availing funds to assist in the planning, design and construction of the conversion of existing heat-only-boiler plants to combined heat and power plants. This includes large CHP facilities for Minsk and Mogilev as well as a number of other smaller plants that are less than 3 MW. The start of this project is timely given the global economic downturn that has affected revenue generation for Belarus as of late 2008.

1.3 Project Goals, Objectives and Expected Results

The development **goal** in 2006 of the UNDP-GEF Project “Removing Barriers to Energy Efficiency Improvements in the State Sector in Belarus” was to facilitate an influx and increase of internal investment in energy efficiency projects in the state sector.

To achieve this goal, the Project was designed with a number of barrier-removal objectives. The 2008 **objectives** from the revised 2008 log-frame are as follows:

- Objective 1: To increase incentives for state organizations (or budget institutions) to invest in energy efficiency;
- Objective 2: To encourage state enterprises in the efficient utilization of financial resources made available for energy efficiency investments; and
- Objective 3: To sustain and replicate project successes in energy efficiency throughout Belarus.

The expected **results** for the Project include:

- US\$100,000 of annual investments made by state organizations at the end of the 3rd year of the Project;
- An increase in the number of state organizations using energy norms to estimate annual energy budget requirements;
- An increase in the use of “settlement accounts” by state organizations for depositing their energy savings;
- A incentive system that encourages key staff to increase levels of investment in energy efficiency;
- More than US\$50 million state and commercial loan funds invested in energy efficiency of the state sector in Belarus;
- Regulations in place to increase the share of loans to grant finance for energy efficiency projects by state enterprises;
- Increased capacity for energy audits that meet international standards;
- The establishment of a self-sustaining “energy center” that will facilitate development of energy efficiency projects in Belarus.

Section 2 provides the assessment on the achievements of project objectives and outcomes.

1.4 Mid-Term Evaluation

1.4.1 Purpose of the Evaluation

The purpose of the mid-term evaluation (MTE) for this Project is to evaluate the progress towards attainment of global environmental objectives, project objectives and outcomes, capture lessons learned and suggest recommendations on major improvements. The MTE is

to serve as an agent of change and play a critical role in supporting accountability. As such, the MTE will serve to:

- Strengthen the adaptive management and monitoring functions of the Project;
- Enhance the likelihood of achievement of Project and GEF objectives through analyzing project strengths and weaknesses and suggesting measures for improvement;
- Enhance organizational and development learning;
- Enable informed decision-making;
- Create the basis for replication of successful project outcomes achieved to date;
- Identify and validate proposed changes to the Prodoc to ensure achievement of all project objectives; and
- Assess whether it is possible to achieve the objectives in the given timeframe, taking into consideration the speed, at which the project is proceeding.

In accordance with UNDP/GEF monitoring and evaluation (M&E) policies and procedures, all projects with long implementation periods (e.g. over 5 or 6 years) are strongly encouraged to conduct mid-term evaluations. In addition to providing an independent in-depth review of implementation progress, this type of evaluation is intending to be responsive to GEF Council decisions on transparency and better access of information during implementation. MTEs are intended to identify potential project design problems, assess progress towards the achievement of objectives, identify and document lessons learned (including lessons that might improve design and implementation of other UNDP/GEF projects), and to make recommendations regarding specific actions that might be taken to improve the project. It is expected to serve as a means of validating or filling the gaps in the initial assessment of relevance, effectiveness and efficiency obtained from monitoring. The MTE provides the opportunity to assess early signs of project success or failure and prompt necessary adjustments.

For these reasons, a mid-term evaluator was mobilized to Belarus during the period 29 June - 11 July 2009 for the MTE of this UNDP-GEF Project. The terms of reference for the Evaluator are provided in Appendix A.

1.4.2 Key Issues to be Addressed

In addition to the evaluation of the whole project and its components, the key issues to be addressed on this MTE included:

- the performance of the Project with regards to generating energy efficiency incentives for state organizations;
- the slow gestation period on forming the Energy Center;
- financial contributions of the EED; and
- efficiency of Project implementation.

Outputs from this MTE will be used to chart future directions on this Project.

1.4.3 Evaluation Methodology and Structure of the Evaluation

The methodology adopted for this evaluation includes:

- Review of project documentation (i.e. project documents, PIRs, AWP, internal Project evaluations) and pertinent background information;
- Interviews with key project personnel including the Project Manager, the international technical advisor, Project staff, and relevant UNDP staff;
- Interview with relevant stakeholders from Government (e.g. Department of Energy Efficiency, Ministry of Finance); and
- Field visits to selected project sites and interviews with beneficiaries.

A detailed itinerary of the Mission is shown in Appendix B. A full list of people interviewed and documents reviewed is given in Annex C. The Evaluation Mission for the UNDP-GEF project comprised of one International Energy Expert and one National Consultant.

This evaluation report is presented as follows:

- An overview of project implementation from the commencement of operations in January 2007;
- Review of project results based on project design and execution;
- Conclusions and recommendations that can increase the probabilities of a successful project completion; and
- Lessons learned from implementation of the project to date.

This evaluation report follows the format specified in Appendix A, pages 56 and 57 and by the UNDP Guideline for Evaluators, June 2002:

http://www.undp.org/gef/05/documents/me/UNDP_ME_Handbook.pdf

As a supplement to UNDP Guidelines, GEF's "Monitoring and Evaluation Policies and Procedures" of February 2006 (pages 13-18) were also taken into account:

http://www.undp.org/gef/05/documents/me/GEF_ME_Policies_and_Procedures_06.pdf

1.5 Project Implementation Arrangements

The project organization chart is shown on Figure 2. The original 2006 Project design allocated UNDP-GEF funds to provide:

- increased incentives for state organizations to invest in energy efficiency;
- assistance to the state sector to use state financial resources more efficiently for energy efficiency investments; and
- assistance to sustain and replicate energy efficiency project successes throughout Belarus.

The main stakeholders on the Project include:

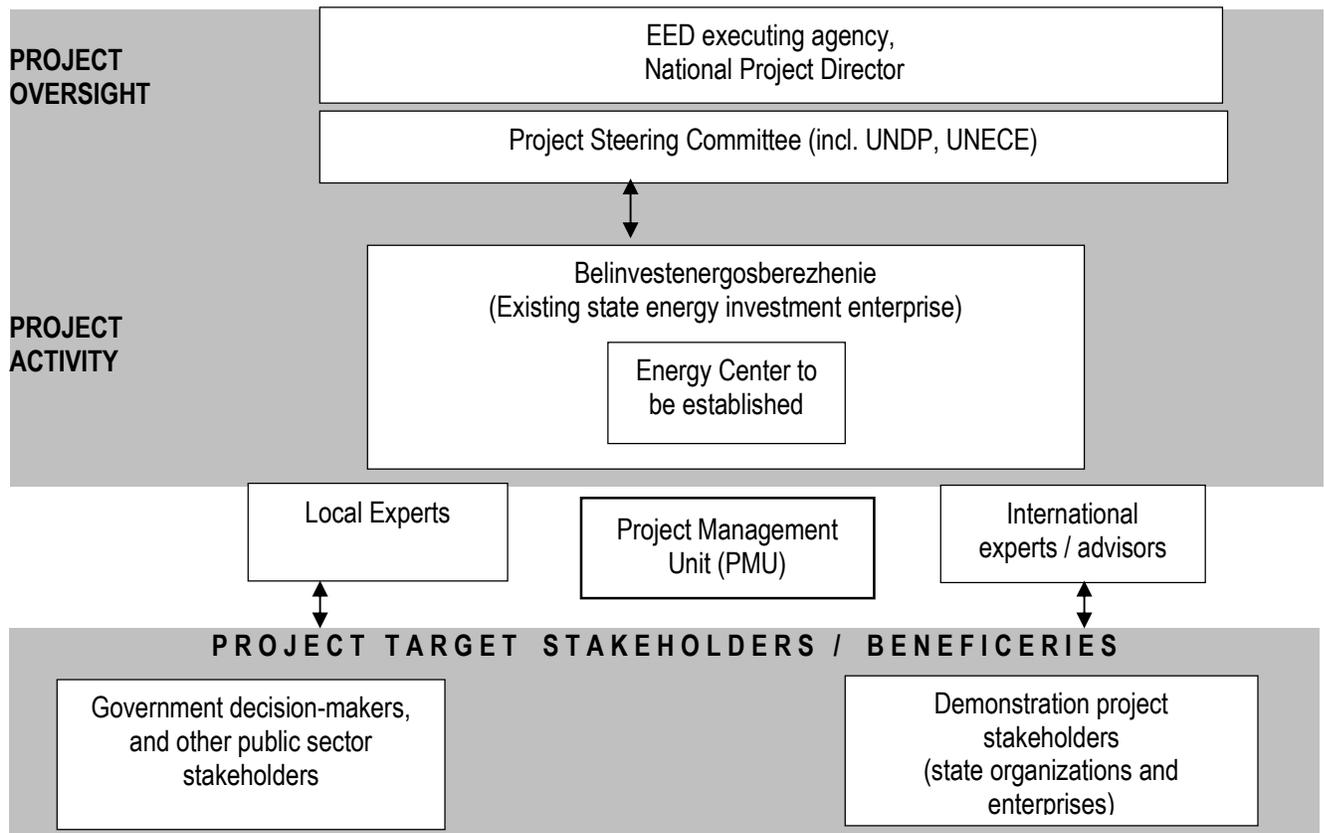
- Department of Energy Efficiency and oblast branches;

- Ministry of Natural Resources and Environment;
- Ministry of Economy;
- Ministry of Housing and Public Utilities;
- Representatives of Municipalities from the cities of Mogilev and Vitebsk; and
- Representatives of all investment project sites.

The executing agency for this Project has been the Department of Energy Efficiency (EED) of the Republic of Belarus. The EED was “downgraded” in 2006 from the stand-alone State Committee on EE. The EED now reports to the State Committee for Standardization (responsible for the setting of energy intensity targets or energy norms) subordinated directly to the Council of Ministers, and has worked closely with the Ministry of Natural Resources and Environmental Protection, designated as the government-implementing agency under the UNFCCC. The mandate of EED is to promote energy efficiency and to monitor compliance with energy efficiency targets for national agencies, regions, districts, cities, towns, municipalities and enterprises. To support this mandate, they operate branches in each of the seven oblasts throughout Belarus.

PMU functions included oversight management of all project activities.

Figure 2: Current Project Implementation Arrangements



2. KEY FINDINGS

2.1 Project Progress and Achievements to Date

The Project has been designed to reduce GHG emissions through removing barriers to energy efficiency improvements within the state sector in Belarus. As such, the Project has undertaken an integrated series of measures designed to remove these barriers that hinder widespread adoption of EE improvements in state-owned and operated assets. Actual Project achievements and progress are listed in Table 1 against the 2008 Project log-frame¹⁹.

Changes to the Project log-frame as detailed in Table 1, are also discussed in Section 2.3.2. The original Project log-frame from 2006 is shown in Appendix D.

2.1.1 Project Outcomes

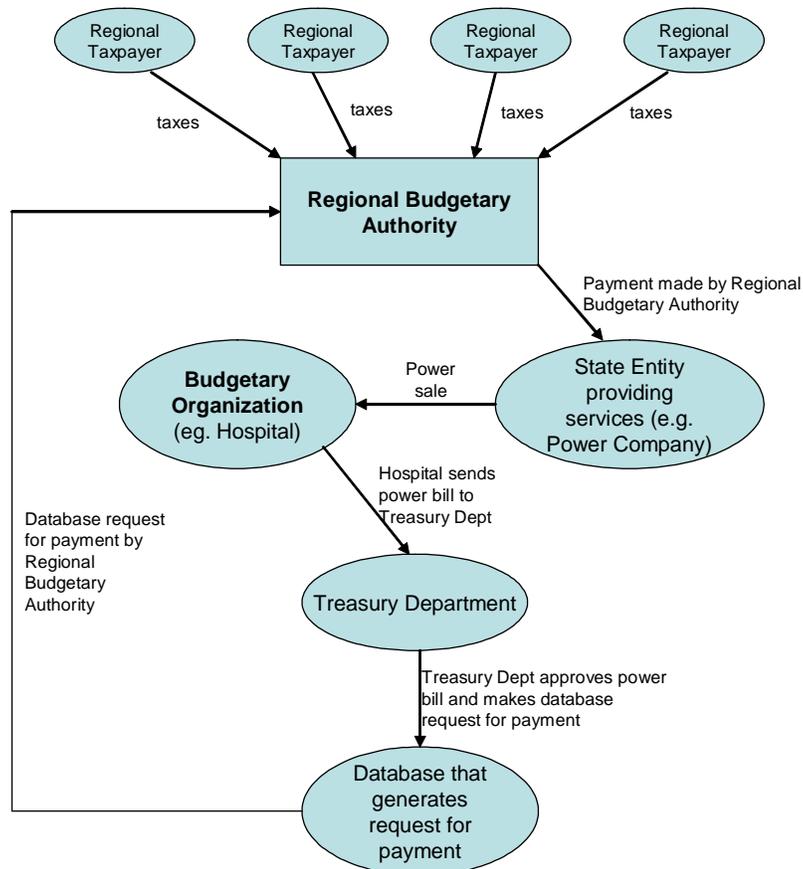
⇒ Slow adoption of incentives for state budgetary organizations to invest in energy efficiency (Outcome 1). Budgetary organizations have had difficulties adopting the incentives as proposed in the original log-frame. Reasons for this includes:

- *Determination of energy budgets using energy “norms” requires reforming of rigid budgeting procedures that are controlled by high-level committees.* Energy norms have been determined by the State Committee for Standardization and supervised by the EED and its regional departments to guide state energy consumption as a means of encouraging energy efficiency. There is, however, no motivation for a state budgetary organization to reduce its energy consumption below the energy norm since annual energy budgets continue to be determined by regional budgetary authorities based on actual energy consumption of the previous year. Hence, for the Project to influence the budgeting process, it would need to work with the Ministry of Finance and the Ministry of Taxation, which the Project has been unable to do. As such, energy efficiency goals of budgetary organizations will likely not be realized through this mechanism during the Project;
- *The use of “settlement accounts” into which energy savings can be deposited by a budgetary organization is not feasible given that the organization does not even manage its own operational funding.* Hence, any funds generated from energy savings by the state budgetary organization are used by the regional budgetary authorities to fund shortfalls in other budget lines in the same account. An example includes settlement accounts being used to fund shortages in salary budget lines. To protect settlement accounts from being used for these purposes, they need to be setup by the regional budgeting authorities as a special account with “protected” status. In practice, this is difficult and requires alignment with Ministry of Finance and Ministry of Taxation laws;
- *Staff incentives are being awarded in budgetary organizations for results of energy efficiency improvements. The funds for staff incentives, however, are “budgeted” as additional salary or bonuses and given based on performance.* In some instances,

¹⁹ This log-frame was amended in 2008 by Project staff from the original 2006 log-frame

there have been no bonuses due to insufficient funds. Figure 3 provides a schematic of cash flows within a budgetary organization.

Figure 3: Cash Flows between a Budgetary Organization and Regional Budgeting Authorities



⇒ The Project has assisted in drafting regulations to increase the share of loan finance to grant finance for EE project. Approval of the draft regulation to shift state EE funds towards loan-based finance, however, has been deferred indefinitely (Outcome 2.2).

The approval of this regulation would have dramatically increased the efficiency of the state funds. The impact of this deferral, however, has been somewhat mitigated due to the Project employing ESCOs who have been able to raise 100% and 75% financing and implementation on two EE projects. Furthermore, the Project has found the means to increase the share of loan finance with quasi-state budgetary organizations through “simple partnership agreements” with JSC companies or ESCOs.

⇒ *The Project has demonstrated the efficient use of available financial resources for EE investment plans (related to Outcome 2.4).*

The Project has facilitated the development of two EE investment plans using Minsk-based ESCOs, JSC companies and Belinvestbank and Belvnesheconombank. Two EE investments at JSC “Krasnoselskstroyaterialy” and JSC “Beriozastroymaterial” were financed through 100% and 75% commercial loan funding respectively. ESCOs have also taken the lead role of developing, engineering and operating the project.

⇒ *The Energy Center is close to be becoming a legal entity that promotes and facilitates the development of EE improvements (Outcome 3.1).*

The MTE Mission was informed by the NPD that the legalization of the Energy Center (EC) was being discussed with the target date for legalization being September or October 2009. The EED recognize the value of the EC as it fulfils a large service void in identifying good EE investment opportunities and developing a pipeline of EE investments that can be implemented after GEF support is withdrawn. In addition, the legalization will raise the profile Energy Center and strengthen its outreach and portfolio of EE investment opportunities.

Table 1: Project Progress Observed in July 2009

Intended Project Outcomes (taken from 2006 Prodoc Log-Frame “Strategy” and the 2008 APR-PIR and converted to “Intended Outcomes”)	Baseline (taken from 2006 Prodoc and revised 2008 log-frame with recommended changes in bold italics font and striketrough font)	Targets (formerly “Indicators”) (taken from 2006 Prodoc and revised 2008 log-frame with recommended changes in bold italics font and striketrough font)	Outcomes as of July 2009
<p>Project Goal: Reduction of GHG emissions. Reduction of fossil fuels consumption.</p> <p>Recommended re-wording: To reduce GHG emissions through energy efficiency improvements and the reduction of fossil fuel consumption</p>	<ul style="list-style-type: none"> 0 tons of CO₂ equivalent 	<p>Specific results from the successful implementation of the project will be investments by Belarusian investors of no less than US\$ 8 million, including US\$ 2.9 million from the Energy Efficiency Department (EED) during project implementation. The direct global environmental benefits will make about 23,500 tons of CO₂ equivalent in annual reductions of GHG emissions. The project implementation will yield, through fuel savings, reduction of GHG emissions equal to approximately 352,500 tons of CO₂ over a 15-year period.</p> <p>Recommended re-wording: Annual GHG reductions of 23,500 tonnes CO₂, and cumulative GHG reductions of 352,500 tonnes CO₂ over a 15-year period</p>	<p><i>Partially achieved. Annual GHG emission reductions after 62% completion of the Project duration (as of June 30, 2009) from implementing EE projects is 43,924 tonne or 187% of the 23,500 tonne CO_{2eq} annual target. Over a 15-year period, the cumulative GHG reductions would be 617.344.</i></p>
<p>Project Purpose: Influx of internal investment in energy efficiency projects in the state sector increased as the result of the project implementation.</p> <p>To increase investment in energy efficiency projects in the state sector</p>	<p>The state sector consumes 68% of total fuel and energy resources. There is low interest of investors, low level of motivation and poor capacity in the state sector. State investment funds for energy efficiency are under- utilized.</p>	<ul style="list-style-type: none"> Direct project annual emission reductions amounting to no less than of 23,500 tonnes CO₂ equivalent by the end of the project No less than US\$8 million invested in energy efficiency in the public sector (including US\$1.0 million in loan funds) during the Project Additional agreements signed for no less than US\$10 million (including US\$5.0 million in loans) to be implemented after the Project 	<ul style="list-style-type: none"> <i>US\$15.1 million invested in energy efficiency improvements as a direct result of the participation of the Energy Center established within the Project of which US\$10.9 million was raised through loan finance</i> <i>Pipeline of investment plans for implementation after the Project has not been</i>
<p>Outcome 1: Increased incentives for state organizations to invest in energy efficiency</p>	<p>Targeted organizations invest no funds of their own in energy efficiency. Currently, EE funds are coming from state budget</p>	<ul style="list-style-type: none"> No less than US\$ 100,000 annually in investments in energy efficiency by targeted state organizations 10% of energy savings placed into an energy savings account for incentives within a budgetary organization <p>Recommended re-wording and target:</p>	<ul style="list-style-type: none"> Incentives are being adopted on a pilot scale; the incentives, however, are not funded directly from energy savings generated by EE activities

Table 1: Project Progress Observed in July 2009

Intended Project Outcomes (taken from 2006 Prodoc Log-Frame “Strategy” and the 2008 APR-PIR and converted to “Intended Outcomes”)	Baseline (taken from 2006 Prodoc and revised 2008 log-frame with recommended changes in <i>bold italics font</i> and strikethrough font)	Targets (formerly “Indicators”) (taken from 2006 Prodoc and revised 2008 log-frame with recommended changes in <i>bold italics font</i> and strikethrough font)	Outcomes as of July 2009
		<i>No less than 4 “quasi” state organizations using energy norms for annual budgeting and simple partnership agreements (SPAs) to increase their EE investments</i>	
Outcome 1.1: State organizations’ annual energy budgets are drawn and financed based on energy “norms” as mandated by the 1998 Cabinet of Ministers regulation 158.2	State organizations’ energy budgets are drawn up based on previous year’s consumption, rather than energy norms	No less than 30 budgetary organizations using energy norms to estimate their annual budget requirements <i>Recommended re-wording and target:</i> <i>No less than 4 “quasi” state organizations using energy norms to estimate their annual budget requirements for energy expenditures</i>	<ul style="list-style-type: none"> • 5 state organizations have established energy norms for estimating annual budget requirements for energy expenditures • If state organization uses less energy than set by energy norms, budget is reduced for the following year that reduces or eliminates any savings to be transferred into a settlement account
Outcome 1.2: State organizations are depositing their energy savings into settlement accounts. <i>Recommended reset of outcome: “Quasi-state organizations” are using SPAs to implement their EE investments with the assistance of the Energy Center</i>	No budget organizations deposit their energy savings into a settlement account	No less than 30 budgetary organizations are depositing their energy savings into settlement accounts <i>Recommended re-wording and target:</i> <i>No less than 4 SPAs to implement their EE investments with the assistance of the Energy Center by the end of the Project</i>	<ul style="list-style-type: none"> • No state organizations using settlement accounts due to restrictions in structure of the state budgeting process and a conflict between MoF (who decide how budgets are spent), Regional Budgetary Authorities and MoT (who are responsible for revenue collection into the budget). Details are available in Section 2.1.1. • Overall outcome of using settlements accounts as an incentive for EE investments will not be achieved by this method since the barrier lies with the MoF, Regional Budgetary Authority and the MoT, stakeholders with whom the Project will require significant efforts to remove barriers to EE investments • “Quasi” state organizations (such as the Communal Housing Enterprise in Lida) can have a “simple partnership

Table 1: Project Progress Observed in July 2009

Intended Project Outcomes (taken from 2006 Prodoc Log-Frame “Strategy” and the 2008 APR-PIR and converted to “Intended Outcomes”)	Baseline (taken from 2006 Prodoc and revised 2008 log-frame with recommended changes in <i>bold italics font</i> and strikethrough font)	Targets (formerly “Indicators”) (taken from 2006 Prodoc and revised 2008 log-frame with recommended changes in <i>bold italics font</i> and strikethrough font)	Outcomes as of July 2009
			<p>agreement” (as specified in the “Civil Code of Belarus”)</p> <ul style="list-style-type: none"> • A new outcome and target should be set in place of “old” outcome
<p>Outcome 1.3: State organizations are issuing incentives to staff responsible for energy efficiency</p>	<p>No state organizations issue incentives to staff responsible for increasing energy efficiency, which are linked directly to the energy efficiency results achieved</p>	<p>No less than 30 budgetary organizations issuing incentives to staff responsible for increasing their levels of investment in energy efficiency</p> <p>Recommended re-wording and target:</p> <ul style="list-style-type: none"> • <i>Draft recommendations to EED on improving incentives for EE investments in state organizations through legislation</i> • <i>4 SPAs that contain clause specifying allocation of profits towards account for staff bonuses for EE investments</i> 	<ul style="list-style-type: none"> • A total of 5 state organizations are issuing incentives to staff who are responsible for energy efficiency investments in their organizations from savings from “salary funds”.
<p>Outcome 2 Financial resources available to the state enterprises for energy efficiency investment are used more efficiently</p>	<p>4% of state resources available as loans</p>	<p>No less than US\$ 50 million by the end of the project of state grants and commercial loan funds used for energy efficiency improvements</p> <p>Recommended re-wording: EE investment program arranged by the Project uses grants and a minimum 50% from commercial loans</p>	<ul style="list-style-type: none"> • Two large EE investments involving the installation of energy efficient natural gas boilers has been made with significant changes to financing arrangements (25% equity and 75% loan finance)
<p>Outcome 2.1: Capacity of state <i>Improved qualifications of nationally accredited organizations and national experts</i> is enhanced to conduct energy audits according to <i>international best practices standards and</i></p>	<p>30% of audits submitted (To be verified based on the analysis by the International Training Consultant in the first quarter of the 2nd project year)</p>	<ul style="list-style-type: none"> • 60% of all energy audits submitted to EED that meet international standards <i>by the end of the Project</i> • <i>Training of 25 national experts on energy business planning, energy auditing and estimates of GHG reductions</i> 	<ul style="list-style-type: none"> • Training program for energy audits and business planning delivered by international consultant in September 2009.

Table 1: Project Progress Observed in July 2009

Intended Project Outcomes (taken from 2006 Prodoc Log-Frame “Strategy” and the 2008 APR-PIR and converted to “Intended Outcomes”)	Baseline (taken from 2006 Prodoc and revised 2008 log-frame with recommended changes in <i>bold italics font</i> and striketrough font)	Targets (formerly “Indicators”) (taken from 2006 Prodoc and revised 2008 log-frame with recommended changes in <i>bold italics font</i> and striketrough font)	Outcomes as of July 2009
<i>business planning</i>			
Outcome 2.2: Proportion of loans to grants offered by the state for energy efficiency <i>offered by the state</i> is increased	No regulation on increase of portion of loans available	<ul style="list-style-type: none"> • Feasibility study of increasing the share of loan financing to grant financing • New government regulations are put in force to increase the portion of loans compared to grants • Percentage of total capital finance of EED given in loans is increased from 3% to 10% 	<ul style="list-style-type: none"> • The Project through the Energy Center and EED has facilitated a number of EE investments totaling US\$15.1 million of which US\$10.9 million was loan finance • Approval of draft government regulations to increase the portion of loans to grants has been deferred.
Outcome 2.3: The capacity of state enterprises is enhanced to use loan finance instead of grants for energy efficiency projects <i>Recommendation to combine this outcome with Outcome 2.1</i>	Project partners use zero credit funds from CEE	<ul style="list-style-type: none"> • Training of national experts on energy business planning, financial economics, and energy audits 	<ul style="list-style-type: none"> • <i>Training program for energy audits and business planning delivered by Russian consultant early in 2009.</i>
Outcome 2.3: Project investments in energy efficiency are secured <i>Project secures EE investments using loan, grant and equity financial resources</i>	No agreements signed	<ul style="list-style-type: none"> • Business plans for US\$8.0 million Investment program of EE projects developed including US\$1.0 million in loan finance from EED • Consulting services provided to at least 5 enterprises within the investment program • Draft of national GHG reduction calculations for EE and RE projects 	<ul style="list-style-type: none"> • Business plans for US\$15.1 million have been developed. This includes US\$10.9 million in loan finance • Consulting services provided by Project staff to 4 enterprises in the investment program
Outcome 3 <i>Energy efficiency investment</i> Project successes throughout Belarus sustained and replicated	No Energy Center, limited investments in loans for energy efficiency	<ul style="list-style-type: none"> • Energy Center (EC) is a self-supporting consulting institution by the end of the Project 	<ul style="list-style-type: none"> • <i>Proposals have been presented to EED for the legalization of the Energy Center as a self-supporting consulting institution.</i>

Table 1: Project Progress Observed in July 2009

Intended Project Outcomes (taken from 2006 Prodoc Log-Frame “Strategy” and the 2008 APR-PIR and converted to “Intended Outcomes”)	Baseline (taken from 2006 Prodoc and revised 2008 log-frame with recommended changes in bold italics font and striketrough font)	Targets (formerly “Indicators”) (taken from 2006 Prodoc and revised 2008 log-frame with recommended changes in bold italics font and striketrough font)	Outcomes as of July 2009
Outcome 3.1: Energy Center is established to support ing state enterprises in mobilizing loan, grant and equity finances and to implementing EE improvements	No energy center	<ul style="list-style-type: none"> • Papers establishing the Energy Center as a legal entity • Energy Center contains an information database and technical expertise useful for developing EE projects • 100% of costs of the Energy Center covered by business revenues by the end of the Project 	<ul style="list-style-type: none"> • <i>EED is currently meeting on corporate structure of EC that is being proposed as a closed JSC without state partners</i> • <i>The Energy Center is housed within the Project and is developing an information database (using a demonstration version of an information software) along with technical expertise in the areas of energy efficient power generation and EE for appliances</i>
Outcome 3.2: A pipeline of EE projects is developed	No investment program	<i>New investment program</i> Projects totaling more than US\$ 10 mil (including minimum US\$5 mil in loan finance) of new investment program adopted by the EED by the end of the Project	<i>Discussions have started with other state-owned enterprises to implement EE investment plans</i>
Outcome 3.3: Number of projects and Energy Center's partners is expanded <i>Recommended re-wording: Outreach of Energy Center is enhanced to foster partnerships and an increased number of projects</i>	<i>No Energy Center and no outreach</i>	<ul style="list-style-type: none"> • A minimum 30 of additional agreements of new partnership agreements signed by the Energy Centre signed by the end of the Project • Ongoing information campaign about Project <i>and Energy Center</i> activities • <i>5 cooperation agreements</i> contacts between Energy Center and EE institutions in Belarus and abroad <i>by the end of the Project</i> 	<ul style="list-style-type: none"> • <i>Ongoing information campaign not yet started due to delays in the legalization of the Energy Center</i> • <i>Already signed 4 cooperation agreements that will be strengthened when Energy Center is legalized</i>

2.1.2 Project Impacts

The Project to date has made a number of impacts including:

- Use of energy norms on a pilot basis by 5 state organizations in estimating their annual energy budget requirements (3 budgetary organizations in pilot Mogilev region and 2 in the pilot Vitebsk region). The Project studied EE opportunities as selected by Mogilev and Vitebsk regional executive committees with the objective of preparing recommendations on implementing technically-based energy norms for budgeting, and on the provision of incentives for key staff in these organizations to increase EE investments;
- Investment plans of US\$15.1 million being implemented with state enterprises, ESCOs and commercial banks of which US\$10.9 million was financed through loans. Table 2 provides a listing of these investment plans;
- Increased capacity of national energy experts on energy business planning and energy audits;
- A draft regulation to increase the proportion of loan to grant finances for EE projects. Approval of this draft, however, has been placed on hold by the GoB;
- The development of an “Energy Center”. Currently, the Center is under the management of the Government of Belarus (GoB) under the Department of Energy Efficiency (EED) that provides services in the identification and pre-feasibility study of EE projects involving state sector assets in Belarus. The EED is currently working on establishing the Energy Center as a legal autonomous and self-sustained organization that will provide consulting services to facilitate development of EE investments throughout Belarus.

Energy savings and GHG emission reductions have been calculated by the Project. For example, energy saving on the JSC Krasnoselskstroyaterialy is calculated:

$$\Rightarrow (\text{energy intensity of Lukoml plant (0.000317 TCE/kWh)}) - (\text{energy intensity of new plant (0.000165 TCE/kWh)}) \times (12,500,000 \text{ kWh generated since the start of commissioning}) = 1,900 \text{ TCE}$$

Table 2: Summary of Current EE Projects

Project Name	Description	Energy Saving to 30 June/09 (TCE)*	CO ₂ Reduction to 30 June/09 (tonne CO _{2eq})*	Actual Investment (USD thousand)		
				Total	Equity	Loans
JSC "Krasnoselskstroyaterialy"	Conversion of the boiler house to mini-CHP plant with installed power generation capacity of 4.86 MW on March 1, 2009	1,900	5,197	9,780	0	9,780
JSC "Keramika", Vitebsk	Installation of 2.8 MW power plant with gas-reciprocating engine on July 12, 2008	2,550	6,974	3,272	3,272	0
	Installation of variable frequency blow fans on February 2, 2008	154	421	32	32	0
	Replacement of liquid-packed ring vacuum pumps with oil pumps on January 15, 2008	548	1,499	63	63	0
	Installation of automated burners in furnaces on May 10, 2009	15	41	216	216	0
JSC "Beriozastroymaterial"	Installation of one 1.0 MW gas reciprocating engine for power generation on August 1, 2008	885	2,420	1,609	396	1,213
	Isolation of the furnace on July 15, 2008	1,700	4,403	38	38	0
	Installation of energy efficient burners at the furnace on July 15, 2008	920	2,516	59	59	0
Ivatsevichy Town Utility	Replacement of pumps at the boiler house and the water supply point on October 5, 2007	96	263	25	25	0
	Installation of variable frequency drives at the water supply point on October 5, 2007	11	30	5	5	0
	Installation of temperature regulators for hot water supply at the boiler house and central heat supply station on September 20, 2007	115	315	12	12	0
	Commenced use of gas analyzer at boiler house to optimize combustion on October 10, 2007	94	257	6	6	0
Totals:		8,898**	24,336***	15,117	4,124	10,993

* Cumulative savings and emission reduction from EC projects implemented up to June 2009. The cumulative figures reflect energy savings or CO₂ reductions starting from the commencement of Project to the date indicated

** This information has been collected from state organizations and requires independent verification by Project staff or energy auditors

*** These figures are converted into an annual equivalent of CO₂ reductions in Table 3.

The Evaluator is encouraging the Project to become familiar with methodologies used by GEF and CDM project developers in providing more detailed GHG calculations. Familiarity with methodologies will enable the Project to improve their verification of GHG emission reductions of their EE projects. Methodologies are included in:

- the “Manual for Calculating GHG Benefits of GEF Projects: Energy Efficiency and Renewable Energy Projects, April 16, 2008 (GEF/C.33/Inf.18)”⁸; and
- CDM Executive Board methodologies (AM0036 for boilers, ACM0011 for fuel switching from coal and/or petroleum fuels to natural gas in existing power plants for electricity generation, and ACM0013 for new grid connected fossil fuel fired power plants using a less GHG intensive technology)⁹;

Table 3 summarizes GHG reductions figures from the enterprises. The GHG reductions are presented in the format presented in the guidelines “Manual for Calculating GHG Benefits of GEF Projects: Energy Efficiency and Renewable Energy Projects, April 16, 2008 (GEF/C.33/Inf.18)”.

Table 3: Summary of CO₂ Reductions from the Project¹⁴

Direct emission reduction ¹⁰ from EE projects in state enterprises and quasi-state organizations, t CO ₂	87,857
Direct emission reduction from EE projects in state organizations ¹¹ , t CO ₂	1,608
Total direct emission reduction, t CO₂ (projected to December 31, 2010)	89,465
Direct post-project emission reduction ¹² from EE projects in state enterprises and quasi-state organizations, t CO ₂	429,234
Direct post-project emission reduction from EE projects in state organizations, t CO ₂	4,958
Total direct post-project emission reduction, t CO₂	434,192
Indirect emission reduction ¹³ from EE projects in state enterprises and quasi-state organizations, t CO ₂	0
Indirect emission reduction from EE projects in state organizations, t CO ₂	0
Indirect emission reduction, t CO₂	0
TOTAL EMISSION REDUCTIONS DUE TO UNDP-GEF PROJECT, t CO₂ (10-yr cumulative after completion of the Project up to 2018)	523,656

⁸ http://www.gefweb.org/uploadedFiles/Documents/Council_Documents_%28PDF_DOC%29/GEF_33/C.33.Inf.18%20Climate%20Manual.pdf

⁹ See <http://cdm.unfccc.int/methodologies/PAMethodologies/approved.html> for all approved CDM methodologies

¹⁰ Direct impacts can be considered for EE projects with state enterprises and quasi-state organizations that are generated over the duration of the Project (up to June 30, 2009)

¹¹ Direct impacts from EE incentives for state organizations

¹² Due to the investments supported by GEF financial mechanisms (e.g. setting up of loan finance) that will continue to operate a minimum of 5 years after the end of the Project. A period of 10 years is recommended by GEF manual or less depending on service life of EE intervention.

¹³ Indirect emissions are from “Impact” projects developed with knowledge imparted by Project personnel. Thus far, none have been reported by the Project

¹⁴ CO₂ reductions are based on the accepted grid emissions factor for the Belarus electricity grid of 0.43 tCO₂/MWh. This factor is can be found on the Ministry of Natural Resources and Environmental Protection website or at: http://www.climate-by.com/Files/Docs/1196336034_JI_Guidance_Vol_No1.pdf

While the Project has the potential to have a significant impact, the evaluator has noted:

- the need for an alternative strategy to the use of settlement accounts as a means of tracking energy savings and encouraging EE investments within budgetary organizations;
- a need to strengthen staff incentives for increasing EE investment as the source of incentives is not related to energy savings;
- delays in the government approval process for the regulation to increase the proportion of loan to grant finance. An alternative approach is required to increasing loan finance proportions given the high likelihood that the government approval process for the regulation will not be revived during the Project;
- the need for improved outreach of the Project preferably through the Energy Center;
- consideration should be given to strengthening the capacity of the ESCO sector in Belarus;
- an urgency to have the EED provide the necessary support for the Project. Currently, the Project has not received significant financial support from the EED. This has resulted in slower implementation of the Project, valuable resources spent on finding office space and overcoming administrative problems, reduced profile (as the Project and Energy Center are managed under the EED), lesser Project outreach concerning its facilitation of EE investments, and lack of allocated Project resources to meter energy use and monitor GHG reductions at specific EE investment sites.

2.2 Project Design and Relevance

2.2.1 Project Relevance and Country Drivenness

The Project targets the removal of barriers to widespread investments in EE in the state sector of Belarus. Moreover, the state sector consumes more than 68% of the country's energy resources and hence, the impact of the project is potentially significant. Energy efficiency in Belarus is a high priority given its 80% dependence on imported fossil fuels from Russia, and its exposure to world fuel prices. As such, Belarus places a high priority on reducing its dependence on this fuel source through energy efficiency and domestic power generation.

This Project is highly relevant to developmental priorities of Belarus in regards to energy conservation, raising the capacities of state organizations to manage these issues, implementing EE projects to international standards and minimizing the need to import energy from neighboring countries. As such, country ownership and drivenness for this Project is strong.

2.2.2 Project Design and Implementation Approach

Project design is logical in its approach to increase EE investments in the state sector. However, the design includes reforms in budgetary procedures which may have been too ambitious given current budgetary practices are firmly entrenched, rigid and difficult to change. Changes in legislation on budgeting procedures in general require ample time involving the Ministry of Taxation and the Ministry of Finance; the Project design and

implementation arrangements would have been further complicated. It may not have been realistic to accomplish such changes in legislation during the 4-year Project period.

Implementation of technical assistance delivery has been in accordance with the work plan and has worked towards achieving project objectives including:

- a number of actions to incentivize state budgetary organizations to increase their investments into energy efficiency initiatives;
- increasing the capacity of state enterprises to conduct energy audits and increase the share of loan finance to grant finances; and
- finalizing the creation of the Energy Center and enabling it to increase its outreach and services to state enterprises for energy efficiency.

The implementation approach of the Project has yielded a modest number of achievements at the Project mid-point. However, a change in Project strategy is required to address a number of design issues including:

- an alternative to settlement accounts;
- sustaining staff incentives to increase EE investments despite the fact that funds for these incentives are not from energy savings;
- the means of increasing the proportion of loan to grant finances for EE projects without the benefit of a government regulation; and
- raising the Project profile to potential EE project partners.

Operational issues that require adjustment to improve the efficiency and impact of project delivery include:

- ⇒ focusing attention on building the capacity of the Energy Center as a legal autonomous entity. Once established as a legal entity, the EC should have a fully functional office complete with internet connections, a website, phone connections, office equipment and a stable office address;
- ⇒ improving the M&E system to improve tracking of Project progress. A number of changes have been made with the latest Project log-frame (from 2008) to overcome the difficulties in linking the targets and indicators. Further changes are required as detailed in Table 1;
- ⇒ providing sufficient resources to effectively monitor EE investments. The Project has been unable to monitor effectively GHG reductions of EE investments developed. Changes are required to allocate sufficient funds for metering equipment and human resources to monitor energy usage and GHG reductions on EE investments developed by the Project.

2.3 Project Implementation Arrangements

2.3.1 Stakeholder Involvement, Linkages to Project and Other Interventions in Sector

The evaluator concludes that there are few if any linkages to other EE projects. Moreover, there is likely minimal value for the Project to liaise with other donor-funded projects including

the World Bank “Social Infrastructure Retrofitting Project” (BY-7056) and the Belarus Post-Chernobyl Recovery Project (Loan No. 4821-BY).

The recently approved World Bank loan project “Belarus Energy Efficiency Project” (US\$125 million) is set to commence in September 2009, and provides capital through the Ministry of Finance for the planning, design and construction of the conversion of existing heat-only-boiler plants to combined heat and power plants for budgetary organizations (i.e. schools and medical facilities). This includes large CHP facilities for Minsk and Mogilev as well as a number of other smaller plants that are less than 3 MW. This WB loan project overlaps Project work in Outcome 1 by providing EE capital to targeted budgetary organizations, and would diminish the importance of Outcome 1.3 (Issuance of incentives to staff responsible for EE investments). As a possible consequence of the WB project, the Project may need to consider re-allocating its resources from Outcome 1.3 to other Project priorities.

2.3.2 Management, Monitoring and Evaluation, Identification and Management of Risk

Management and coordination of the Project has been satisfactory notwithstanding the setbacks concerning settlement accounts, the stalled approval of the draft regulation that increases loan to grant financing, and the additional efforts expended to legalize the Energy Center. PIRs have provided documentation to identify and manage Project risks, and Project personnel appear diligent in identification of risks in all PIRs. However, more emphasis is required for the Project to monitor energy usage and GHG reductions from its EE investment development activities.

Changes were made to the original 2006 Project log-frame in 2008. The log-frame, however, in its current 2008 form, still requires clarification and re-wording to increase its effectiveness as a monitoring tool. On Table 1, the Evaluation team has made some suggested edits to the 2008 log-frame including:

- changing of “strategies” to intended “outcomes”;
- changing “indicators” to “targets”; and
- rewording of various outcomes and targets for clarity.

These edits are intended to assist the PMU in tracking progress, and to conform to the latest UNDP-GEF log-frame formats of July 2009.

The Project also requires support from the UNDP CO to ensure its annual reporting (PIRs and APRs) are in consistent formats and that the changes reported are consistent with the log-frame. As such, suggestions have been made to the 2008 log-frame to assist in monitoring the Project effectively.

2.4 Project Budget and Cost Effectiveness

Table 4 presents an overview of expenditures of the GEF contribution to the budget. Expenditures until July 6, 2009 were an estimated US\$330,082. Project disbursements were 39% in 2007 and 40% in 2008 of AWP targets. Considering the achievements of the Project, the disbursements have been cost effective including the demonstration of loan finance for EE investments at JSC “Krasnoselskstroyaterialy” and JSC “Beriozastroymaterial”. However, the lack of disbursements for foreign consultants, equipment, software and other expenditures

has hampered Project progress in achieving its intended outcomes such as a fully functional and legal Energy Center. *With the Project more than 62% complete in duration, only 23% of the USD 1.4 million GEF grant has been disbursed.*

Table 5 presents a summary of Project co-financing. Project co-financing is equivalent to USD 15.16 million, 83% higher than the proposed committed co-finance for Project in the Prodoc of USD 8.37 million. While these co-financing ratios are a good indication of GEF leveraging, the low contribution by the EED to the Project is a concern. The EED were committed to providing support for the PMU to form the Energy Center. The lack of EED co-financing advanced thus far to the Project has adversely affected the operations of the Energy Center for almost one year without support for office rent, telephone and office equipment. This has resulted in valuable Project resources expended on obtaining the requisite EED co-financing support.

Table 4: Project Budget and Expenditures for 2007, 2008 and 2009 (July 6/09)

Project expenses	2007	2008	2009 (up to July 6/09)	unspent 2009	2007-2009	Total Remaining (2010 - ?)
Foreign personnel, consultants	3,444	38,159	30,388	85,112	157,102	
National experts and consultants	59,675	99,253	64,064	113,936	336,928	
Procurement of equipment for laboratory of monitoring and project GIS	847	9,341	8,976	29,024	48,188	
Procurement of services in Belarus*	1,344	1,062	2,340	17,740	22,487	
Project conferences, seminars, round tables	3,202	2,236	-	2,500	7,938	
Study tours abroad and training seminars and sites visits in Belarus	-	-	2,319	3,681	6,000	
Other	1,286	1,746	400	1,900	5,332	
Total	69,798	151,797	108,487	253,893	583,975	816,025

Table 5: Co-Financing and Leveraged Resources

Co financing (Type/ Source)	IA own Financing (mill US\$)		Multi-lateral Agencies (Non-GEF) (mill US\$)		Bilateral Donors (mill US\$)		Central Government ¹⁵ (mill US\$)		Local Government (mill US\$)		Private Sector (mill US\$)		NGOs (mill US\$)		Total Financing (mill US\$)		Total Disbursement (mill US\$)	
	Pro-posed	Actual	Pro-posed	Actual	Pro-posed	Actual	Pro-posed	Actual	Pro-posed	Actual	Pro-posed	Actual	Pro-posed	Actual	Pro-posed	Actual	Pro-posed	Actual
Grant							2.00										2.00	
Credits							1.00										1.00	
Loans												10.99						10.99
Equity									5.12	4.13							5.12	4.13
In-kind			0.10 ¹⁶				0.15	0.04									0.25	0.04
Non-grant Instruments																		
Other Types																		
TOTAL							3.15	0.04	5.12	4.13		10.99					8.37	15.16

¹⁵ Resources from EED¹⁶ UNECE

2.4.1 Evaluation of Project

Table 6 provides an evaluation of the current outcomes of each Project output. Each output was evaluated against individual criterion of:

- *Relevance* – the extent to which the activity is suited to local and national development priorities and organizational policies, including changes over time.
- *Effectiveness* – the extent to which an objective has been achieved or how likely it is to be achieved.
- *Efficiency* – the extent to which results have been delivered with the least costly resources possible.
- *Results/impacts* – the positive and negative, and foreseen and unforeseen, changes to and effects produced by a development intervention. In GEF terms, results include direct project outputs, short-to-medium term outcomes, and longer-term impact including global environmental benefits, replication effects and other, local effects.
- *Sustainability* – the likely ability of an intervention to continue to deliver benefits for an extended period of time after completion. Projects need to be environmentally as well as financially and socially sustainable.

The Project outputs were rated based on the following scale:

- *Highly Satisfactory (HS)*: The project has no shortcomings in the achievement of its objectives;
- *Satisfactory (S)*: The project has minor shortcomings in the achievement of its objectives;
- *Moderately Satisfactory (MS)*: The project has moderate shortcomings in the achievement of its objectives;
- *Moderately Unsatisfactory (MU)*: The project has significant shortcomings in the achievement of its objectives;
- *Unsatisfactory (U)*: The project has major shortcomings in the achievement of its objectives;
- *Highly Unsatisfactory (HU)*: The project has severe shortcomings in the achievement of its objectives.

The overall rating of the Project in terms of project progress is “Moderately Satisfactory” (MS), mainly due to the design problems and the need to reset the targets of Outcome 1, and the slow progress in the legalization of the Energy Center. A summary of ratings for the individual components is provided in Table 6 in this document.

Rationale for the ratings includes:

- Outcome 1 rated as “MU” due to basic design problems including the creation of settlement accounts not being feasible and staff incentives not being directly linked to energy savings;
- Outcome 2 rated as “S” due to successful demonstrations of EE projects that had significant loan financing components;
- Outcome 3 rated as “S” due to efforts by the Project to identify EE projects and loan financing sources

Table 6: Evaluation of Project Activities and Outputs (as of June 2009)¹⁷

Project Outcome	Relevance	Efficiency	Effectiveness	Results / Impacts	Overall Rating
Outcome 1: Increased incentives for state organizations to invest in EE	MS	MS	MU	MU	MU
Outcome 1.1: State organizations using energy “norms” or standard intensities to estimate their annual budget for energy expenditures	S	S	S	MU	S
Outcome 1.2: State organizations are depositing their energy savings into settlement accounts Recommended reset of outcome: “Quasi-state organizations” are using a SPA to implement their EE investments with the assistance of the Energy Center	U	MU	U	U	U
Outcome 1.3: State organizations are issuing incentives to staff responsible for energy efficiency to increase their level of EE investments	MS	S	MS	MS	MS
Outcome 2: Financial sources available to state sector for EE investments used more efficiently	S	S	S	S	S
Outcome 2.1: Capacity of state Improved qualifications of nationally accredited organizations and national experts is enhanced to conduct energy audits according to international best practices standards and business planning	S	S	S	Unable to rate	S
Outcome 2.2: Proportion of loans to grants offered by the state for energy efficiency offered by EED is increased (Note: this is related to drafting of regulations)	S	S	S	MS	S
Outcome 2.3: The capacity of state enterprises is enhanced to use loan finance instead of grants for energy efficiency projects Recommendation to combine this outcome with Outcome 2.1	S	S	S	Unable to rate	S
Outcome 2.3 4: Project investments in energy efficiency are secured Project secures EE investments using loan, grant and equity financial resources	HS	HS	HS	HS	HS
Outcome 3: Energy efficiency investment Project successes throughout Belarus sustained and replicated	S	S	MS	MS	S

¹⁷ *Highly Satisfactory (HS)*: The project has no shortcomings in the achievement of its objectives; *Satisfactory (S)*: The project has minor shortcomings in the achievement of its objectives; *Moderately Satisfactory (MS)*: The project has moderate shortcomings in the achievement of its objectives; *Moderately Unsatisfactory (MU)*: The project has significant shortcomings in the achievement of its objectives; *Unsatisfactory (U)*: The project has major shortcomings in the achievement of its objectives; *Highly Unsatisfactory (HU)*: The project has severe shortcomings in the achievement of its objectives.

Table 6: Evaluation of Project Activities and Outputs (as of June 2009)¹⁷

Project Outcome	Relevance	Efficiency	Effectiveness	Results / Impacts	Overall Rating
Outcome 3.1: Energy Center is established to supporting state enterprises in mobilizing <i>loan, grant and equity</i> finances and to implementing EE improvements	S	S	MS	MS	MS
Outcome 3.2: A pipeline of EE projects is developed <i>that can be implemented after the GEF Project is complete</i>	Unable to rate	Unable to rate	Unable to rate	Unable to rate	Unable to rate
Outcome 3.3: Number of projects and Energy Center's partners is expanded <i>Recommended re-wording: Outreach of Energy Center is enhanced to foster partnerships and an increased number of projects</i>	S	S	MS	MS	S
Monitoring and Evaluation	S	S	MS	S	S
Overall Rating					MS

Ratings would have improved if:

- the Project had achieved all intended outcomes that increase incentives for EE with state budgetary organizations. Instead, the Project will need to reset Outcome 1 targets; and
- legalization of the EC had been achieved at the mid-point of the Project. Legalization would allow the EC to become a self-sustaining entity that will acquire its own assets, manage its own personnel, generate its own activities, and develop a higher profile to become a major service provider for state organizations to develop EE projects. Instead, the pace of EE project development is slower due to limited involvement of EED in supporting the Project and selecting EE projects for development;
- there was a consistent format for monitoring project progress.

2.5 Sustainability and Replicability

2.5.1 Sustainability

In assessing the sustainability of the project, we asked, "how likely will 'immediate Project objectives' (from the 2004 Prodoc) be sustained after termination of the Project". Sustainability of these objectives was evaluated in the context of financial resources, socio-political risks, institutional framework and governance and environmental factors, using a simple ranking scheme:

- *Likely (L)*: very likely to continue and resources in place;
- *Moderately Likely (ML)*: model is viable, but funding or resources may not be in place;
- *Moderately Unlikely (MU)*: model is not viable or needs changing; and/or resources not in place; and
- *Unlikely (U)*: model is not viable and resources are not in place

The sustainability of the Project is rated as **ML (moderately likely)** due mainly to a lack of confirmed financial resources to continue activities in a post-project environment. The evaluation of each component is shown on Table 7. It is important to note that the index is simply to facilitate an assessment of future sustainability and is not a rating of the PMU and their consultants. Instead, it is a rating of the project design and viability going forward, including availability of budget and resources for continuation.

Table 7: Assessment of Sustainability for Objectives

Intended Outcome (outcomes reset as in Table 6)	Assessment of Sustainability	Dimensions of Sustainability
<p>Outcome 1: Increased incentives for state organizations to invest in EE through:</p> <ul style="list-style-type: none"> • state organizations using energy “norms” or standard intensities to estimate their annual budget for energy expenditures • Quasi-state organizations” are using a SPA to implement their EE investments with the assistance of the Energy Center • State organizations issuing incentives to staff responsible for energy efficiency to increase their level of EE investments 	<ul style="list-style-type: none"> • <i>Financial Resources:</i> With EE being a high GoB priority since the 1990s, fiscal resources from GoB have been made available to state organizations for EE investments. With the capital shortages from the recent financial crisis, the World Bank has provided capital resources into EE investments for budgetary organizations; • <i>Socio-Political Risks:</i> Although GoB is likely to remain driven to continue with EE initiatives, allocations for staff bonuses and incentives may not be in place as the Ministry of Finance sets budgetary allocations; • <i>Institutional Framework and Governance:</i> The institutional framework in Belarus is well established and difficult to reform; hence, the use of settlement accounts to increase EE investments is not sustainable. As an alternative, the piloting of the SPA provides a viable working model to increase EE investment for quasi-state organizations or 50% of all state budgetary organizations; • <i>Environmental Factors:</i> Environmental impacts of the Project are benign <p style="text-align: right;"><u>Overall Rating</u></p>	<p style="text-align: center;">ML</p> <p style="text-align: center;">ML</p> <p style="text-align: center;">ML</p> <p style="text-align: center;">L</p> <p style="text-align: center;">ML</p>
<p>Outcome 2: Financial sources available for EE investments used more efficiently through:</p> <ul style="list-style-type: none"> • improving qualifications of nationally accredited organizations and national experts is enhanced to conduct energy audits according to international best practices standards and business planning • increasing the proportion of loans to grants offered by the state for energy efficiency offered by EED • securing EE investments using loan, grant and equity financial resources 	<ul style="list-style-type: none"> • <i>Financial Resources:</i> Commercial banks view EE projects as low risk and would avail finances towards implementing such projects. • <i>Socio-Political Risks:</i> EE is a high GoB priority and will encounter little if any opposition; • <i>Institutional Framework and Governance:</i> EE is a high GoB priority and will be strongly supported by the GoB if grant finance of EE projects is minimized. However, approval of legislation (drafted by the Project) to increase the loan proportion of EE finance has been stalled and will not likely revived during this Project. Hence, future EE loan finance will be driven by the dwindling supply of state budgetary funds from the GoB; • <i>Environmental Factors:</i> Environmental impacts of the Project are benign. <p style="text-align: right;"><u>Overall Rating</u></p>	<p style="text-align: center;">L</p>

Table 7: Assessment of Sustainability for Objectives

Intended Outcome (outcomes reset as in Table 6)	Assessment of Sustainability	Dimensions of Sustainability
<p>Outcome 3: Number of projects and Energy Center's partners is expanded Project successes throughout Belarus sustained and replicated through:</p> <ul style="list-style-type: none"> • establishing an Energy Center (EC) to support state enterprises in mobilizing finances and implementing EE improvements • developing a pipeline of EE projects • enhancing the outreach of Energy Center to foster partnerships and an increased number of EE projects 	<ul style="list-style-type: none"> • <i>Financial Resources:</i> The Project is working towards creating a self-financing EC that will guide the development of EE projects in Belarus. Demand for the services of the EC appear high at this time; • <i>Socio-Political Risks:</i> The EED supports the development of an EC that will act as a clearing house for EE investment development in Belarus. Legalization of the EC, however, has not yet been completed and is hampering efforts by the Project to develop a pipeline of EE projects. In addition, the capacity of the fledgling ESCO industry in Belarus needs to be strengthened so that the industry can provide quality services to implement EE projects for the state sector; • <i>Institutional Framework and Governance:</i> The EED supports the development of an EC to act as a clearing house for EE investment development in Belarus. The Energy Center is proposed as a “closed joint stock company” and not state owned; • <i>Environmental Factors:</i> Environmental impacts of the Energy Center are benign. <p style="text-align: right;">Overall Rating</p>	<p style="text-align: center;">L</p> <p style="text-align: center;">ML</p> <p style="text-align: center;">ML</p> <p style="text-align: center;">L</p> <p style="text-align: center;">ML</p>

2.5.2 Replicability

Replicability of the Project can be measured against the number of EE investments developed in the state sector that demonstrate increased efficiency in the use of loan financial resources and the judicious use of technical assistance. A short assessment of replication of EE projects amongst the different types of state organizations is presented below:

- *Budgetary organizations.* Replication of EE projects has not yet occurred within the 5 budgetary organizations that are piloting the use of energy norms and providing staff incentives for increasing EE investments. Replication will only occur if there is a form of regulatory pressure to use energy norms; this appears highly unlikely at this time given the difficulties for the Project to be influential to the GoB in reforming its budgetary practices and the practices of “cutting” budgets according to current needs.
- *Quasi-budgetary organizations.* Replication of the “simple partnership agreement” (SPA) has not yet occurred since the Project has only recently introduced the concept to the GoB as a means to increase the proportion of loan finance. However, if state budgets continue to decline as expected, there will be reduced allocations to EE investments in Belarus, and the SPA modality will likely be adopted and replicated for financing EE projects with quasi-budgetary organizations.
- *State self-financed organizations.* The Project has demonstrated that EE projects can be developed with a significant loan component. While there has not yet been replication of EE investment in state self-financed organizations in Belarus, the potential for replication is significant based on economics of the two demonstrated projects with 75% loan finance, a number of cooperative agreements signed with the EC and the regulatory pressure to reduce fossil fuel consumption.

3. CONCLUSIONS AND RECOMMENDATIONS

3.1 Conclusions

Main **achievements** of the Project as of July 2009 have been:

- The use of energy norms on a pilot basis by five state organizations to estimate annual energy budget requirements with the objective of preparing recommendations on implementing technically-based energy norms for budgeting, and on the provision of incentives for key staff in these organizations to increase EE investments;
- Investment plans totaling USD 15.1 between state enterprises, an ESCO and a commercial bank of which a significant portion USD 10.9 million, was financed through loans;
- Increased capacity of national energy experts on energy business planning and energy audits;
- A draft regulation to increase the proportion of loan to grant finance for EE projects; and
- Building the technical capacity of the “Energy Center” to facilitate EE investments for gas-fired power generation projects. Currently, the Center is under the management of EED.

Main **conclusions** drawn from this MTE mission includes:

- EED has been unable to initiate changes in budgeting and to create government-supported mechanisms for concessional loan finance. This may be due to the change or downgraded status of the EED from a stand-alone State Committee on EE to a Department within the State Standardization Committee;
- The design of incentives for state budgetary organizations to increase investment in EE using energy norms and settlement accounts appears to be difficult task. This is largely due to the difficult task of attempting to reform the well established and rigid budgeting process in Belarus with the Ministry of Finance, Ministry of Taxation and the Regional Budgeting Authorities;
- The sustainability of the GoB system of bonuses and incentives to staff for implementing EE measures is uncertain since funding of the incentives are not directly related to energy savings. Moreover, budgeting for the incentives and bonuses are not compulsory and not specified by GoB regulations;
- As an alternative to changes in government budgeting and creating government-supported mechanisms for concessional loan finance, the Project has found replicable mechanisms to implement EE investment plans through:
 - “simple partnership agreements” (SPAs) between “quasi-budgetary” organizations that collect revenue from delivering municipal services and energy service companies (ESCOs); and

- business contracts between a state enterprise, an ESCO and a commercial bank;
- The original project design would have more effective if the ProDoc had recognized the distinction between state budgetary organizations, “quasi-state” budgetary organizations and self-sustaining state enterprises. Each of these organizations have distinct approaches for increasing EE implementation;
- There is competent expertise in the Energy Center in efficient gas-fired power generation. More work is required to build the capacity of the EC to facilitate other EE investments that are economically feasible with short payback periods (eg. appliances, buildings, pumps replacements, motors etc);
- The log-frame of the Project requires revision and clarification if it is to be used as a Project monitoring tool. It has been revised a number of times and is not presented in the outcome-based format typical of other GEF projects. Moreover, many of the targets are difficult to achieve (such as settlement accounts), do not have any relationship with the intended outcome, or are not clear in their intentions (i.e. is Outcome 2 related to approving legislation related to increasing EE loan finance or only to increase EE loan finance?). This has had some adverse effect on the progress of the Project;
- Project implementation has been slowed by a number of factors including a lack of investment of Project resources on Outcome 1 where project design issues existed, lack of inputs by foreign or specialist consultants who could accelerate the pace of Project delivery, delayed legalization of the Energy Center, and the lack of EED support to finance a fully functional PMU;
- The Project needs to continue to improve its capacity to monitor EE investments, energy usage and GHG reductions. This would include the capacity of the Project to prepare EE investment profiles, detailed calculations of energy usage and GHG reductions; these could be effectively used to demonstrate the EE aspects of investments developed.

Project **sustainability is moderately likely**. Project sustainability can be enhanced:

- through strengthening the use of SPAs between quasi-budgetary organizations and ESCOs for EE investments;
- if there are regulations that specify budgetary allocations for staff bonuses and incentives based on increasing EE investments. Promulgation of such regulations, however, appears to be highly unlikely;
- when the Energy Center becomes a legal entity;
- if there is a strong ESCO industry in Belarus that can provide quality services to state enterprises and quasi-state budgetary organizations (who cumulatively consume over 92% of the country’s fuel resources).

Replication of EE measures will occur if:

- the GoB sets mandatory budgeting of staff bonuses and incentives for increasing EE investments. The setting of mandatory budgets, however, appears to be highly unlikely;
- state budgets decline forcing quasi-state budgetary organizations to use the SPA as a contract modality to invest in EE measures;
- the Project can build a pipeline of economically feasible EE measures with excellent rates of return.

3.2 Recommendations

The following recommendations are provided in an approximate order of importance to the project:

Recommendation 1: Focus on strengthening implementation of EE investment plans between state enterprises, ESCOs and commercial banks, and building a pipeline of projects that can be implemented after the GEF project is complete. State enterprises consume over 84% of all energy resources within the state sector in Belarus. As such, it is important for the Project to demonstrate the best practices for developing and implementing a wide range of EE projects in the state sector.

Recommendation 2: For Outcome 1, drop further efforts on developing incentives and bonuses for staff to increase EE investments with state budgetary organizations, and re-allocate resources to strengthen the pilot demonstration of “simple partnership agreements” (SPAs) between “quasi-state” budgetary organizations and ESCOs. State budgetary organizations only consume 6% of energy resources within the Belarusian state sector; the World Bank “Energy Efficiency” loan project is scheduled to commence in late 2009 that will specifically target state budgetary organizations for EE investments. Quasi-state budgetary organizations only consume 8% of energy resources in the state sector in Belarus; project resources for Outcome 1 should be re-allocated to strengthen SPAs as they appear to be the only means of increasing EE investments in this sub-sector (this re-allocation would replace the “settlement account” target in Outcome 1.2 that is unachievable). These pilot SPAs can also demonstrate the insertion of clauses into the SPAs that set aside a quota of energy savings profits for staff bonuses based on EE performance.

Recommendation 3: Follow-up on the legalization of the Energy Center and produce a strategic plan to identify other areas of EE expertise that it will develop and model for revenue generation. To develop a self-sustaining EC, a strategic plan for the EC will articulate how the EC will grow into EE areas beyond the current expertise in gas-fired power generation; the EC can grow into areas such as building EE, appliances and labeling, EE motors, EE lighting systems for industries and public facilities, and other EE activities that are economically feasible with short payback periods. The plan should include:

- a vision or a mission statement for the Energy Center;
- a ranking of EE opportunities for development that by fuel savings and payback periods;
- short, medium and long term targets for specific EE areas to be developed;
- a business model to sustain revenue generation by developing target EE projects (including financing and revenues generated from energy savings); and
- capacity building needs to ensure the plan can be implemented in a timely manner (see Recommendation 4).

Recommendation 4: Continuation of training of energy auditors and energy business planners. To be able to implement the strategic plan (Recommendation 3), the Project should continue to support training of energy auditors, business planners and key personnel from Belarusian-based ESCOs. Trainers should have exposure to international best practices in a wide range of EE areas, and serve as “windows” to international EE practices and technologies.

Recommendation 5: Reset outcomes and targets as specified in the MTE report to improve management of the Project. The revised log-frame will provide clear targets and management actions for the PMU and UNDP Belarus and improve implementation efficiency of the Project. To meet the targets, the PMU will have a log-frame on which to plan its work, and to allocate appropriate resources to achieve set targets.

Recommendation 6: If available, the Project should use competent external assistance to accelerate implementation. This would include the hiring of other ESCOs (to facilitate additional EE developments) and specialist consultants (to accelerate delivery of the targets such as drafting of SPAs or legislation for budgeting incentives for state budgetary organizations).

Recommendation 7: Project staff should closely monitor EE investments developed using allocated Project resources. This would include using Project software, metering equipment, and time spent with the enterprises with EE investments. As an outcome, Project staff should be able to provide detailed calculations and details of the EE investment, payback terms, actual payments, energy baseline, energy used and saved by the EE investment and GHG reductions.

Recommendation 8: Project extension should only be considered if necessary. The current project completion date is December 31, 2010, deemed sufficient time to complete a number of outstanding Project tasks including the piloting of the SPAs, increasing the capacity of energy auditors and business planner to international standards, building a pipeline of EE projects and legalization of the Energy Center. However, if there are any delays to completing these tasks due to factors external to the Project (i.e. delayed legalization of the EC, slow build-up of a pipeline of EE projects, etc), a Project extension should be considered to complete all outstanding tasks.

3.3 Lessons Learned

Key lessons from this Project include:

- Project designs should be carefully consider the inputs of all stakeholders. The design of settlement accounts on this Project did not fully address the barriers that would be encountered by the Ministry of Finance and the Ministry of Taxation with regards to how the settlement accounts would be taxed or protected from “raiding” by other deficient budget lines (such as salaries). Moreover, the concept of settlement accounts from energy savings was simply not feasible, an issue that should have been addressed at the design stage of the Project. The funds expended in Outcome 1 could have been better utilized for other purposes;
- Project designs that involve changes in legislation should set modest targets. Legislative changes require ample time to implement, possibly outside the timeframe of the Project;
- To increase EE investments in planned economies such as Belarus, the ESCO implementation model appears to be a successful approach. With Belarus attempting to move some sectors towards market-driven economic approaches, the ESCO approach provides a win-win scenario for the GoB; a privately funded ESCO bears the risk of the EE investment with reliable rates of return based on energy savings and Belarus meets its EE goals without expenditure of its state resources;
- Preparations are required to source specialized consulting services. Preparations include provision of ToRs that are not too restrictive (to not exclude a large number of international consultants), and identifying consultants through referrals, previous contracts or internet searches.

Appendix A – Mission Terms of Reference for Mid-Term Evaluation of UNDP-GEF Project “Removing Barriers to Energy Efficiency Improvements in the State Sector in Belarus”

I. INTRODUCTION

This Mid Term Evaluation (MTE) is initiated by the UNDP Belarus as the Implementation Agency for this project and it aims to provide managers (at the Project Implementation Unit, UNDP Belarus Country Office and UNDP-GEF levels) with strategy and policy options for more effectively and efficiently achieving the project’s expected results and for replicating the results. It also provides the basis for learning and accountability for managers and stakeholders.

This evaluation is to be undertaken taking into consideration the GEF Monitoring and Evaluation policy (<http://thegef.org/MonitoringandEvaluation/MEPoliciesProcedures/mepoliciesprocedures.html>) and the UNDP-GEF Monitoring and Evaluation Policy (<http://www.undp.org/gef/05/monitoring/policies.html>).

The MTE is intended to identify potential project design problems, assess progress towards the achievement of objective, identify and document lessons learned (including lessons that might improve design and implementation of other UNDP-GEF projects), and to make recommendations regarding specific actions that might be taken to improve the project. It is expected to serve as a mean of validating or filling the gaps in the initial assessment of relevance, effectiveness and efficiency obtained from monitoring. The MTE provides the opportunity to assess early signs of project success or failure and prompt necessary adjustments.

The evaluation will play a critical role in the future implementation of the project by providing advice on: (i) how to strengthen the adaptive management and monitoring function of the project; (ii) how to ensure accountability for the achievement of the GEF objective; (iii) how to enhance organizational and development learning; and (iv) how to enable informed decision – making.

The evaluation will have to provide to the GEF Secretariat with complete and convincing evidence to support its findings/ratings. The evaluator should prepare specific ratings on specific aspects of the project, as described in the section IV of this Terms of Reference. Particular emphasis should be put on the current project results and the possibility of achieving the objective and outcomes in the established timeframe, taking into consideration the speed, at which the project is proceeding.

II. PROJECT OVERVIEW

The project has been implemented since 2006 and is expected to be completed in 2010. The project is nationally executed by the Energy Efficiency Department (EED) under the State Committee on Standardization of Belarus. The total GEF contribution amounts to \$1,400,000, matched by \$8,369,600 from local project partners.

This project addresses capacity and awareness issues amongst state enterprises and local authorities by building capacity to provide information and consulting services, and training to local authority and state enterprise employees in energy efficiency. Support has been provided to the local authorities and state enterprises to identify energy efficiency opportunities and increase internal investments to realize such opportunities in the DH&CHP sector, including the utilization of concessional financing opportunities being offered by central government. The opportunities of local bank loans for energy efficiency investment projects are to be assessed. In addition to building awareness, the project plans to create momentum

amongst local government for investment in energy efficiency by designing and testing employee bonuses for realizing energy efficiency and institutional incentives by enabling municipalities to retain a part of the savings they make from energy efficiency improvements.

The project objective is going to be realized through 3 key outcomes:

- Outcome 1. Increased incentives for state organizations to invest in energy efficiency;
- Outcome 2. Financial resources made available by the state sector for energy efficiency investment are used more efficiently;
- Outcome 3. Project successes sustained and replicated throughout Belarus.

III. EVALUATION OBJECTIVES

The MTE is initiated by UNDP Country Office in Belarus in line with the UNDP-GEF M&E guidelines in order to assess the overall project progress, make sure the project is on track to deliver the agreed outcomes, and produce recommendations on any adjustments needed.

The purposes of the MTE are:

- (i) To assess overall performance against the project objective and outcomes as set out in the Project Document, project's Logical Framework, and other related documents;
- (ii) To assess the effectiveness and efficiency of the project;
- (iii) To analyze critically the implementation and management arrangements of the project;
- (iv) To assess the progress to date towards achievement of the outcomes;
- (v) To review planned strategies and plans for achieving the overall objective of the project within the timeframe;
- (vi) To assess the sustainability of the project's interventions;
- (vii) To list and document initial lessons concerning project design, implementation and management;
- (viii) To assess project relevance to national priorities;
- (ix) To provide guidance for the future project activities and, if necessary, for the implementation and management arrangements;

In particular, this evaluation will assess progress in establishing the information baseline, reducing threats, and identifying any difficulties in project implementation and their causes, and recommend corrective course of action. Effective action to rectify any identified issues hindering implementation will be a requirement prior to determining whether implementation should proceed.

Project performance will be measured based on Project's Logical Framework Matrix (see Annex 3), which provides clear performance and impact indicators for project implementation along with their corresponding means of verification. Success and failure will be determined in part by monitoring changes in baseline conditions. During the inception period the Logical Framework Matrix has been updated, along with a number of indicators which were revised to render more clarity and rigidity to the system.

The evaluation team is expected to work with key project stakeholders, including UNDP Country Office in Belarus, Energy Efficiency Department, Ministry of Environment, and members of the Project Steering Committee.

IV. SCOPE OF THE EVALUATION

The evaluation will focus on the range of aspects described below. In addition to a descriptive assessment, all criteria marked with (R) should be rated using the following divisions: *Highly Satisfactory*, *Satisfactory*, *Marginally Satisfactory*, *Unsatisfactory*. All ratings given should be properly substantiated:

1. Project concept/design, relevance and strategy

1.1 *Project relevance, country ownership/drivenness (R)*: the extent to which the project is suited to local and national development priorities and organizational policies, including changes over time as well as the extent the activities contribute towards attainment of global environmental benefits:

- a. Is the project concept in line with the sectoral and development priorities and plans of the country?
- b. Are project outcomes contributing to national development priorities and plans?
- c. How and why project outcomes and strategies contribute to the achievement of the expected results.
- d. Examine their relevance and whether they provide the most effective way towards results.
- e. Do the outcomes developed during the inception phase still represent the best project strategy for achieving the project objectives (in light of updated underlying factors)? *Consider alternatives.*
- f. Were the relevant country representatives, from government and civil society, involved in the project preparation?
- g. Does the recipient government maintain its financial commitment to the project? Has the government approved policies or regulatory frameworks in line with the project's objectives?

1.2 *Preparation and readiness*:

- a. Are the project's objective and components clear, practicable and feasible within its timeframe?
- b. Were the capacities of executing institution and counterparts properly considered when the project was designed?
- c. Were lessons from other relevant projects properly incorporated in the project design?
- d. Were the partnership arrangements properly identified and the roles and responsibilities negotiated prior to project approval?
- e. Were counterpart resources (funding, staff, and facilities), enabling legislation, and adequate project management arrangements in place at project entry?

1.3 *Stakeholder involvement (R)*:

- a. Did the project involve the relevant stakeholders through information-sharing, consultation and by seeking their participation in the project's design?
- b. Did the project consult and make use of the skills, experience and knowledge of the appropriate government entities, NGOs, community groups, private sector, local governments and academic institutions in the design of project activities?

1.4 *Underlying factors/assumptions*:

- a. Assess the underlying factors beyond the project's immediate control that influence outcomes and results. Consider the appropriateness and effectiveness of the project's management strategies for these factors.
- b. Re-test the assumptions made by the project management and identify new assumptions that should be made.
- c. Assess the effect of any incorrect assumptions made by the project.

1.5 *Management arrangements (R)*:

- a. Were the project roles properly assigned during the project design?
- b. Are the project roles in line with UNDP and GEF programming guidelines?
- c. Can the management arrangement model suggested by the project be considered as an optimum model? If no, please come up with suggestions and recommendations.

1.6 *Project budget and duration (R)*:

- a. Assess if the project budget and duration were planned in a cost-effective way?

1.7 *Design of project M&E system (R)*:

- a. Examine whether or not the project has a sound M&E plan to monitor results and track progress towards achieving project objectives.

- b. Examine whether or not the M&E plan includes a baseline (including data, methodology, etc.), SMART indicators and data analysis systems, and evaluation studies at specific times to assess results and adequate funding for M&E activities.
- c. Examine whether or not the time frame for various M&E activities and standards for outputs are specified.

1.8 Sustainability:

- a. Assess if project sustainability strategy was developed during the project design?
- b. Assess the relevance of project sustainability strategy

2. Project Implementation

2.1 Project's adaptive management (R):

- a. Monitoring systems
 - Assess the monitoring tools currently being used:
 - Do they provide the necessary information?
 - Do they involve key partners?
 - Are they efficient?
 - Are additional tools required?
 - Assess the use of the logical framework as a management tool during implementation and any changes made to it.
 - What impact did the retro-fitting of impact indicators have on project management, if such?
 - Assess whether or not M&E system facilitates timely tracking of progress towards project's objectives by collecting information on chosen indicators continually; annual project reports are complete, accurate and with well justified ratings; the information provided by the M&E system is used to improve project performance and to adapt to changing needs.
- b. Risk Management
 - Validate whether the risks identified in the project document and PIRs are the most important and whether the risk ratings applied are appropriate. If not, explain why.
 - Describe any additional risks identified and suggest risk ratings and possible risk management strategies to be adopted.
 - Assess the project's risk identification and management systems:
 - Is the UNDP-GEF Risk Management System¹⁸ appropriately applied?
 - How can the UNDP-GEF Risk Management System be used to strengthen the project management?
- c. Work Planning
 - Assess the use of routinely updated work plans.
 - Assess the use of electronic information technologies to support implementation, participation and monitoring, as well as other project activities.
 - Are work planning processes result-based¹⁹? If not, suggest ways to re-orientate work planning.
- d. Financial management
 - Consider the financial management of the project, with specific reference to the cost-effectiveness of interventions. (Cost-effectiveness: the extent to which results have been delivered with the least costly resources possible.). Any irregularities must be noted.
 - Is there due diligence in the management of funds and financial audits?
 - Did promised co-financing materialize (please fill out the co-financing form provided in Annex 1)?
- e. Reporting
 - Assess how adaptive management changes have been reported by the project management.

¹⁸ UNDP-GEF's system is based on the Atlas Risk Module. See the UNDP-GEF Risk Management Strategy resource kit, available as Annex XII at <http://www.undp.org/gef/05/monitoring/policies.html>

¹⁹ RBM Support documents are available at <http://www.undp.org/eo/methodologies.htm>

- Assess how lessons derived from the adaptive management process have been documented, shared with key partners and internalized by partners.
- f. Delays
- Assess if there were delays in project implementation and what were the reasons.
 - Did the delay affect the achievement of project's outcomes and/or sustainability, and if it did then in what ways and through what causal linkages?

2.2 Contribution of Implementing and Executing Agencies:

- b. Assess the role of UNDP and the Energy Efficiency Department against the requirements set out in the UNDP Programme and Operations Policies and Procedures²⁰. Consider:
- Field visits
 - Participation in Steering Committees
 - Project reviews, PIR preparation and follow-up
 - GEF guidance
 - Operational support
- c. Consider the new UNDP requirements outlined in the UNDP Programme and Operations Policies and Procedures, especially the Project Assurance role, and ensure they are incorporated into the project's adaptive management framework.
- d. Assess the contribution to the project from UNDP and the EED in terms of "soft" assistance (i.e. policy advice & dialogue, advocacy, and coordination).
- e. Suggest measures to strengthen UNDP's soft assistance to the project management.

2.3 Stakeholder participation, partnership strategy (R):

- a. Assess whether or not and how local stakeholders participate in project management and decision-making. Include an analysis of the strengths and weaknesses of the approach adopted by the project and suggestions for improvement if necessary.
- b. Does the project consult and make use of the skills, experience and knowledge of the appropriate government entities, NGOs, community groups, private sector, local governments and academic institutions in the implementation and evaluation of project activities?
- c. Consider the dissemination of project information to partners and stakeholders and if necessary suggest more appropriate mechanisms.
- d. Identify opportunities for stronger partnerships.

2.4 Sustainability:

- a. Assess the extent to which the benefits of the project will continue, within or outside the project scope, after it has come to an end; commitment of the government to support the initiative beyond the project.
- b. The evaluators may look at factors such as mainstreaming project objectives into the broader development policies and sectoral plans and economies.

The sustainability assessment will give special attention to analysis of the risks that are likely to affect the persistence of project outcomes. The sustainability assessment should also explain how other important contextual factors that are not outcomes of the project will affect sustainability. The following four dimensions or aspects of sustainability will be addressed:

- *Financial resources:* Are there any financial risks that may jeopardize sustenance of project outcomes? What is the likelihood of financial and economic resources not being available once the GEF assistance ends (resources can be from multiple sources, such as the public and private sectors, income generating activities, and trends that may indicate that it is likely that in future there will be adequate financial resources for sustaining project's outcomes)?

²⁰ Available at <http://content.undp.org/go/userguide/results/project/>

- *Socio-political*: Are there any social or political risks that may jeopardize sustenance of project outcomes? What is the risk that the level of stakeholder ownership (including ownership by governments and other key stakeholders) will be insufficient to allow for the project outcomes/benefits to be sustained? Do the various key stakeholders see that it is in their interest that the project benefits continue to flow? Is there sufficient public / stakeholder awareness in support of the long term objectives of the project?
- *Institutional framework and governance*: Do the legal frameworks, policies and governance structures and processes pose risks that may jeopardize sustenance of project benefits? While assessing this parameter, also consider if the required systems for accountability and transparency, and the required technical know-how are in place.
- *Environmental*: Are there any environmental risks that may jeopardize sustenance of project outcomes? The terminal evaluation should assess whether certain activities will pose a threat to the sustainability of the project outcomes.

On each of the dimensions of sustainability of the project outcomes will be rated as follows:

- *Likely (L)*: There are no or negligible risks that affect this dimension of sustainability.
- *Moderately Likely (ML)*: There are moderate risks that affect this dimension of sustainability.
- *Moderately Unlikely (MU)*: There are significant risks that affect this dimension of sustainability
- *Unlikely (U)*: There are severe risks that affect this dimension of sustainability.

3. Project Results (outputs, outcomes and objectives)

3.1 Progress towards achievement of intended outputs, outcomes/measurement of change:

Progress towards results should be based on a comparison of indicators before and after (so far) the project intervention, e.g. by comparing current conditions for peatlands restoration (legal and regulatory frameworks, results of restoration activities, etc.) to the baseline ones.

The evaluation should specifically look into:

- Adequacy of the level and proposed modes of enforcement of the regulatory and programmatic documents developed within the project for creation of an enabling environment for energy efficiency;
- Verification of the Management Effectiveness Tracking Tool data, as collected and reported by the project;
- Validation of the adequacy and viability of the Energy Centre's investment programme;
- Validation of the energy efficiency interventions, completed, on-going, or proposed by the Energy Centre;
- Adequacy and effectiveness of the proposed incentives for state organizations to invest in energy efficiency; and
- Project's impact on improving effectiveness of the use of state financial resources available for energy efficiency.

To determine the level of achievement of project outcomes and objectives following three criteria should be assessed:

- *Relevance*: Are the project's outcomes consistent with the focal areas/operational program strategies and country priorities?
- *Effectiveness*: Are the actual project outcomes commensurate with the original or modified project objectives? In case the original or modified expected results are merely outputs/inputs then the evaluators should assess if there are any real outcomes of the project and if yes then whether these are commensurate with the realistic expectations from such a project.
- *Efficiency*: Is the project cost effective? Is the project the least cost option? Is the project implementation delayed and if it is, then does that affect cost-effectiveness? Wherever possible, the evaluator should also compare the cost-time vs. outcomes relationship of the project with that of other similar projects.

Outcomes and whole project should be rated as follows for relevance, effectiveness, efficiency:

- *Highly Satisfactory (HS)*: The project has no shortcomings in the achievement of its objectives.
- *Satisfactory (S)*: The project has minor shortcomings in the achievement of its objectives.
- *Moderately Satisfactory (MS)*: The project has moderate shortcomings in the achievement of its objectives.

- *Moderately Unsatisfactory (MU)*: The project has significant shortcomings in the achievement of its objectives.
- *Unsatisfactory (U)*: The project has major shortcomings in the achievement of its objectives.
- *Highly Unsatisfactory (HU)*: The project has severe shortcomings in the achievement of its objectives.

V. EVALUATION DELIVERABLES

The core product of the Mid-Term Evaluation will be the Mid-Term Evaluation Report that includes:

- Findings with the rating on performance;
- Conclusions drawn;
- Recommendations for improving delivery of project outputs;
- Lessons learned concerning best and worst practices in producing outputs;
- A rating on progress towards outputs.

The report is proposed to adhere to the following basic structure:

1. Executive summary
 - Brief description of project
 - Context and purpose of the evaluation
 - Main conclusions, recommendations and lessons learned
2. Introduction
 - Project background
 - Purpose of the evaluation
 - Key issues to be addressed
 - The outputs of the evaluation and how will they be used
 - Methodology of the evaluation
 - Structure of the evaluation
3. The project and its development context
 - Project start and its duration
 - Implementation status
 - Problems that the project seeks to address
 - Immediate and development objectives of the project
 - Main stakeholders
 - Results expected
 - Analysis of the situation with regard to outcomes, outputs and partnership strategy
4. Findings and Conclusions
 - 4.1 Project formulation
 - Project relevance
 - Implementation approach
 - Country ownership/Driveness
 - Stakeholder participation
 - Replication approach
 - Cost-effectiveness
 - Sustainability
 - Linkages between project and other interventions within the sector
 - Management arrangements
 - 4.2 Project implementation
 - Financial management
 - Monitoring and evaluation
 - Management and coordination

- Identification and management of risks (adaptive management)
- 4.3 Results
- Attainment of outputs, outcomes and objectives
 - Project Impact
 - Prospects of sustainability
5. Conclusions and recommendations
- Findings
 - Corrective actions for the design, duration, implementation, monitoring and evaluation of the project
 - Actions to strengthen or reinforce benefits from the project
 - Proposals for future directions underlining main objectives
 - Suggestions for strengthening ownership, management of potential risks
6. Lessons learned
- Good practices and lessons learned in addressing issues relating to effectiveness, efficiency and relevance
7. Annexes
- Evaluation TOR
 - Itinerary
 - List of persons interviewed
 - Summary of field visits
 - List of documents reviewed
 - Questionnaire used (if any) and summary of results
 - Comments by stakeholders (only in case of discrepancies with evaluation findings and conclusions)

The expected length of the report is around 50 pages in total. The first draft of the report is expected to be submitted to the UNDP Country Office in Belarus within 2 weeks of the in-country mission for subsequent circulation to the key project stakeholders for comments. Any discrepancies between the interpretations and findings of the evaluator and the key project stakeholders will be explained in an annex to the final report.

VI. METHODOLOGY

Evaluators should seek guidance for their work in the following materials, which could be found at (www.undp.org/gef):

- UNDP Handbook on Monitoring and Evaluation for Results
- UNDP/GEF M&E Resource Kit

It is recommended that the evaluation methodology include the following:

- Documentation review (desk study), to include Project Document, GEF Project Implementation Reviews, Minutes of the Project Steering Committee meetings, GEF quarterly project updates, National Comprehensive Project Assessment and other relevant national legislative and policy documents;
- Interviews with Project Management Unit and key project stakeholders, including UNDP Country Office in Belarus, GEF Regional Coordination Unit in Bratislava, EED, Ministry of Environment, Energy Centre staff, and other stakeholders, as necessary;
- In-country field visits.

VII. EVALUATION TEAM

The evaluation will be undertaken by a team composed of an *International Team Leader* and a *Local Consultant*. They will receive the support of UNDP Country Office in Belarus and Project Management Team, and will be assisted by a translator/interpreter (when needed).

The evaluators selected should not have participated in the project preparation and/or implementation and should not have conflict of interest with project related activities.

The *International Consultant - Team Leader* will be responsible to deliver the expected output of the mission. Specifically, he/she will perform the following tasks:

- Lead and manage the evaluation mission;
- Design the detailed evaluation methodology and plan;
- Conduct desk-reviews, interviews and site-visits in order to obtain objective and verifiable data to substantive evaluation ratings and assessments, including:
 - Assessment of adequacy of the level and proposed modes of enforcement of the regulatory and programmatic documents developed within the project for creation of an enabling environment for energy efficiency in the state sector;
 - Verification of the Management Effectiveness Tracking Tool data, as collected and reported by the project;
 - Validation of the adequacy and viability of the Energy Centre's investment;
 - Validation of the proposed economic incentives for budgetary organizations to introduce energy efficiency measures;
- Draft the evaluation report and share with the key stakeholders for comments;
- Finalize the evaluation report based on the inputs from key stakeholders.

Qualification requirements for the *International Team Leader*:

- Advanced university degree in economics, energy, or related area;
- Extensive (at least 10-year) experience and proven track record with policy advice and/or project development/implementation in energy efficiency in transition economies;
- Proven track record of application of results-based approaches to evaluation of projects focusing on energy efficiency (relevant experience in the CIS region and within UN system would be an asset);
- Familiarity with energy efficiency principles and relevant international best-practices;
- Knowledge of and recent experience in applying UNDP and GEF M&E policies and procedures;
- Excellent English communication skills, knowledge of Russian would be an asset;
- Demonstrable analytical skills;

The *Local Consultant* will provide input in reviewing all the project-relevant documentation and provide the Team Leader with a compilation of information prior to the evaluation mission. Specifically, the Local Consultant will perform the following tasks:

- Review the original documents;
- Participate in the design of the evaluation methodology;
- Organize the mission program, arrange and facilitate meetings with key stakeholders;
- Provide regular translation/interpretation as necessary;
- Draft related parts of the evaluation report, as relevant;
- Assist the International Team Leader in finalizing the draft report by incorporating inputs received;
- Provide other support services for the International Team Leader.

Qualification requirements for the *Local Consultant*:

- Masters degree (or equivalent) in business, economics or related area;
- At least 5-year experience in project development and/or evaluation, preferably in the field of energy efficiency;
- Excellent time-management skills;
- Proficiency in English;
- Prior experience with UNDP would be an asset.

Appendix B – Mission Itinerary (for June 29-July 11, 2009)

Time	Meeting/Site Visit	Persons Visited	Location
29 June, MONDAY			
16:30	Arrival of Mr. Roland Wong, Mid-Term Evaluator in Minsk		
30 June , TUESDAY			
10:00 – 12:00	1. Meeting with UNDP CO team: <ul style="list-style-type: none"> - to discuss on the scope and requirement for the MTE - to arrange logistics for contracts 	Igor Tchoulba	UNDP Office Minsk
12:00 – 13:00	Lunch break		
13:00 – 17:30	2. Meeting with all PMU Staff: <ul style="list-style-type: none"> - Interview PMU Staff (NPD, PM, NSTA, ISTA, coordinators) - Review documents 	Sergey Prokazov Viktor Vorobiov Alexander Savanovich Inna Hritsenka Sergey Skuratovich Margarita Chesnokova	Project office Minsk, Zaharova str 59
1 July, WEDNESDAY			
10:00 – 12:00	3. Meeting with Director, Energy Efficiency Department <i>Issues:</i> EC&EE policy development and National Energy Conservation Target Program	Leonid Shenets Andrey Minenkov Sergey Prokazov Viktor Vorobiov	Energy Efficiency Department, Svobody square, 17, Minsk
12:00 – 13:00	Lunch break		
14:00 – 17:30	4. Meeting with PMU Staff: <ul style="list-style-type: none"> - Interview PMU Staff (NPD, PM, NSTA, ISTA, coordinators) - Review documents and discuss Outcome 1 	Sergey Prokazov Viktor Vorobiov Alexander Savanovich Inna Hritsenka	Project office Minsk, Zaharova str 59
2 July, THURSDAY			
9:30 – 13:30	Travel to Krasnoselsky		
13:30 – 15:00	5. Visits to JSC “KrasnoselskStroymaterialy“ <ul style="list-style-type: none"> - <i>Issues:</i> Site inspection of new power plant and meeting with enterprise management 	Sergey Prokazov Viktor Vorobiov Alexander Savanovich Alexander Filenia	Krasnoselsky

Time	Meeting/Site Visit	Persons Visited	Location
16:00 – 20:00	Travel back to Minsk		
3 July, FRIDAY			
4 July, SATURDAY			
5 July, SUNDAY			
6 July, MONDAY			
10:00 - 13:30	6. Meeting with PMU Staff: <ul style="list-style-type: none"> - Interview PMU Staff (NPD, PM, NSTA, ISTA, coordinators) - Discussions over Outcome 1 - Review documents 	Sergey Prokazov Viktor Vorobiov Alexander Savanovich Inna Hritsenka	Project office Minsk, Zaharova str 59
13:30 – 14:30	Lunch break		
14.00 – 17.00	7. Meeting with PMU Staff: <ul style="list-style-type: none"> - Completed discussions with PMU Staff (NPD, PM, NSTA, ISTA, coordinators) on Outcome 1 	Sergey Prokazov Viktor Vorobiov Alexander Savanovich Inna Hritsenka	Project office Minsk, Zaharova str 59
7 July, TUESDAY			
9.00 – 10.00	8. Meeting with EED NPD: <ul style="list-style-type: none"> - Reviewed progress on the legalization of the Energy Center 	Andrey Minenkov Sergey Prokazov Viktor Vorobiov	EED Office
10:00 – 11:30	9. Meeting with UNDP CO: <ul style="list-style-type: none"> - Interim review of mission progress 	Igor Tchoulba	UNDP Office Minsk
11.30 -16.30	10. Meeting with PMU Staff: <ul style="list-style-type: none"> - Completed discussions with PMU Staff (NPD, PM, NSTA, ISTA, coordinators) on Outcome 2 	Sergey Prokazov Viktor Vorobiov Alexander Savanovich Inna Hritsenka	Project office Minsk, Zaharova str 59
8 July, WEDNESDAY			
8.00 – 11.00	Travel to Mogilev		
11:00 – 13.00	11. Meeting with Mogilev Regional Executive Committee and Mogilev Regional EED: <ul style="list-style-type: none"> - Completed discussion on Outcome 1 and EE incentive system 	Sergey Prokazov Inna Hritsenka Tadeush Yurevich Viacheslav Podolsky Gennagiy Stoliarov Victor Shishkin Elena Sergeenko	Mogilev Regional EED office
9 July, THURSDAY			
10.00 -16.30	12. Meeting with PMU Staff:	Sergey Prokazov	Project office

Time	Meeting/Site Visit	Persons Visited	Location
	Completed discussions with PMU Staff (NPD, PM, NSTA, ISTA, coordinators) on Outcome 3 and preliminary MTE findings	Viktor Vorobiov Alexander Savanovich Inna Hritsenka Sergey Skuratovich Margarita Chesnokova	Minsk, Zaharova str 59
10 July, FRIDAY			
10:00 – 11:00	13. Meeting with EED Staff: Final meeting to discuss findings and recommendations of the MTE	Leonid Shenets Andrey Minenkov Sergey Prokazov Viktor Vorobiov	Energy Efficiency Department, Svobody square, 17, Minsk
11:30 -13:00	14. Meeting with UNDP CO: Final meeting to discuss findings and recommendations of the MTE	Igor Tchoulba Sergey Prokazov Viktor Vorobiov	UNDP Office Minsk
11 July, SATURDAY			
16:20	Departure of Mr. Wong from Minsk		

Appendix C – List of Persons Interviewed and Documents Reviewed

This is a listing of persons contacted in Belarus (unless otherwise noted) during the Evaluation Period for the MTE only. The Evaluator regrets any omissions to this list.

- Mr. Igor Tchoulba, Programme Officer, UNDP Belarus
- Mr. Leonid Shenets, Director, DEE
- Mr. Andrey Minenkov, National Project Director, UNDP EE Project and Head of Division, DEE
- Mr. Sergey Prokazov, UNDP EE Project Manager
- Mr. Viktor Vorobiov, UNDP EE Project Small Business Expert
- Mr. Alexander Savanovich, UNDP EE Project Energy Expert
- Ms. Inna Hritsenka, UNDP EE Project Financial Expert
- Mr. Sergey Skuratovich, UNDP EE Project IT Expert
- Ms. Margarita Chesnokova, UNDP EE Project Manager Assistant
- Mr. Tadeush Yurevich, Head, Mogilev Regional Department of EED
- Mr. Viacheslav Podolsky, Head, Department of Energy and Transport, Mogilev Regional Executive Committee
- Mr. Gennagiy Stoliarov, Deputy Head, Mogilev Regional Department of EED
- Ms. Elena Sergeenko – Deputy Head, Mogilev Regional Executive Committee
- Mr. Vitaliy Shishkin – Deputy Head Doctor, Mogilev Regional Diagnostic Centre
- Mr. Alexander Filenia, Director, JSC “Vneshenergосervice”
- Ms. Elena Igonchenko, Deputy Director, JSC “Vneshenergосervice”
- Mr. Alexei Kosenchuk, Heat electropower station director at KrasnoselskStroymaterialy

Documents reviewed for this evaluation (all from UNDP unless otherwise noted) includes:

General documentation

- UNDP Programme and Operations Policies and Procedures
- UNDP Handbook for Monitoring and Evaluating for Results
- GEF Monitoring and Evaluation Policy
- Project Document
- Project Inception Report

Project Progress Reports

- Annual Project Reports
- Project Implementation Review
- Quarterly Reports
- Steering Committee Meeting minutes

EE Project Reports:

- “Analysis of current regulatory legal acts in the field of budgetary planning and application of FER consumption standards in budgetary organizations”
- “Development of recommendations for budgetary institutions on how to open special settlement accounts”
- “Status of energy efficiency incentives in social sphere by example of sites in Mogilev and Vitebsk regions with recommendations”

- “Analysis and conclusions of the possibility and expediency of realization of Outcome 1 of the Project in its original form in line with the effective legislation in this sphere”
- “Structure and regulatory framework of energy efficiency financing in the state sector with recommendations on the reasonability of updating the current legislation”
- “Draft regulatory document on promotion of Energy Efficiency repayable financing”
- “Analysis of the amount of repayable resources (by the sources of financing) allocated in 2006-2008 in Belarus as a whole, and a possibility of increasing the amount of budgetary repayable resources for implementation of energy efficient activities in view of different sources and mechanisms with recommendations”
- “Assessment of the energy efficiency services market in Belarus and proposals on Energy Center positioning”
- Business plans for Krasnoselskstroyaterialy;
- Project implementation reports for Krasnoselskstroyaterialy.

Other relevant documentation

- National Energy Saving Program for 2006 -2010
- Government regulations in force on energy efficiency incentives for budgetary institutions.
- Regulation on estimation of target EE indicators approved by the State Committee on Standardization in January 2008.
- Agreements on development of energy efficiency incentives between the Energy Center and Mogilev and Vitebsk Oblast Executive Committees.
- Agreements between the Energy Center and local banks.
- Agreements between the Energy Center and foreign partners.

Appendix D – Project Profiles

Project 1: Building Mini CHP Plant at Joint Stock Company “Krasnoselskstroimaterialy”

Owner:	Joint Stock Company “Krasnoselskstroimaterialy” Veretilo V.O., Director
Project sponsor and site owner:	Joint Stock Company “Vneshenergосervice” Kondratuk L.A., General Director

Overview of Baseline Scenario:

Electricity Production:	12,500,000 kwh (actual production from February to June/09) from the Lukoml plant into the Belenergo electricity grid with a production intensity of 0.000317 TCE/kWh
Main end users/customers:	Technological equipment of the enterprise and power system (urban population and others)

Overview of Project Intervention:

Overview:

The gas piston units (4.86 MW) were installed for heat and electricity production with specific consumption of 0.000165 TCE/kWh. The unit will generate electricity continuously for no less than 8,000 hours per year. Equipment lifetime is rated at 240,000 hours.

Benefits:

- The enterprise has its own source of electricity (at 0.000165 TCE/kwh) and thermal energy. Cost of generated power is 4 cents / kwh. Previously, the enterprise purchased electricity at 10 cents/kwh. With project cost at EUR 7.42 million, payback is 3 to 4 years
- Year round heat and hot water for technology and sanitary needs
- Natural gas savings (amounting to 1,900 tce during the March to June 2009 period by not consuming electricity from power plants of Belenergo grid)
- CO₂ emission reduction of 1,597 tonnes during the March to June 2009 period and with one unit operating at 50% capacity
- 14 new jobs

Selection of Technology:

The system is combined heat and electricity production from natural gas combustion. Heat of gas, motors and oil lubricants are utilized for heat production.

Electricity Production:	12,500,000 kwh (actual production from March to June 2009) with a production intensity of 0.000165 TCE/kWh
Type of equipment used:	Mini-heat station includes 2 installations with capacity 2.43 MW per each unit produced by “ENBaHer” (Austria)

Main end users/customers:	Technological equipment of the enterprise and power system (urban population and others)
Legal status of owner/sponsor	Private company JSC “Vneshenergосervice”

Cost Breakdown:

Description	Cost (USD)
Equipment	7,420,000
Building and Construction Works	2,290,000
Design	70,000

Total: USD 9,780,000

Project 2: Building Mini-Heat Station with Joint Stock Company “Berezastroimaterialy”

Owner: Joint Stock Company “Berezastroimaterialy”
Juk N.V., Director

Project sponsor: Joint Stock Company “BelinvestEsco”
Starikov G.L., Director

Overview of Baseline Scenario:

Electricity Production:	5,820,026 KWh over an 11-month period from August 2008 to June 2009 with Lukoml plant into the Belenergo electricity grid with a production intensity of 0.000317 TCE/kWh
Main end users/customers:	Technological equipment of the enterprise and power system (urban population and others)

Overview of Demonstration Project Intervention:

<u>Overview:</u> The gas-piston unit was installed with a capacity of 1.0 MW for heat and electricity production with specific consumption 0.000165 TCE/kWh. In accordance with the business plan, the unit will generate electricity continuously for no less than 8,000 hours per year. Equipment lifetime is rated at 240,000 hours	
<u>Benefits:</u> <ul style="list-style-type: none"> ○ The enterprise has its own source of electricity (at 0.000165 TCE/kwh) and thermal energy. Cost of generated power is 4 cents / kwh. Previously, the enterprise purchased electricity at 10 cents/kwh. With project cost at \$1.609 million, payback is 3 to 4 years ○ Year round heat and hot water for technology and sanitary needs ○ Natural gas savings due to electricity savings amounting to 885 tce during the August 2008 to June 2009 period ○ CO₂ emission reduction of 2,420 tonnes during the August 2008 to June 2009 period ○ 9 new jobs 	
<u>Selection of Technology:</u> The system is combined heat and electricity production from natural gas combustion. Heat of gas, motors and oil lubricants are utilized for heat production.	
Electricity Production:	5,820,026 KWh over an 11-month period from August 2008 to June 2009 with a production intensity of 0.000165 TCE/kWh
Type of equipment used:	Mini-heat station with capacity of 1.0 MW of electricity produced “Elteko” (Slovakia)
Main end users/customers:	Technological equipment of the enterprise and power system (urban population and others)

Legal status of owner/sponsor	Mixed ownership: 75.4% - private property and 24.6% - state property
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Cost Breakdown:

Description	Cost (USD)
ESCO Contribution (75.4%)	1,213,000
Design by ESCO	58,000
Contribution of "Berezastroimaterialy" (24.6%)	396,000

Total: USD 1,609,000

Appendix E – Original 2006 Project Framework Design

Project strategy	Objectively verifiable indicators
Goal: Greenhouse gas emissions are reduced. Fossil fuel consumption is reduced.	Specific results from the successful implementation of the project will be investments by Belarusian investors of no less than USD 8 million, including USD 2.9 million from the Committee on Energy Efficiency during project implementation. The resultant annual energy savings will total approximately 9, 880 tons of fuel equivalent. Annual greenhouse gas emission reductions will equal approximately 23, 437 tons of CO ₂ equivalent. As a result of the implementation of the proposed project, conventional fuel savings will lead to a reduction of approximately 352, 500 tons of CO ₂ equivalent over a 15-year period.

Project Outcomes	Indicator (quantified and time-bound)	Baseline	Target	Sources of verification	Risks and Assumptions
Objective of the project					
Influx of internal investment in energy efficiency projects in the state sector increased as the result of the project implementation	23, 437 tons of CO ₂ equivalent and 9, 880 tons of fuel equivalent reduced annually by the end of the project due to domestic investments in public sector energy efficiency.	The state sector consumes 68% of total fuel and energy resources. Low interest on the part of investors, low level of motivation and capacities in the state sector. State investment funds for energy efficiency are under subscribed.	Increase in investments in energy efficiency in the state sector by USD 18 million	Reports of the Committee on Energy Efficiency; project reports; independent final evaluation of the project.	The risk of a lack of ongoing, long-term government support for energy efficiency improvements and incentives in the state sector (low). The risk of a poor investment climate (medium).
Outcome 1 Increased incentives for state organizations to invest in energy efficiency	Increased levels of investment in energy efficiency by targeted organizations	Targeted organizations invest no funds of their own in energy efficiency (Currently funds for EE are coming from state budget, not from their own resources)	Targeted organizations have increased their investment in energy efficiency by USD 100,000 annually from 3 rd project year.	Final project report; annual reports of the project partners; independent final evaluation.	The risk of inadequate project implementation (low). The risk of time delays (completion risk) (medium).
Output 1.1 Budget organizations use energy norms in estimating their annual budget Activity 1.1.1 Develop new methodology and a manual for	Number of budget organizations using energy norms to estimating their annual budget requirements	No budget organizations use energy norms in estimating their annual budget requirements	30 budget organizations use energy norms in estimating their annual budget requirements by 3 rd project year	Project reports provided for in M&E plan. Reports of local authorities.	

Project Outcomes	Indicator (quantified and time-bound)	Baseline	Target	Sources of verification	Risks and Assumptions
<p>application of energy norms in energy planning</p> <p>Activity 1.1.2 Conduct training for national experts (including staff of regional energy efficiency departments) and budget organization staff in the application of energy norms</p> <p>Activity 1.1.3 Provide on-going consulting services to the project partners (local authorities) in budgeting and energy planning</p>					
<p>Output 1.2 Budget organizations deposit their energy savings into settlement accounts</p> <p>Activity 1.2.1 Provide assistance and consulting services to project partners in setting-up special settlement accounts</p> <p>Activity 1.2.2 Support target municipalities to measure energy savings, and financial revenues</p> <p>Activity 1.2.3 Support target municipalities to report on financial savings to ministry of finance</p> <p>Activity 1.2.4 Develop a guide for measuring energy and financial saving</p>	<p>Number of budget organizations depositing their energy savings into a settlement account</p>	<p>No budget organizations deposit their energy savings into a settlement account</p>	<p>30 budget organizations now deposit their energy savings into a settlement account by 3rd project year.</p>	<p>Project reports provided for in M&E plan. Reports of local authorities.</p>	

Project Outcomes	Indicator (quantified and time-bound)	Baseline	Target	Sources of verification	Risks and Assumptions
Activity 1.2.5 Train regional energy efficiency departments to disseminate best practices in calculating and reporting					
<p>Output 1.3 Budget organizations issue incentives to staff responsible for increasing their investments in energy efficiency</p> <p>Activity 1.3.1 Review options for staff incentives</p> <p>Activity 1.3.2 Develop a proposal to introduce staff incentives and discuss this with target municipalities</p> <p>Activity 1.3.3 Develop an implementation plan for introduction of staff incentives, including setting aside of budget resources, identification of responsible staff, bonus criteria</p> <p>Activity 1.3.4 Run an information campaign to inform staff of this opportunity for staff incentives</p> <p>Activity 1.3.5 Training for project partners in introduction of staff incentives for improving energy efficiency and optimal distribution of related funds</p>	Number of budget organizations issuing incentives to staff responsible for increasing their levels of investment in energy efficiency	No budget organizations issue incentives to staff responsible for increasing their levels of investment in energy efficiency	30 budget organizations issue incentives to staff responsible for increasing their levels of investment in energy efficiency by 3 rd project year.	Project reports provided for in M&E plan. Reports of local authorities.	

Project Outcomes	Indicator (quantified and time-bound)	Baseline	Target	Sources of verification	Risks and Assumptions
<p>Outcome 2 Financial resources made available by the state sector for energy efficiency investment are used more efficiently</p>	<p>The proportion of loans compared to grants made available by the state for energy efficiency investment</p>	<p>4% of state resources available as loans</p>	<p>10% of state resources available as loans</p>	<p>Final report of the project; annual reports of the project partners; independent final evaluation.</p>	<p>The risk of inadequate project implementation (medium). The risk of time delays (completion risk) (medium). The risk of low fossil fuel prices (low). The risk of poor co-operation between project stakeholders (low). The risk of cost overrun and time delays (completion risk) (medium). The risk of use of inappropriate technologies (low).</p>
<p>Output 2.1 Build the capacity of state organizations to audit and identify cost effective energy efficiency investments</p> <p>Activity 2.1.1 Identify audit best-practices</p> <p>Activity 2.1.2 Develop a program for audit training and solicit candidates for training</p> <p>Activity 2.1.3 Improve capacity for energy auditing and provide training for national experts and local energy auditing firms in auditing and developing feasibility studies</p> <p>Activity 2.1.4 Develop and adopt</p>	<p>Share of audits that meet international standards</p>	<p>30% of audits submitted to the CEE meet international standards</p>	<p>60% of audits submitted to the CEE meet international standards</p>	<p>Project reports provided for in M&E plan. Report of the CEE</p>	

Project Outcomes	Indicator (quantified and time-bound)	Baseline	Target	Sources of verification	Risks and Assumptions
new methodology of energy auditing based on internationally recognized standards					
<p>Output 2.2 Increase the portion of loans compared to grants, offered by the state for energy efficiency</p> <p>Activity 2.2.1 Develop new government regulations to increase the portion of loans compared to grants</p> <p>Activity 2.2.2 Provide support through the regulation approval process</p> <p>Activity 2.2.3 Undertake a feasibility study on increasing the share of loans over grants in state EE financing</p> <p>Activity 2.2.4 Based on the results of the feasibility study, develop a long-term strategy for restructuring government EE financing facilities to promote loans over grants</p> <p>Activity 2.2.5 Seek approval of the proposed strategy by the government before the end of the project through its incorporation in the National Energy Saving Program</p>	New government regulations are put in force to increase the portion of loans compared to grants	No regulation on increase of portion of loans available	New government regulations stimulating loans for energy efficiency submitted for approval by the end 1 st project year	Project reports provided for in M&E plan. Report of the CEE	The government continues to promote increase of loan funds over grants for energy efficiency. See the letter provided by the Ministry of Economy in Section IV, Part I

Project Outcomes	Indicator (quantified and time-bound)	Baseline	Target	Sources of verification	Risks and Assumptions
<p>Output 2.3 Build the capacity of state organization to secure credit (as opposed to grants) for energy efficiency investment</p> <p>Activity 2.3.1 Conduct training of national experts and project partners in developing business plans, negotiations skills, basics of financial economics, loan application, as well as in dealing with local banks</p> <p>Activity 2.3.2. Establish cooperation agreements with local banks and other financing institutions</p>	Amount of credit funds from the CEE used by project partners	Project partners use zero credit funds from CEE	Project partners use at least USD 1 million in loan funds from CEE by 3 rd project year	Final report of the project Project reports provided for in M&E plan. Agreements	
<p>Output 2.4 USD 8 million in new cost effective energy efficiency investments secured</p> <p>Activity 2.4.1: Develop business plans for the investment projects of the program and conduct final talks with the partners</p> <p>Activity 2.4.2: Provide consulting services to the state organizations (project partners) when implementing the program</p>	Agreements signed between project sites and investors	No agreements signed	At least 4 investment agreements signed by end of 2 nd project year	Final report of the project including funds invested, tons of fuel equivalent reduced, and reductions in GHG emissions. Independent final evaluation.	

Project Outcomes	Indicator (quantified and time-bound)	Baseline	Target	Sources of verification	Risks and Assumptions
Outcome 3 Project successes throughout Belarus sustained and replicated	Energy Center is established as a self-supporting consulting institution New energy efficiency investment program. New partners of the Energy Center	No Energy Center, limited investments in loans for energy efficiency	By the project end, the Energy Center achieves self-sustaining level; new energy efficiency program launched	Final report of the project. Final workshop presentation.	The risk of inadequate project implementation (low). The risk of time delays (completion risk) (low).
Output 3.1 Create an Energy Center to provide on-going support to state organizations for realizing more energy efficiency investments Activity 3.1.1: Carry out an initial information campaign to introduce the Energy Center Activity 3.1.2: Create a source of reliable, current and complete information on modern energy efficient equipment, methodological (technical) approaches and opportunities to increase energy efficiency Activity 3.1.3: Refine and adjust the Energy Center business plan to ensure a smooth transition to financial self-sufficiency after project closure	Share of costs of the energy center covered by business revenues	No energy center	All costs of the energy center covered by business revenues by the end of the project	Project reports provided for in M&E plan.	

Project Outcomes	Indicator (quantified and time-bound)	Baseline	Target	Sources of verification	Risks and Assumptions
<p>Output 3.2 Create a pipeline of energy efficiency investments for implementation after project closure</p> <p>Activity 3.2.1: Conduct energy audits and feasibility studies to and develop new investment program</p> <p>Activity 3.2.2: Complete loan applications for the identified investment projects</p> <p>Activity 3.2.3: Sign investment agreements with new program partners</p>	Volume of new investment program adopted by the CEE	No investment program	New investment program of at least USD 10 million (including USD 5 million in loan funds, plus USD 5 million in own resources) adopted by the CEE by project completion	Final report of the project. Final workshop presentation.	The program will be implemented with the support of the CEE
<p>Output 3.3 Expand the number or budget organizations using energy norms for annual budgeting, settlement account for energy savings, and providing incentives to staff for expanding the level of investment in energy efficiency</p> <p>Activity 3.3.1: Carry out an ongoing information campaign about the project activities, including through a regularly updated website</p> <p>Activity 3.3.2: Sign agreements of cooperation between Energy Center and state organizations and municipalities not involved in the UNDP/GEF project</p>	Number of new partners using energy norms, settlement accounts and staff incentives	No budget organizations use energy norms, settlement account and issue incentives to staff responsible for increasing their levels of investment in energy efficiency	By the end of the project, at least 30 new contracts signed with budget organization using energy norms, settlement account and issue incentives to staff responsible for increasing their levels of investment in energy efficiency no of new contracts for implementation after close of the project	Final report of the project. Independent final evaluation.	

Project Outcomes	Indicator (quantified and time-bound)	Baseline	Target	Sources of verification	Risks and Assumptions
<p>Activity 3.3.3: Agreements with regional energy efficiency departments to conduct training in 30 municipalities</p> <p>Activity 3.3.4: Set up contacts between the Energy Center and energy conservation institutions in Belarus and with similar institutions (energy centers) in Eastern Europe and CIS states</p>					