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Department on Energy Efficiency
State Committee on Standardization
Republic of Belarus

UNDP/GEF Project No. 00077154
“Improving Energy Efficiency in Residential Buildings in the Republic of Belarus”

INCEPTION REPORT

(Activities 4.9.1 - 4.9.3 Project Work Plan for 2013)

Minsk
June 2013

Executive Summary

The UN Development Program plays an important role as a partner of the Republic of Belarus in implementing the energy efficiency improvement/climate change mitigation policy and programs. One of the UNDP activities in this sphere is the implementation of the Project “Improving Energy Efficiency in Residential Buildings in the Republic of Belarus” (hereinafter referred to as the “Project”) financed by the Global Environment Facility within the international technical assistance framework. The Project is co-financed by the UNDP, the Government of the Republic of Belarus and Project industrial partners.

The Project’s primary objective is to reduce energy consumption and related greenhouse gas emissions in new residential buildings by developing and efficiently implementing new functional building design methods and construction standards in conjunction with energy performance certification schemes.

The objective of this Report is to update the strategy, goals and activities schedule based on the Inception Phase outcomes.

The actual current state of development of the construction industry and residential sector has been assessed within the framework of the Inception Phase. The obtained information is later compared with the baseline described in the Project Document. This assessment allows identifying priorities and risks, updating and detailing the Project activities and adjusting the timing of their implementation.

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TABLE OF CONTENTS

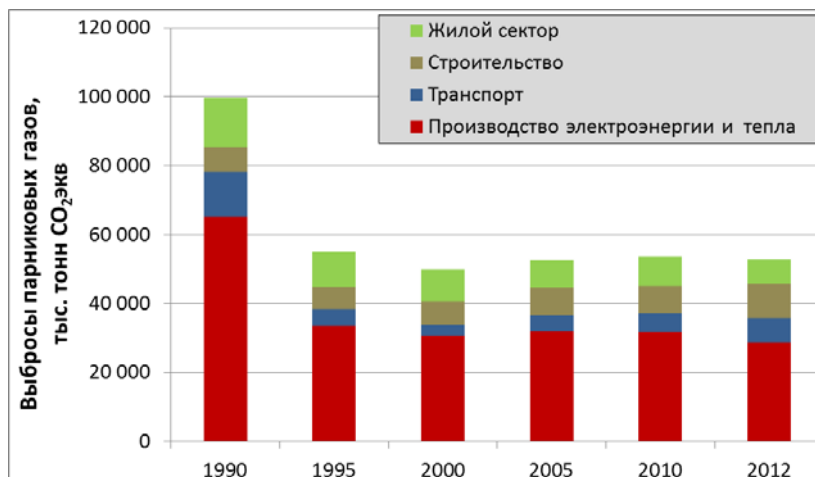
page

Introduction	5
1. Review of the Project Document	7
1.1 Project Summary.....	7
1.2 Indicators and Risks.....	8
2 Basic Problematics	10
2.1 Origin of the Current Problems.....	10
2.2 National Context.....	11
3 Inception Phase Issues	16
3.1 Inception Phase Methodology.....	16
3.2 Inception Phase Activities.....	16
3.2.1 Recruitment of the Inception Phase Experts.....	16
3.2.2 Meetings with the Project Partners.....	17
3.2.3 Information-Raising Activities.....	17
3.2.4 Meeting of Project Partners	17
3.2.5 Formation of National Steering Committee	17
3.2.6 First Meeting of the National Steering Committee	17
3.2.7 Project Inception Workshop	18
3.2.8 Second National Steering Committee Meeting	18
3.2.9 Inception Report.....	18
4 Updating Project Goals.....	19
4.1 Current Situation in the Construction Industry and Housing and Public Utilities Sector.....	19
4.2 Impact of Situation Changes in Respective Sectors on the Project Implementation.....	24
4.3 Project Management Structure.....	26
4.3.1 Managing and Executive Bodies	26
4.3.2 Group of Experts	27
4.3.3 Organization of Pilot Building Construction Works	28
4.4 Analysis of Earlier Identified Risks and Their Evolution	31
4.4 Updated Project Goals and Their Priorities	33
5 Updated Project Work Plan	35
5.1 Methodology and Approaches	35
5.2 Updating the Project Logframe Matrix	35
5.3 Annual Detailed Work Plan for 20013.....	36
ANNEXES	37
List of Annexes	37
Annex 1: Expected Outcomes and Main Activities.....	38
Annex 2: Project Logframe Matrix	44
Annex 3: Project Partners and Beneficiaries	48
Annex 4: Meeting of Stakeholders/Organizations.....	49
Annex 5: Состав NSC	52
Annex 6: Minutes of the First NSC Meeting.....	53
II.6.1 Meeting Minutes.....	53

<i>II6.2 Adapted Annual Detailed Work Plan 2013</i>	60
<i>II6.3 Tentative Schedule of Demonstration Construction</i>	71
<i>II6.4 Project Staff, International and National Consultants</i>	72
Annex 7: Inception Workshop Documents	77
<i>II7.1 Schedule of Meetings Preceding Inception Workshop</i>	77
<i>II7.2 Letter of Invitation from the UNDP/GEF Project Office</i>	80
<i>II7.3 Letter of Invitation from the National Executing Agency</i>	81
<i>II7.4 Workshop Agenda</i>	82
Project Inception Workshop	82
<i>II7.5 List of Participants</i>	84
Annex 8: Minutes of the Second NSC Meeting	87
<i>II8.1 Minutes of the Meeting</i>	87
<i>II8.2 Annual Detailed Work Plan 2013</i>	93

Introduction

The economy of Belarus is heavily dependent on imports of fossil fuels from Russia. Nonindustrial buildings consuming over 20 percent of locally produced electrical energy and nearly 40 percent of heat energy are one of the primary consumers of these resources in the country. Along with the construction sector in the country, they are responsible for nearly one third of aggregate greenhouse gas emissions:



Greenhouse gas emissions, '000 tons of CO₂ eqv

Residential sector
Construction sector
Transport sector
Electric power and heat generation

On the other hand, specifically these sectors have considerable potential to substantially reduce inefficient fossil fuel consumption, since energy performance indicators in buildings are still lagging somewhat behind the international best practice. For example, specific energy consumption for heating and domestic hot water supply is three times higher than that specified by the passive house standards.

The UNDP/GEF Project “Improving Energy Efficiency in Residential Buildings in the Republic of Belarus” aims to reduce this gap. Its strategy, objectives and goals are outlined in the Project Document¹. Total grant resources allocated for the Project implementation amount to US\$4.9 million. Combining these resources with efforts of the Department on Energy Efficiency under Gosstandart of the Republic of Belarus, Ministry of Architecture and Construction of the Republic of Belarus, industrial partners and other stakeholders, the Project provides for support for the development of the respective policy and legal framework and also for designing and construction of three demonstration multi-storey energy efficient residential buildings.

Despite the availability of engineering capabilities, materials and main production facilities, the achievement of the goal of improving energy efficiency in the residential sector of the Belarus’ economy is constrained by various technical, legal, institutional, financial and information barriers and also by inadequate development of the national potential. These barriers are outlined in the Project Document and undoubtedly they have been reduced from the time of preparing and approving the Project, however they are still substantial. The circumstances causing them to emerge are kept under constant review of the general public, particularly lately, when the issue of improving the energy efficiency in the construction industry and residential sector has been included into the List of Priorities of the Government and line ministries.

¹ The Project Identification Form was prepared in March 2010. The Project Document was developed and submitted to the GEF in September 2011, approved by the UNDP and Department on Energy Efficiency under Gosstandart of the Republic of Belarus in July 2012. The Project was registered in the database of international technical assistance programs and projects 10 August 2012 (Reg. No. 2/12/00053)

Therefore, the current basic level of development of this sector needs to be specified to determine a starting point from which the Project effect and activities will be commenced to remove the identified barriers. To specify this, the Project provides for a special Inception Phase for 2013 (activities 4.9.1-4.9.3 of the Annual Work Plan) aimed to additionally review current legislative and institutional frameworks, different technical standards, construction techniques and materials, project designs, options of using renewable energy sources, heat supply and distribution schemes and other engineering solutions to improve energy performance of residential buildings of various types in the Republic of Belarus. The obtained information is to be used later for comparison with the baseline described in the Project Document. This assessment will help identify priorities, update and detail the Project activities and make adjustments in the implementation schedules. Therefore, the objective of this Report is to update the Project goals and Activities Implementation Schedule based on the results of the above analysis.

This Report:

- contains the Executive Summary of the Project Document;
- describes basic problematics in the sphere of improving energy efficiency in the construction and operation of residential buildings;
- validates the methodology and comprises the List of Inception Phase Activities, including the Inception Workshop;
- updates the Project baseline information;
- analyzes the impact of new circumstances and barriers on the Project implementation and formulates respective goals to remove identified barriers;
- specifies Project approaches to implement pointed out goals;
- details the Project Work Plan, including the description of activities, expected results, their targets and relevant expenditures.

This Report is prepared using the results of studies conducted at this Inception Phase by international and national experts, with their contribution being reflected in the following respective reports:

- Technical Legal and Regulatory Acts, Construction Techniques and Materials Used in the Construction Sector in the Republic of Belarus / Sokolovsky L.V. // June 2013 – 21 pages.
- Current Situation and Substantiation of the Need of Adjusting Approaches to Implementation of the Project Activities / Danilevsky L.N. // June 2013 – 22 pages.
- Analysis of Existing Practice of Performing Energy Audit in Residential Buildings and Recommendations to Improve Energy Audit in Residential Buildings in Belarus / Molochko A.F. // June 2013 – 24 pages.
- Results of Analysis of Existing Methodologies and Practices for Monitoring Integrated Energy Performance Characteristics of Buildings / Molochko A.F. // June 2013 – 17 pages.
- Results of the Critical Analysis of Existing Methodologies and Practices for Monitoring and Calculation of Energy Efficient Buildings / Alfio Galata // June 2013 – 72 pages.
- European Norms, Rules and the best Practice in Designing and Construction Envelopes, HVAC Systems, the Use of Renewable Energy Sources and Other Technologies for Improving Energy Efficiency in Different Residential Buildings / Alexander Schellhardt // June 2013 – 42 pages.

1. Review of the Project Document

1.1 Project Summary

The registered version of the Project Document comprises the following key information.

Project title: Improving Energy Efficiency in Residential Buildings in the Republic of Belarus	
Outcome of the UNDP Country Program: National capacity to mitigate and adapt to climate change enhanced	
National Executing Agency: Department on Energy Efficiency under the State Committee on Standardization of the Republic of Belarus	
Implementation Entity: UNDP	
Project budget:	US\$ 4,900,000
- UNDP	US\$ 400,000
- GEF	US\$ 4,500,000
Start date:	1 January 2012
Completion date:	30 December 2016
Co-financing:	
- Department on Energy Efficiency	US\$ 2,300,000
- Ministry of Architecture and Construction	US\$ 2,000,000
Other co-financing:	
- Ministry of Natural Resources and Environmental Protection, MAPID, Grodnograzhdanproekt	US\$ 23,000,000
Total Project cost:	US\$ 32,200,000

Project Objective: To reduce the energy consumption and related GHG emissions with the focus on new residential buildings by introducing new performance based building design and construction standards with related energy certification scheme. By this, the energy consumption of new buildings is sought to be cut by at least 70% compared to the existing building stock constructed before 1993 and by 40% compared to the buildings erected in accordance with the current construction norms and thermal standards in place.

Four main expected Project outcomes are as follows (see also *Annex 1*):

Outcome 1: Strengthened legal and regulatory framework and mechanisms to enforce the legislation for improving the energy efficiency of the building sector with the focus on new residential buildings

This Project component facilitates adoption of new energy efficiency standards, energy audit methodologies and residential building certification schemes upon completion of the Project with consideration for the latest requirements and best practices in the EU countries.

Outcome 2: Enhanced capacity of the Belarusian specialists to implement and effectively enforce the new energy efficiency building standards and construction norms

This component provides building capacity of the Belarusian specialists in the field of designing and construction of energy efficient buildings. Special attention should be paid to the use of the integrated approaches to designing in order to fully use energy saving opportunities offered by architectural and engineering solutions while minimizing construction costs. Specific areas of activities in which the specialists should be involved comprise as follows: optimal selection of the building shape and orientation, use of solar energy, cost-efficient and energy-efficient use of construction materials, introduction of energy-saving devices and equipment, ventilation exhaust air/waste water heat recovery. Considerable attention should be focused on the proper installation of materials and equipment aimed at efficiently using them. The relevant training materials need to be prepared and integrated in the university programs.

Outcome 3: Implementation of demonstration projects of energy efficient building

Implementation of pilot projects is aimed to demonstrate energy-efficient and cost-efficient potential of energy saving measures using designing, construction and operation of the mass-construction three multi-storey residential buildings in two cities in Belarus. Subject to the commitments of the Project partners (UE “Institute Grodnograzhdanproekt”, OJSC “MAPID” and Ministry of Natural Resources and Environmental Protection), one building is to be built in Grodno and two – in Minsk.

Outcome 4: Raising awareness, monitoring and disseminating experience

This Project component facilitates integration and systematic application of new energy standards into the practice of building designing and construction, development of market monitoring mechanisms to study the effect of different managerial decisions in the process of the Project implementation and upon Project completion, accumulation and summarization of experience to flexibly manage the Project and replicate its results in Belarus and beyond it.

1.2 Indicators and Risks

The main Project indicators (*Annex 2*) as contained in the Project Document provide primarily the reduction in energy consumption by not less than 70% in new buildings compared to the residential building stock commissioned prior to 1993 and by 40% compared to the residential building stock built subject to the effective construction rules and regulations and thermal standards. The total annual energy consumption for heating and domestic hot water supply will be lower 60 kWh/m². According to the effective thermal standards² and actually achieved indicators, for comparison, thermal energy consumption in residential buildings is about 120-130 kWh/m²/year (including not more than 60 kWh/m²/year for heating and 60-70 kWh/m²/for water heating).

² This includes normative and technical regulatory and legal acts of the Republic of Belarus being in force as of early September 2011, primarily, Technical Code of Common Practice (TKII) 45-2.04-196-2010 “Thermal Protection of Buildings. Heat and Power Performance. Definition Rules”, as well as the Comprehensive Program for Design, Construction and Reconstruction of Energy-Efficient Homes in the Republic of Belarus for 2009–2010 and until 2020 approved by Resolution of the Council of Ministers of the Republic of Belarus No. 706 of 1 June 2009.

According to the Project Document, the Project direct contribution to the greenhouse gas emission reduction is estimated to be about 12.2 thousand tons of CO₂ eqv due to implementation of additional measures aimed to improve energy efficiency in demonstration buildings the performance of which exceeds requirements of effective construction rules and regulations and thermal standards.

The Project indirect contribution is based on the expected achievement of the target by the time of the Project completion in terms of the number of buildings under construction or being designed during the last year of the Project implementation and having energy consumption indicators according to more stringent energy efficiency standards. It is presumed that the number of buildings is expected to be 80 with a total space of 10 thousand square meters each. In this case, the expected greenhouse gas emission reduction will be estimated at about 220 thousand tons of CO₂ eqv.

Main risks to the Project listed in the Risk Register comprised in the Project Document are associated with political and regulatory, strategic, organizational and operational risks, specifically:

- Political and regulatory risks:
 - pricing policy in the energy resources sphere provides no motivation for investments in improvement of energy efficiency in buildings;
 - adopted new construction norms and standards are not fully implemented in practice;
 - lack of or slow adoption of new energy consumption construction norms and minimum standards.
- Organizational risk:
 - insufficient commitment to the Project at the inter-institutional level and inadequate inter-institutional cooperation in the process of the Project implementation;
 - shortage of certified affordable locally-made energy efficient construction materials and equipment impeding achievement of targets of buildings' energy efficiency;
 - lack of reliable data on the market condition to monitor the Project outcomes and plan further policy measures.
- Strategic risk:
 - lack of motivation among construction companies' managers and other specialists (architects, construction engineers, construction workers and their managers) to be involved in training activities and application of obtained knowledge in practice.
- Operational risk:
 - shortage and/or inadequate skills of local specialists preventing from the efficient implementation of the Project and replication of its results;
 - stated Project co-financing is not provided or is provided at an inadequate scale.

2 Basic Problematics

2.1 Origin of the Current Problems

The countries with limited reserves of natural resources are specifically concerned to gain independence from the imports and obtain reliable deliveries of energy in sufficient quantities to be supplied to energy-intensive economy sectors in the country. Belarus is heavily dependent on the import of fuel and energy resources (FER) which amounted to over 85% of the total consumption in 2013. The share of primary FER in the residential building stock accounts for up to 40% for generation and consumption of heat energy and about 20% - electric energy. This energy is non-uniformly distributed among the consumers (Figure 1).

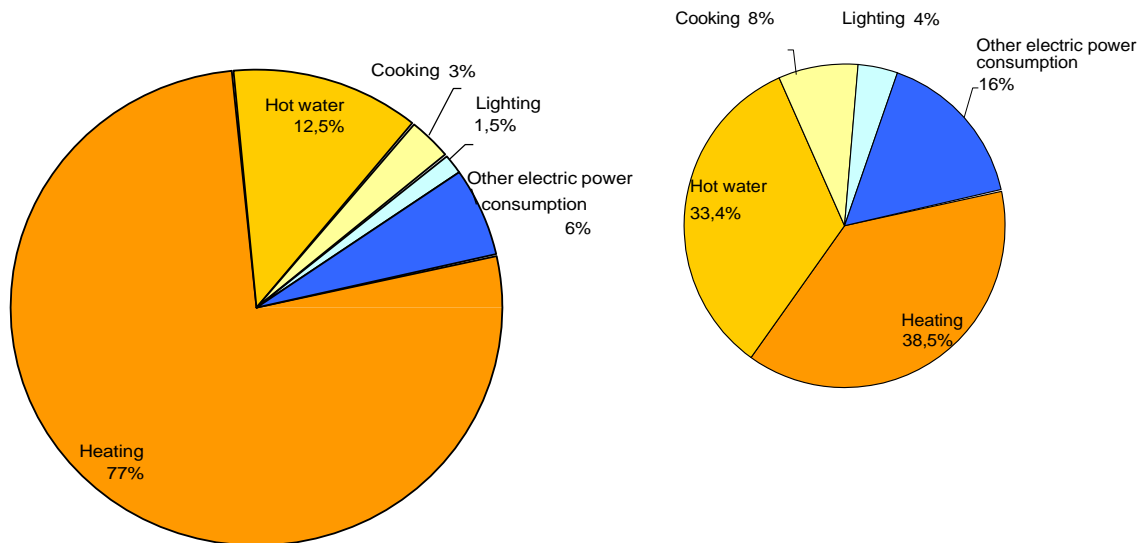
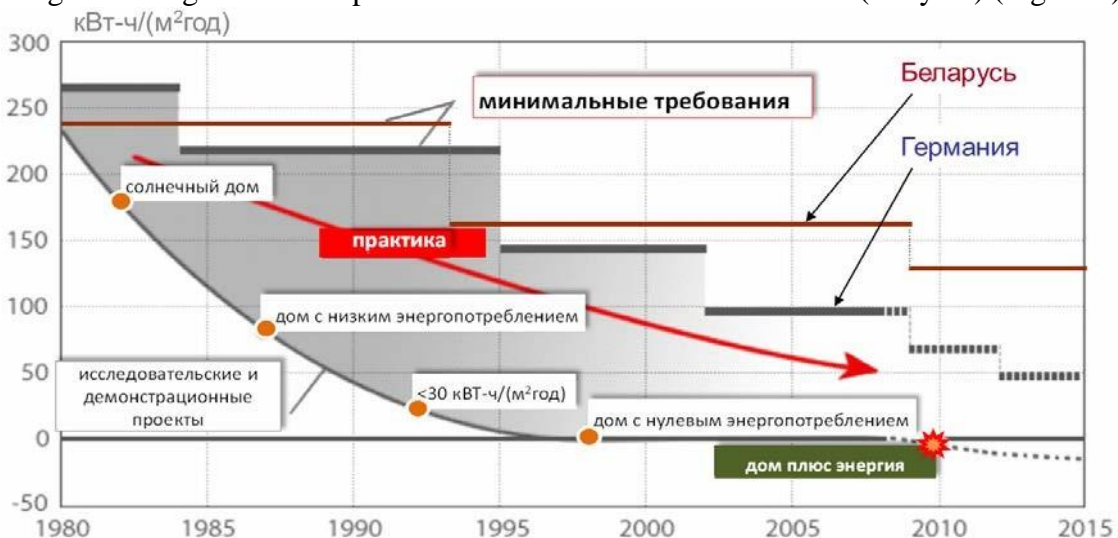


Fig. 1: Share of consumption of supplied energy in existing residential buildings (left diagram) and in recently constructed energy-efficient residential buildings (right diagram)

The consumption of thermal energy for heating, ventilation and domestic hot water supply in existing buildings varies, on the average, from 150 kWh (m²/year) to 300 kWh (m²/year), while modern buildings consume not more than 130 kWh(m²/year), however these indicators are still far lagging behind current trends in the European Union countries' residential sector where new buildings are designed with a specific indicator of lower than 60 kWh (m²/year) (Figure 2).



kWh(m²/year); Belarus; Germany

minimal requirements; solar house; practice; energy-efficient house; pilot and demonstration projects; <30 kWh (m²/year); zero-energy building; energy-plus-house

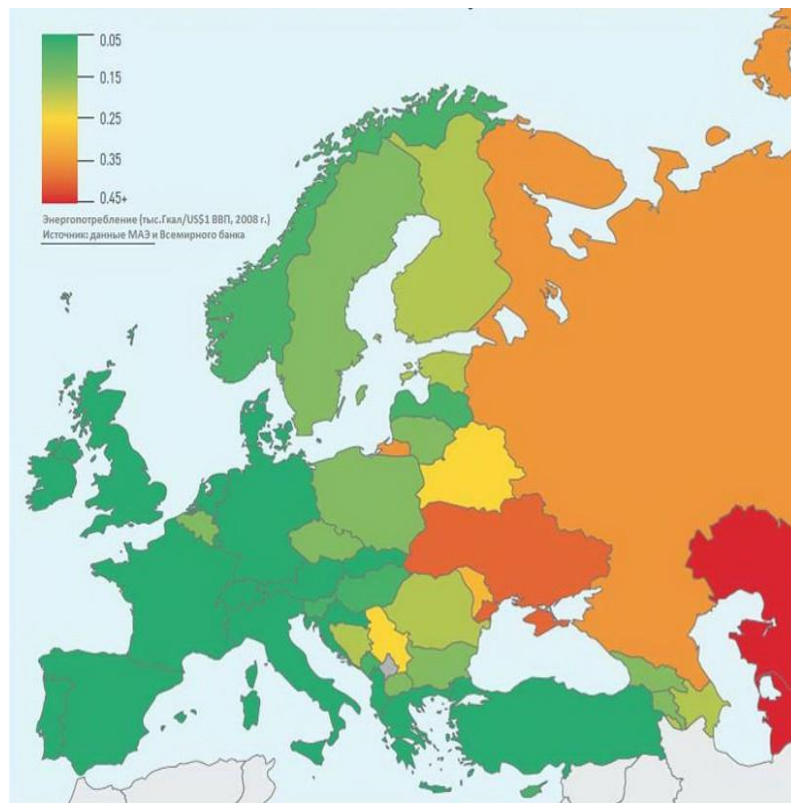
Fig. 2: Comparative dynamics of specific standard indicators of buildings' energy performance

Basic underlying causes of low efficiency of the FER use in the residential sector are described in detail in the Project Document. Given specific updates, these might include as follows:

- Low motivation for business and investors as the cost-saving model for energy and heat conservation is not working under the cross-subsidy schemes and currently pursued tariff policy. While some examples of construction and operation of energy efficient buildings with a specific indicator of the total thermal energy consumption of about 100 kWh (m²/year) are available in the housing construction practice, their economic indicators (IRR, NPV) are not evident due to few cases not allowing the analysis to be performed and in the environment of unjustified and changing tariffs.
- Shortage of technical norms and standards for designing, construction and operation of buildings to support the approaches based on minimization of integrated characteristics of the building energy consumption as a whole. New approaches to the integrated design of buildings to minimize energy consumption while meeting current sanitary and comfort requirements are still not prescribed either by the legislation or technical legal and regulatory acts. Outdated requirements for buildings' structural components and engineering equipment based on setting performance standards for each component should be replaced by integrated performance standards.
- Designing organizations lack adequate experience and skills to design energy-efficient buildings. Traditional approaches give no consideration to such an aspect as the building energy performance as a whole. Opportunities to save energy through optimal siting and shape of a building, window location, active and passive use of solar energy, exhaust air and waste water heat recovery and selection of an optimal building energy saving scheme are not fully used.
- The design and estimate documents lack technical requirements for specifics of selection and installation of materials and heat-insulating components and completely lack relevant procedures resulting in the random selection of thermal insulation installation techniques and increase in construction technology risks. This either increases heat losses through the building envelope or contributes to moisture accumulation in apartments respectively.
- Lack of a full-fledged system of monitoring energy efficient design of residential buildings, including the methodology of calculation of integrated energy performance of buildings and methodological requirements for performing residential building energy audits to monitor reaching energy efficiency indicators. Construction organizations and construction supervisory bodies do not fully use modern techniques of control of supplied materials, their proper selection and installation.

2.2 National Context

According to official statistics, in 1995 the Belarus' GDP energy intensity remained at the level of 0.7 tons of oil equivalent (t.o.e.) per US\$1,000 of GDP (in terms of PPP) and was one of the highest in the world. This indicator reduced down to 0.23 t.o.e. by 2013 (Figure 3), however, it still exceeds corresponding indicators 1.5-2-fold in more developed countries with similar climatic conditions. Belarus seeks to further reduce the GDP energy intensity to 0.21–0.22 t.o.e. by 2015.



Energy consumption (ths Gcal/US\$ 1 GDP, 2008)

Source: IEA and World Bank data

Fig. 3: Comparison of European countries in terms of GDP energy intensity (in tons of oil equivalent per US\$1,000)

The legal framework of FER efficient use is primarily based on the Law of the Republic of Belarus “On Energy Saving”. That Law was adopted in 1998 and it was amended only by making formal revisions. The current situation in this sphere requires improvement of this Law and inclusion of the following into the amended new legal framework: definition of the energy efficient project concept, provision of favorable conditions for organizations (both commercial and non-profit making) in implementing such projects, procedures for activities of energy service companies in the country and creation the most enabling environment for promoting their business, progressive FER consumption norms and conditions for mandatory energy inspection (energy audit). The Draft Law has been recently submitted to the Council of Ministers for consideration. Subject to the Directive of the President of the Republic of Belarus³, the country’s entire regulatory and legal system in the energy efficiency improvement sphere is rapidly developing seeking to harmonize with the relevant EU legislative framework and technical regulations of the European Union.

The institutional structure designed to implement the national energy saving policy reflects a centrally planned activity concept subject to which national, regional and sectoral FER efficiency improvement programs are the main tool for achieving targets (Figure 4).

Since 1996, Belarus has implemented three national energy saving programs and annually implements regional and sectoral programs. Over that period, the GDP energy intensity reduced by about 65% compared to 1995. Over the last five years,

³ Directive of the President of the Republic of Belarus No. 3 of 14 June 2007 "Economy and Thrift - the Main Factors of Economic Security of the State".

the GDP energy intensity reduced nearly by 30%, while investments in the energy efficiency activities increased more than 3-fold and made up nearly 3.5% of the GDP. Currently, the fourth National Energy Saving Program for 2011–2015⁴ is under implementation. The Program is mainly aimed to increase performance of conventional energy generating sources, develop non-conventional and renewable energy sources, reduce energy transportation losses, recover secondary energy resources, improve energy efficiency in the industrial construction sector and agricultural sectors, reduce energy costs in the housing and public utilities sector and to provide economic incentives for energy efficiency improvement.

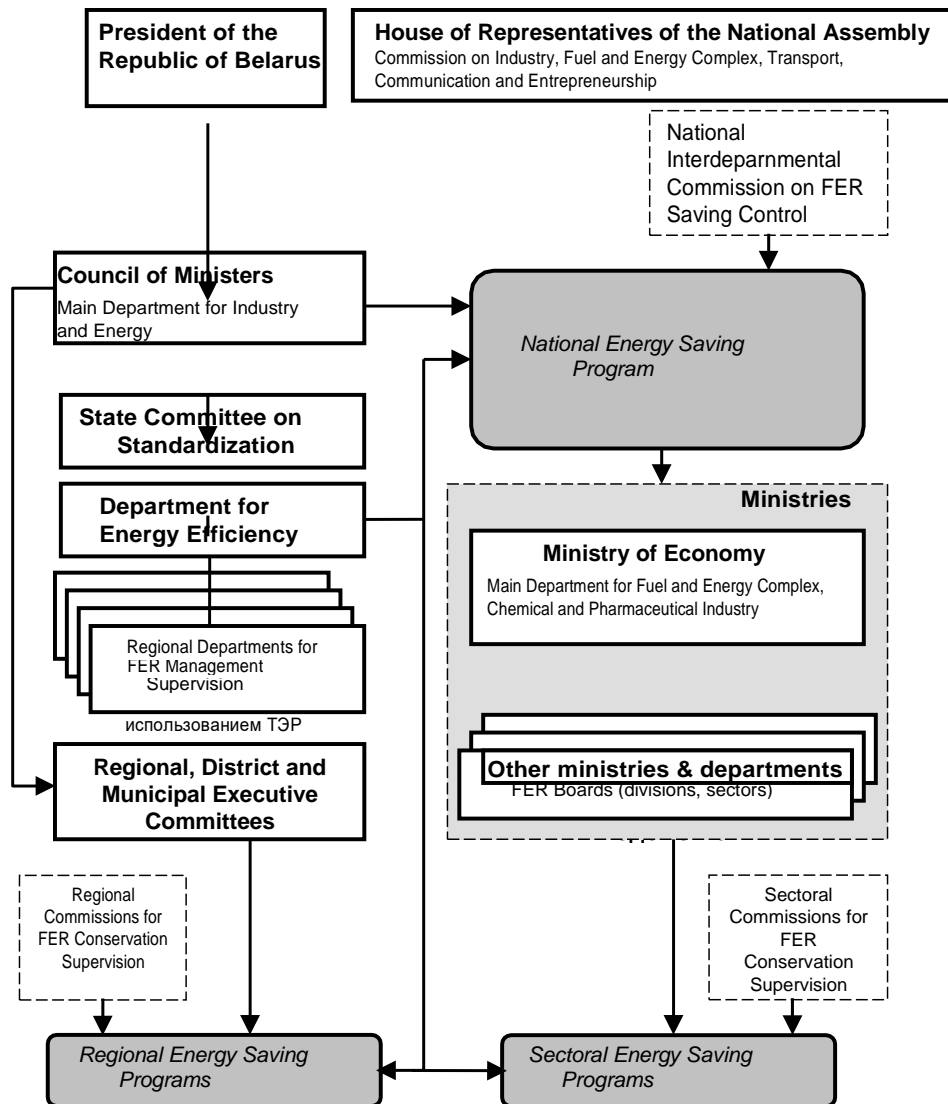


Fig. 4: Belarus' institutional structure in for implementing energy saving policy

The Program, in particular, provides for that the construction and housing/public utilities sectors are to save FER in the amount of 7.1-8.9 mln t.f.e., specifically, by optimizing heat supply – 1,000-1,250 ths t.f.e., introducing metering and automatic control devices in the heat/gas/water supply systems – 170-210 ths t.f.e., increasing thermal resistance of enclosures of buildings, structures and residential building stock - 250-400 ths t.f.e., using automatic lighting control systems and energy efficient lighting fixtures and sectionally separated lighting – 200- 250 ths t.f.e.

⁴ Approved by Resolution of the Council of Ministers of the Republic of Belarus No.1882 of 24 December 2010.

For the purpose of implementing five-year national energy saving programs, regional and sectoral energy saving programs are elaborated. For example, the Belarusian Government adopted the Comprehensive Program for Design, Construction and Reconstruction of Energy-Efficient Homes in the Republic of Belarus for 2009–2010 and until 2020⁵ in the construction sector.

The cost of the national program implementation is estimated at about US\$8,662.5 mln. The share of funds allocated from the national and local budgets and resources of Sectoral Innovation Funds is estimated to be on the average from 10 to 20% (Figure 5). Expected results to be achieved through implementation of this program are as follows:

- GDP energy intensity reduced by 29-32 percent in 2011-2015 compared to 2010, with the GDP growth rates being 162-168 percent;
- FER saving achieved by using state-of-the-art technologies and equipment and implementing other energy saving activities is estimated to be 7.1-8.9 mln tons of oil equivalent (1 t.f.e. = 0.7 t.o.e.) over the period of 2011-2015;
- the share of local FER in the boiler and furnace fuel balance made up not less than 28% by 2015;
- greenhouse gas emissions⁶ requirements met.



Investments, US\$ mln; budget funds of all levels; enterprises' own and raised funds

Fig. 5: Dynamics of financing energy saving activities under target programs

It is obvious that currently the potential of low-cost and short-term energy-saving activities is actually exhausted. Further substantial FER saving may be achieved, provided that economic instruments for the technical refurbishment and replacement of the energy-intensive equipment are introduced, a renewable energy sources infrastructure is established and energy efficient technologies are implemented both on the energy generation and transmission side and on the energy consumption side. These activities require substantial financial resources and are to be implemented within a longer period of time.

⁵ Approved by Resolution of the Council of Ministers of the Republic of Belarus No. 706 of 1 June 2009.

⁶ The planned fuel saving (through energy saving activities, use of renewable energy sources, including biomass, hydroenergy, etc.) and environment-related activities (emission reduction, increase in areas under forests, etc.) provide for reduction in greenhouse gas emissions by not less than 10 mln tons of CO₂ eqv over the period of 2013 – 2020 (National Program for Climate Change Mitigation Measures for a Period of 2013– 2020 adopted by Resolution No. 510 of 21.06.2013 of the Council of Ministers of the Republic of Belarus).

Based on the GDP growth rate forecasts, GDP projected values and GDP structure for the period up to 2020⁷, the energy saving potential in the country as a whole reflecting the planned energy intensity target to be achieved in terms of a ton of fuel equivalent (t.f.e.) is estimated as an aggregate value of about 7.1-8.9 mln t.f.e. during the next five years, or about 5-6% of the five-year gross FER consumption. Table 1 illustrates the sector-wise energy saving potential and it may be seen that this indicator reaches 25% of the total energy saving potential in the construction sector and residential building stock.

Table 1. Energy saving potential for a period of 2011-2015

Sector	Energy saving potential, ths t.f.e.
Construction and architecture	414-560
Industry	2,563-2,842
Energy	1,346-1,596
Transport	122
Agriculture	550-997
Housing and public utilities sector	885-1,055
Defense, healthcare, education, communication and information	318
Other	902-1,360

⁷The Sixth National Communication of the Republic of Belarus subject to commitments under the United Nations Framework Convention on Climate Change. – Minsk, 2013 (Draft)

3 Inception Phase Issues

3.1 Inception Phase Methodology

The Inception Phase objective is to primarily specify the current basic level of development of the construction and residential sector helping determine and describe a starting point from which the Project effect and activities will be commenced to remove the identified barriers. In addition, the Inception Phase activities are intended to specify the Project organizational structure and assess readiness of the Project partners to meet their commitments and to contribute to developing further the coordination of joint efforts aimed to achieve the Project targets. The obtained information is later compared with the baseline described in the Project Document. This assessment allows identifying priorities, updating risks, detailing the Project activities and adjusting the timing of their implementation.

To achieve the Inception Phase objectives, the Project implemented a methodological approach comprising solutions for the following goals:

- Updating the strategy of the Project and its goals by analyzing the current situation in respective sectors and existing risks and by comparing results of this analysis with the Project Document, as well as learning lessons of implementation of other international projects related to energy efficiency improvement.
- Updating Project partners' commitments, identifying the range of their tasks and responsibilities, elaborating proposals to form an organizational framework of partnership between all stakeholders.
- Assessing the need of changing the Project management structure, defining the role, functions and liabilities of the decision-making system participants.
- Determining the required composition of the Project experts, their duties and responsibilities.
- Determining the required composition of contractors to provide services to the Project, their tasks and responsibilities.
- Updating the Project logical matrix, the system of reporting, monitoring and assessment of the Project/plans progress and schedule implementation.
- Reviewing and approving a Detailed Work Plan for the next year and its budget.

3.2 Inception Phase Activities

An active stage of the Inception Phase began in January 2013 when the Project accounts were opened, Project Management Unit staff was recruited, office premises were rented and office equipment was installed. The Inception Phase included the following main activities according to the above described methodology:

3.2.1 Recruitment of the Inception Phase Experts

Five national and international experts were recruited over the period from February to March 2013, and mainly assigned to analyze the current situation in the sphere of designing, construction and operation of the energy efficient buildings in the Republic of Belarus, construction techniques and materials used, comprehensiveness of technical legal and regulatory acts applicable to the housing construction. Results of this analysis summarized below in Section 4.1 helped update the strategy, determine priorities, identify new risks and substantiate the need to adjust approaches to the Project activities implementation and specify the Project goals.

3.2.2 Meetings with the Project Partners

Meetings and consultations with the Project partners (see the List of Partners in *Annex 3*) continued over the entire Inception Phase up to an Inception Workshop. Primarily, formal and informal meetings and consultations with the Department on Energy Efficiency under Gosstandart of the Republic of Belarus and National Project Executing Agency. The first formal meeting in the Department was held 29 January 2013 which was attended by other Project partners, in particular, OJSC “MAPID”, RUE SPC on Geology, UE “Institute Grodnograzhdanproekt” and SE “Institute of Housing - NIPTIS named after S.S. Ataev”. Meetings with the Project partners and other stakeholders were held to discuss the current situation in the construction and residential sector, update the Project strategy, short-term and long-term Project goals, expected Project implementation-related impacts, coordination of cooperation and also to conduct negotiations on organizational forms of involvement of these partners in the Project entailing specific contractual obligations.

3.2.3 Information-Raising Activities

Information-raising activities for a wider audience of stakeholders, including non-governmental and social organizations were held to discuss the Project strategy and coordination of the Project goals with other relevant initiatives. Main provisions and goals of the Project were reported at the National Conference on Sustainable Development of the “Partnership in Action” territories arranged by the Johannes Rau Minsk International Center for Education and Exchange and held 26-27 April 2013. A Workshop “Energy Saving in the Industry and Construction Sectors: Experience and Prospects” was held 17 May 2013 jointly with the Department on Energy Efficiency at which the Project experts presented the results of analysis of the current situation in the construction sector for a discussion and also the Project strategy, including main goals. A review and analysis of the energy efficiency legislation and standards of the Republic of Belarus were presented within the framework of activities held by the International Public Association “Ecoproject Partnership” and Center for Environmental Solutions 20-21 June 2013.

3.2.4 Meeting of Project Partners

Meeting of officials taking decisions on behalf of the Project partners was arranged and held jointly with the Department on Energy Efficiency and UNDP 12 February 2013 (see the Meeting Agenda and Minutes in *Annex 4*). It was aimed to discuss readiness of potential customers, developers and investors to fulfill their commitments stated at the Project Document approval stage, align necessary joint Project implementation activities, discuss organizational issues of cooperation between all stakeholders, including the composition of the National Project Steering Committee and also the issues related to selection and implementation of pilot projects to improve energy efficiency of new residential buildings.

3.2.5 Formation of National Steering Committee

The National Project Steering Committee (NSC) was formed in March 2013 subject to a respective Order issued by the Department on Energy Efficiency based on letters of stakeholders. Representatives of the Project partners, other relevant bodies of state administration and their subordinate institutes and also representatives of large design and construction organizations were included into the NSC as its members. The NSC members List is provided in *Annex 5*.

3.2.6 First Meeting of the National Steering Committee

The first NSC meeting was held 2 April 2013 to align decisions taken at the above Project partners’ meeting, formalize Project targets, short-term priorities and goals with consideration for the current state of the construction sector development, review organizational issues related to the NSC/Project partners and experts composition enlargement, discuss the Draft Project Work Plan for 2013, including the list of pilot projects and respective schedules for their designing and construction and set the Inception Workshop date and agenda. The Agenda, Minutes and List of

Participants are provided in *Annex 6*.

3.2.7 Project Inception Workshop

Main documents for the Inception Workshop held 28 June 2013 are provided in *Annex 7*. Inception Workshop presentations are posted on the Project website www.effbuild.by. The aim of the Inception Workshop was as follows:

- informing Project partners about the results of the surveys performed within the framework of the Inception Phase and difference of the current situation from the baseline described in the Project Document;
- reaching an understanding of their tasks and responsibilities, their role and functions by all Project partners within the Project organizational structure, including reporting, monitoring, Project progress assessment and further scaling-up (use) of the Project results;
- reviewing and agreeing on the Project strategy, Project key targets and the first Annual Work Plan;
- scheduling and identifying Agenda issues for the next NSC meeting to formalize discussion results at the Inception Workshop.

3.2.8 Second National Steering Committee Meeting

The second NSC Meeting was aimed to formalize provisions and recommendations of the Inception Phase and Inception Workshop, discuss the Project progress and update the Project Work Plan for 2013 and for the future, approve a respective budget, review ongoing work on pilot projects and also make decisions regarding the selection of a leading pilot project designing organization and model of its recruitment subject to the UNDP Rules and Procedures and national legislation. The second NSC Meeting was held immediately after the Inception Workshop (the Agenda, Minutes and List of Meeting Participants are provided in *Annex 8*).

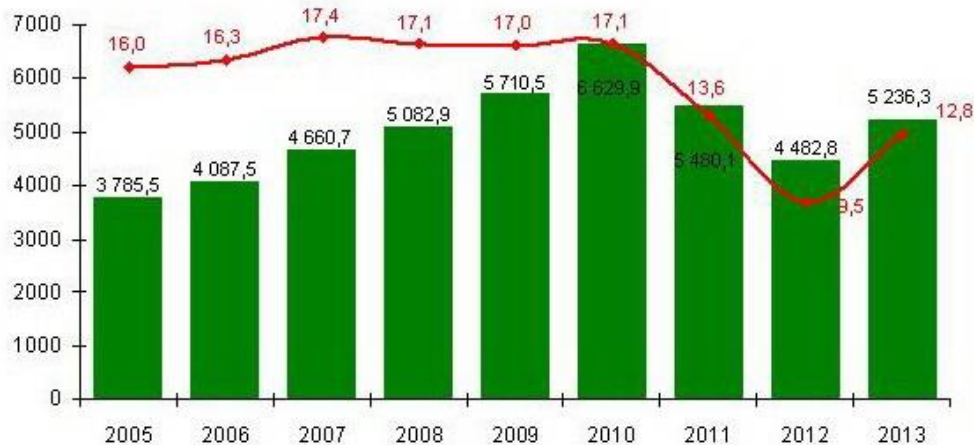
3.2.9 Inception Report

Preparation of this Report based on the results of the Inception Phase implementation is an important part of this phase summarizing conclusions derived by analyzing the situation at the outset of the Project implementation and providing recommendations on organizational issues and also on updating Project strategy, targets and goals. These conclusions and recommendations are provided below in Sections 4 and 5.

4 Updating Project Goals

4.1 Current Situation in the Construction Industry and Housing and Public Utilities Sector

Currently, the construction of new residential buildings in Belarus has averaged about 5.5 mln m² per year (Figure 6).



■ Ввод в эксплуатацию общей площади жилых домов, тыс. кв. м

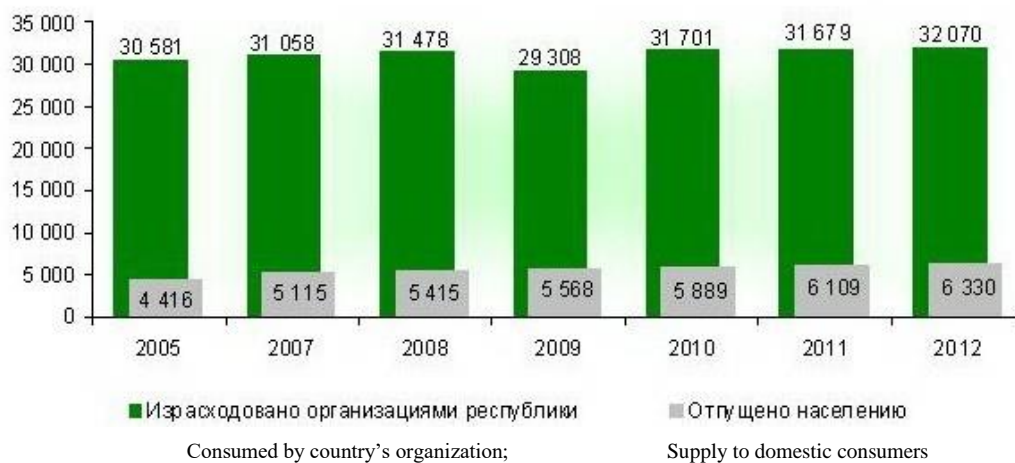
—●— Количество жилых домов, тыс. ед.

Commissioning total space of residential buildings, ths m²

Number of residential buildings, ths units

Fig. 6: Dynamics of commissioning residential buildings

The residential sector was responsible for about 16% of the total electricity consumption and about 33% of the metered heat consumption in Belarus (Figures 7 and 8). The heat and hot water demand in multi-apartment buildings is by over 95% covered by centralized district heating systems connected to co-generation plants and heat-only boilers.



■ Израсходовано организациями республики

■ Отпущено населению

Consumed by country's organization;

Supply to domestic consumers

Fig. 7: Dynamics of electricity consumption (million kWh)



Fig. 8: Dynamics of heat consumption (thousand gigacalories)

Currently (mid 2013), the total residential building stock space amounts to about 242 mln m² of which 170 mln m² were built before 1993 using outdated norms subject to which the energy consumption for space heating was about 120-170 kWh/m²/year. The latest thermal standards enforced in Belarus in 2010 provide reduction in energy consumption for space heating to 60 kWh/m²/year. According to the available assessments, energy consumption for heating water in residential buildings is 60-70 kWh/m²/year. The installation of heat meters and automatic regulation of heating in all residential and public buildings has been mandatory since 2007. Implementation of activities under the Comprehensive Program for Design, Construction and Reconstruction of Energy-Efficient Homes in the Republic of Belarus for 2009–2010 and until 2020⁸ will contribute to further reduction in energy consumption in new residential buildings to 40 kWh/m²/year by 2020. According to official statistics, over 1,6 mln m² of residential buildings meeting these requirements were built and commissioned in 2009-2012. Annual saving of thermal energy for their heating reached around 82 mln kWh in 2012 which is equivalent to 12.3 ths t.f.e.

Recently, real prerequisites have been created in the country for a full transition to designing and construction of only energy efficient multi-storey residential buildings with energy consumption level for space heating of 40 kWh/m²/year since 2014–2015, as well as to large-scale thermal renovation of the old residential building stock.

To practically implement these prerequisites, the Draft Comprehensive Program for Development of Energy-Efficient Construction, Reconstruction and Renovation of Homes for 2013-2015 and until 2020 is under discussion since early 2013. The Program-planned implementation of measures on development of new engineering and technical and design solutions, improvement of the technical legal and regulatory framework will contribute to reduction in energy consumption in newly designed and built homes by 30% and more as well as 1.5–2.0-fold in thermally renovated residential buildings. According to preliminary assessment, the total heat energy saving during operation of the buildings commissioned in 2015–2020 and also buildings thermally renovated over that period is estimated to be about 1.2–1.5 tln kWh of heat energy, or 180–220 ths t.f.e.

Early in the year of 2013, a task was set⁹ to implement additional measures to move to designing and construction of the buildings characterized by the heat energy consumption below 40 kWh/m² directly since April. It is planned to build, reconstruct and renovate 50% of projected volumes using innovative construction and technological solutions and engineering equipment since 2014 and make transition to construction of exclusively energy efficient residential buildings since 2015.

⁸ Approved by Resolution of the Council of Ministers of the Republic of Belarus No. 706 of 1 June 2009.

⁹ Resolution of the Council of Ministers of the Republic of Belarus No. 267 of 05.04.2013.

Transition to consumption of heat energy for space heating and domestic hot water supply in residential buildings below 40 kWh/m²/year in 2020 will result in reduction in greenhouse gas emissions by about 30 mln tons by 2030.

The Program for Development of the System of Technical Rate Setting, Standardization and Confirmation of Compliance in the Energy Saving Sphere for 2011 – 2015¹⁰ is efficiently implemented and seeks harmonization with the respective EU standards in a short term. To this end, a number of amendments was made in the construction sector regulatory framework¹¹. Given climatic conditions, normative requirements for heat energy consumption for heating are developed for each regional center and energy classification of buildings is introduced – A, A+ and B. The requirements for development of buildings' energy passports are enforced. Buildings are still classified only by one parameter – heat energy consumption for space heating and ventilation.

The professional community understands the need of developing a number of other technical legal and regulatory acts to improve the sector's regulatory framework, and primarily development of the Technical Regulation “Energy Performance of Buildings” should serve as a basis for this activity. This will provide an opportunity to bring closer building construction norms to the EU countries' best practice which allows fully realizing norms of designing, construction and operation of new buildings and contributing to introduction of the combined supply and exhaust ventilation systems with exhaust air heat recovery, waste water heat recovery systems, heat pump plants for recovery of the soil heat potential, solar collectors and solar PV-panels. Belarus possesses only little experience in the field of equipping buildings with exhaust air heat recovery systems (to date only 15 buildings equipped with this system have been built and put into operation), while the heat potential of waste water, soil and the sun is not used at all.

Priority actions are taken to facilitate repayment of the energy efficiency improvement measures. However, to date, pricing based on costs, full measurement and recovery of costs for electricity production and transportation and centralized district heating is not the established practice.

Currently, in general, households spend more and more money for other goods and services, while the share of their expenses for housing and utility services of the total expenses is continuously decreasing. The state fulfills its commitments in the social sphere by subsidizing households and through a cross-subsidies system. Electricity and heat energy tariffs for domestic consumers are not enough to recover the costs for the energy production and transportation/transmission, and, as a result, this has recently created a substantial gap between the payment for energy and its cost (Figure 9).

As a result, current losses incurred by the housing and public utilities enterprises increased to 1.7% of the GDP. Losses of these enterprises are recovered based on a complicated, nontransparent system of budget subsidies making up

¹⁰ Approved by the Chairman of the State Committee on Standardization of the Republic of Belarus V.V. Nazarenko 10 June 2013.

¹¹ Amendments are made in the Technical Code of Common Practice 45-2.04-196-2010 “Thermal Protection of Buildings. Heat and Power Performance. Definition Rules” by the Order of the Ministry of Architecture and Construction of the Republic of Belarus No. 94 of 29 March 2013; Resolution of the Council of Ministers of the Republic of Belarus No. 267 of 5 April 2013 and approved by the Concept of State Housing Policy of the Republic of Belarus up to 2016.

0.3% of the GDP and also by substantial cross-subsidies between industrial and domestic consumers accounting for 2% of the GDP.

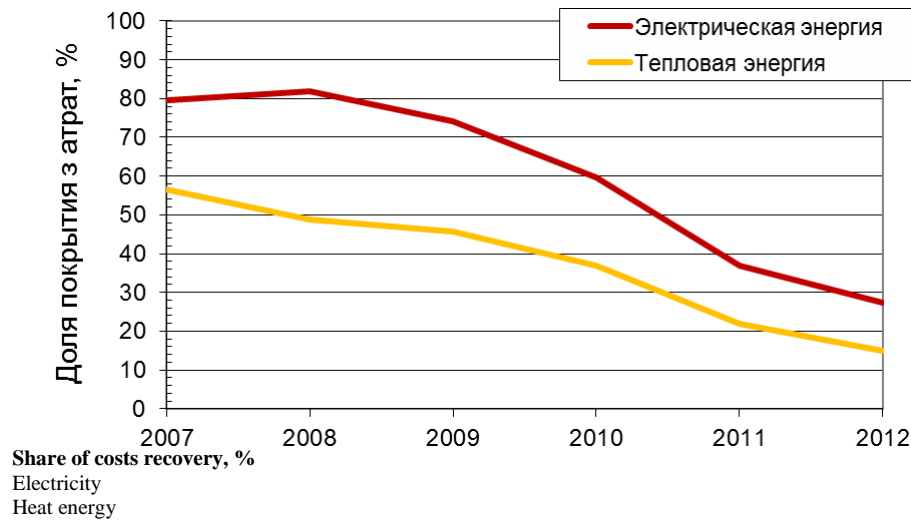


Fig. 9: Share of recovered costs for production of energy for the building sector

The Project Document pointed out that principal areas of the Belarus' Government actions regarding heat and electricity tariffs are as follows:

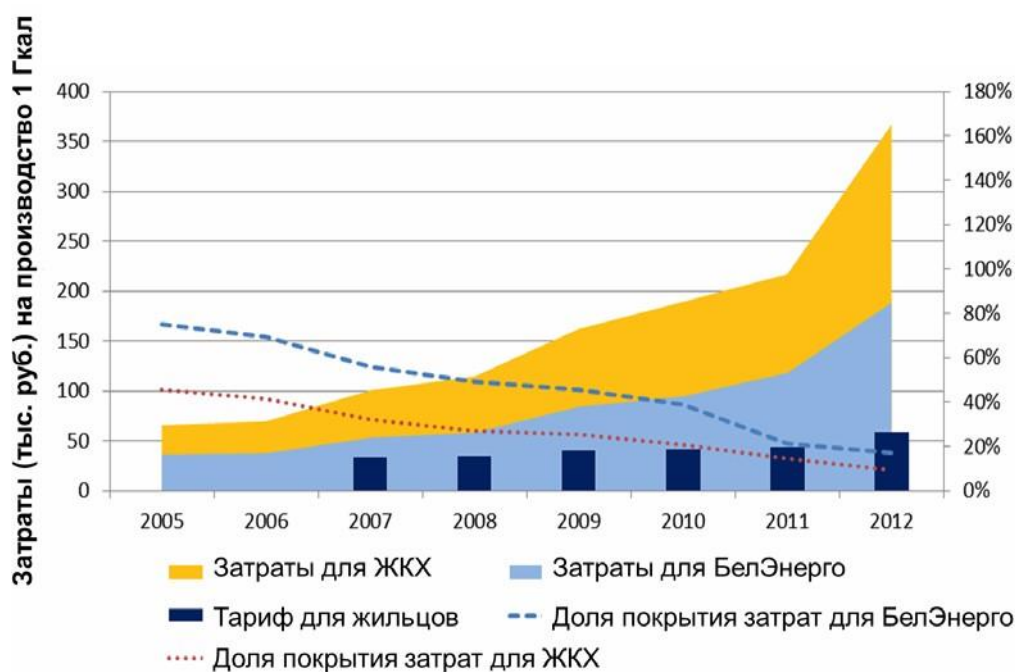
- increasing tariffs up to actual heat/electricity production costs;
- reducing cross-subsidies for specific consumer groups at the cost of others;
- tightening payment discipline and increasing collection of payments.

As regards the last area, the measures taken over the recent years helped increase the collection of payments (including arrears) actually up to 100%. The fact that household expenses for utility services have long been at the level below 10% of the household incomes contributed to achieving this goal. This indicator is significantly lower than in other countries of Europe and Central Asia.

Cross-subsidies distort price guideposts for domestic consumers and lead to inefficient energy consumption. This scheme imposes a hidden tax on the industrial sector, thereby increasing the existing tax burden resulting in substantially reduced competitiveness and profitability and limited accumulation of resources for investments in improving energy efficiency. These costs are included in the price for products which is ultimately paid by the domestic consumers.

The Strategy of Development of the Energy Potential of the Republic of Belarus¹² proposes that subsidies should be fully eliminated for as follows: natural domestic gas – by 2013, electricity – by 2013 and district heating – by 2014. However, cross-subsidies for the residential sector at the cost of other categories of consumers began reducing in 2013 with respect to only electricity consumers. As regards heat energy tariffs, the gap is still not only maintained, but also increases (Figure 10).

¹² Approved by Resolution of the Council of Ministers of the Republic of Belarus No. 1180 of 9 August 2010.



Costs ('000 BYN) for production of 1 Gcal
 Expenses for housing and utilities
 Tariff for domestic consumers
 Share of costs recovery for housing and utilities

Costs for BelEnergy
 Share of costs recovery for BelEnergy

Fig. 10: Costs for production of heat energy for the residential sector and share of cost recovery by domestic consumers

Currently, it is planned to increase the energy production costs recovery as shown below in the Table (in percent):

	2013	2014	2015
Electricity, %	47.9	72.7	100.0
Heat, %	19.0	23.6	30.0
Total energy, %	32.4	45.9	61.7

Today, the Belarusian experience in the sphere of energy efficient construction is in demand in the CIS countries. An energy efficient house in Belgorod, the Russian Federation, was designed and built with involvement of the Belarusian specialists. A pilot energy-efficient 10-story 180-apartment residential building with a total space over 13 ths m² was designed and built in Karaganda (Kazakhstan) jointly with the SE “Institute of Housing - NIPTIS named after S.S. Ataev” within the framework of the UNDP Project. In addition to the improved thermal insulation of the building envelope, the house is equipped with the forced supply and exhaust ventilation system with exhaust air heat recovery, automated heat consumption system, a horizontal pipe distribution system outfitted with heating devices equipped with automatic heat regulators, apartment-level heat meters and a unified building monitoring network. This experience and also outcomes of other international projects in the Republic of Belarus in the energy efficiency improvement sphere which were completed by 2013 or currently are under implementation should be fully used within the framework of this Project.

¹³ In addition to the projects mentioned in the Project Document, including UNDP/GEF Project (2007- 2011) “Removing the Barriers to Improving Energy Efficiency in the State Sector of Belarus”, the following latest projects need to be mentioned: EU Project (2010-2014) “Energy Saving Initiative in the Building Sector in Eastern European and Central Asian Countries (ESIB)”; UNDP/GEF Project (2013-2015) “Belarus: Supporting Green Urban Development in Small and Medium-Sized Cities of Belarus” (“Green Cities”); EU Project (2013-2016) “Support of the Republic of Belarus in the Area of Norms and Standards of Energy Efficiency of Consumer Goods and Industrial Products”; EU Project (2011-2013) “Support to Implementation of Comprehensive Energy Policy for the Republic of Belarus”.

4.2 Impact of Situation Changes in Respective Sectors on the Project Implementation

As it may be seen from the above review, the construction industry and housing and utility sector currently undergo cardinal changes and their activity is supervised by the Government¹⁴. It becomes more and more obvious that there is a need to eliminate non-productive energy consumption caused by losses in heating networks, use of low-quality materials, inadequate control over the quality of construction works and comprehensive compliance with construction norms, in particular, in the area of the quality monitoring and control and conformance to requirements, lack of rules for monitoring energy performance, specifically rules for energy audit of residential buildings, lack of the necessary skills of designers and builders and other shortcomings.

The changed situation makes the Project goals and objectives more relevant and timely. This relates primarily to the following Project goals:

- strengthening the legal and regulatory framework in the sphere of improving energy efficiency in the construction sector with the focus on development of fundamental provisions for the building energy certification system and Technical Regulation “Energy Performance of Buildings” harmonized with respective European Union Directives;
- developing methodical guidelines for conducting a mandatory energy audit in residential buildings;
- developing recommendations for typically used centralized district heating and domestic hot water supply systems with consideration for the impact produced on them by residential buildings with low energy consumption indicators;
- developing handbooks for design organizations and construction companies related to designing, construction and operation of energy efficient residential buildings, arranging and holding workshops and study tours;
- demonstrating best practices in the sphere of designing, construction, operation and monitoring of low-energy buildings at pilot projects;
- developing and publishing public awareness-raising materials with the focus on the household audience.

Furthermore, the current situation creates a more enabling environment for the Project in a number of areas. Specifically, standard structural solutions for the energy efficient envelopes, standard modular solutions of the supply and exhaust ventilation, standard design solutions for a system designed to automatically monitor the operation of the apartment-level and building-level heat energy regulators have been already developed for designing multi-storey residential standardized blocks of flats. A number of leading design organizations gained the necessary experience in developing energy saving measures and equipment.

¹⁴ At the end of 2012, the Presidential Administration and State Control Committee initiated a number of studies and meetings concerning the problem of unsatisfactory performance of the construction industry and housing and utility system. In June 2013, the Ministry of Architecture and Construction developed “Operational Measures Plan to Eliminate Shortcomings in the Sector, Improve Legal and Regulatory Acts and Also Organizational Measures to Prevent Negative Aspects in Performance of the Construction Industry”; Resolution of the Council of Ministers No.97 of 8 February 2013 approved the “Program for Development of the Housing and Public Utilities Sector up to 2015; Resolution of the Ministry of Housing and Public Utilities No.4 of 24 April 2013 approved the Report On Performance of the HPU Sector and Goals for 2013-2014.

The most progressive construction companies use sophisticated architectural and planning solutions and innovative materials and structures aimed to improve building energy performance. The latest Governmental resolutions and departmental acts create conditions for the accelerated harmonization of the Belarusian technical standards with energy efficient construction norms in the EU countries. Many companies concerned currently express their readiness to cooperate with the Project – some of them expect assistance in expert examination of technical options and enhancement of their capacity, while others offer their developments.

However, the current situation creates additional barriers in some areas preventing successful implementation of the Project. Main causes leading to the inefficient FER use in the residential sector described in detail in the Project Document (see also Section 2.1 above) are still in place and remain critical. Moreover, some of them, for example, like motivation of households to save heat energy becomes critical due to unreasonably low heat energy tariffs for domestic consumers. The analysis of factors of the inefficient FER use in the residential sector conducted at the Inception Phase helped identify a number of additional barriers:

- Negative role played by the outdated engineering practice of arranging heating and ventilation systems in multi-apartment residential buildings. The natural ventilation system and envelopes are mainly responsible for heat losses in residential buildings (Figure 11). After 2010, requirements for sealing and insulating the building envelope became more stringent, however, design solutions in air exchange system are still based on natural ventilation. This results in inefficient air exchange and accumulation of moisture on walls or heat loss through opened windows.
- Lack of domestic producers of the majority of necessary equipment components to improve energy efficiency of residential multi-apartment buildings.
- Lack of a network for provision of modern professional services to operate and maintain energy efficient residential buildings, as well as lack of the trained service personnel.
- Inadequate awareness-raising activities for tenants and lack of training in controlling state-of-the-art devices and instrumentation being integrated in the engineering systems of energy efficient buildings.

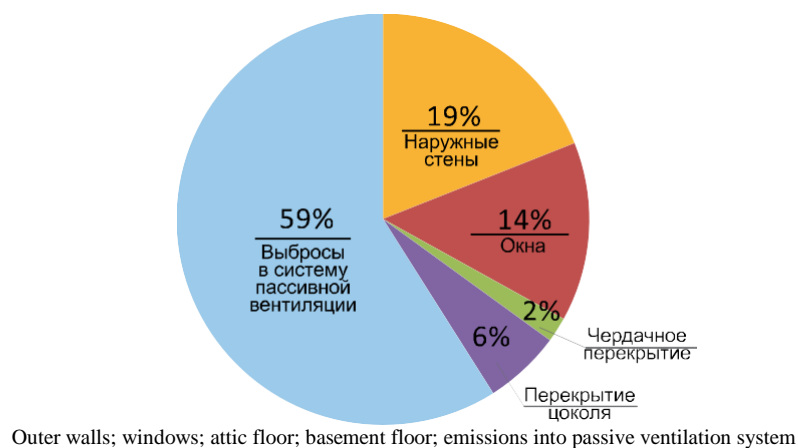


Fig. 11: Losses of heat supplied to a standardized residential building

4.3 Project Management Structure

It follows from the Project Document that the Project management structure should reflect the national execution model subject to the UNDP rules and procedures for the international technical assistance projects. Certain updates and adjustments were proposed to be included into this structure at the Inception Phase.

4.3.1 Managing and Executive Bodies

The Department on Energy Efficiency under the State Committee on Standardization of the Republic of Belarus is the National Executing Agency which is fully responsible to the Government of the Republic of Belarus and UNDP for spending funds and achieving the Project objectives subject to the approved Work Plan.

The Department appointed the National Project Director¹⁵ who is responsible for as follows: coordinating activities under the Project and its cooperation with other organizations and bodies of state administration, certifying Project expenditures subject to the approved budgets and work plans, assisting in achieving the Project outcomes, approving Terms of Reference for consultants and tender documentation for procurement of goods and services and informing the UNDP about the degree of the Project impact on a situation in the country.

The National Project Director heads the National Project Steering Committee (NSC) formed in March 2013. Representatives of the administration and managers of key divisions of main stakeholders are included as members into the NSC. Main NSC functions are as follows: exercising supervision over achievement of Project objectives and expected outcomes, their compliance with the country's development priorities, reviewing and conciliating the Project activity areas and annual Work Plans subject to the current situation in respective sectors, agreeing Project reports, coordination cooperation between the Project partners and beneficiaries, providing information and institutional support to the Project in developing, reviewing and adopting necessary norms and standards or making amendments in the existing legal and regulatory framework to achieve the Project objectives, removing barriers for implementation of the Project and subsequent replication of the Project outcomes and supporting measures to reduce Project risks and settle conflicts in the process of the Project implementation. Agreed NSC decisions serve as a basis for updating Project activities and targets of specific goals and also (in specific justified cases) the Project strategy, however, provided that key Project targets remain unchanged.

The UNDP in the person of the UNDP Resident Representative in the Republic of Belarus in coordination with the National Project Director provide overall Project management. The UNDP also exercises control over the Project budget execution, timely submits intermediate reports to the UNDP Regional Bureau and Global Environment Facility, monitors and arranges external evaluation of the Project implementation. The UNDP also provides an administrative support in the process of procuring materials, goods and services by the Project, preparing respective agreements and enforcing their execution. In addition, the UNDP promotes coordination and establishes cooperation subject to the Project topic with other organizations and initiatives being implemented in Belarus.

¹⁵ Currently, the Head of the Division of Scientific and Technical Policy and Foreign Economic Relations of the Department is appointed to this post.

The day-to-day management of the Project will be carried out by a Project Management Unit (PMU) functioning within the framework of the UNDP Rules and Procedures under the overall guidance of the UNDP, Department on Energy Efficiency and NSC. According to the Project Document, the Unit comprises the Project Manager, Administrative and Financial Assistant, Procurement Specialist and Communication Specialist. These officers were chosen based on a competitive process subject to the UNDP Rules and Procedures through consultations between the UNDP and Department on Energy Efficiency.

4.3.2 Group of Experts

The NSC updated the Project management structure at its first meetings in terms of exclusion of formal Working Groups on Project components initially provided in the structure proposed by the Project Document. The NSC recognized the need to establish a unified Group of Experts which would include international consultants on critical key areas and national experts (Figure 12). Members of the Group of Experts are selected on the basis of a competitive process subject to the UNDP Rules and Procedures. A preliminary composition of the Group of Experts is identified (*Annex 6, Item II6.4*).

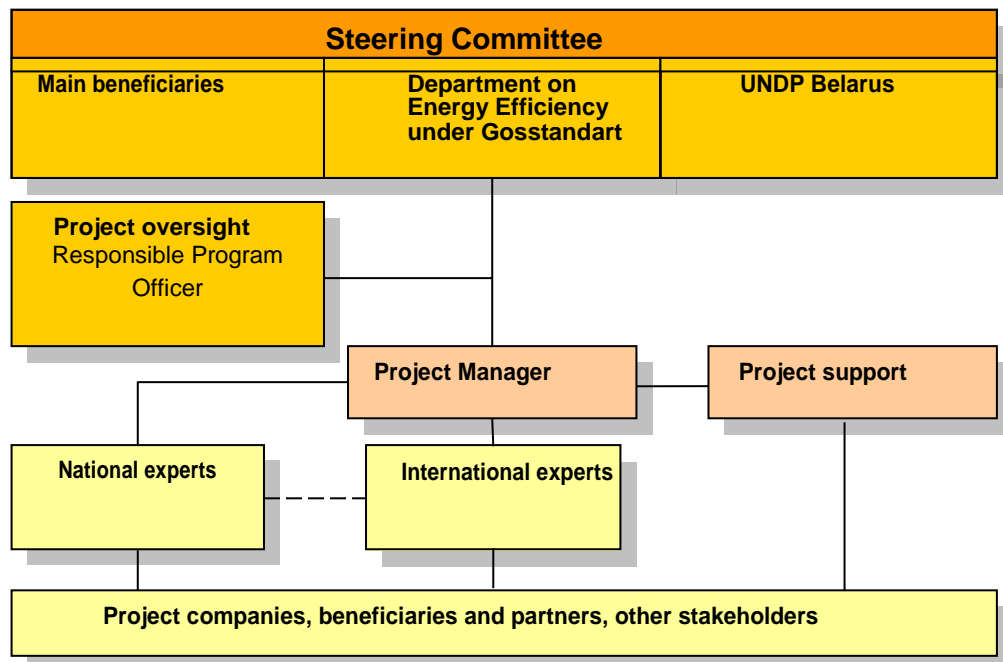


Fig. 12: Project Organization and Management Chart

As a rule, individual contracts with each expert are concluded for a period of one year and they may be extended. A decision was made that further contracts may be concluded for a lengthy period of time up to the Project completion deadline depending on the assessment of assignments executed by a particular expert during the first recruitment year. This approach will help create a more sustainable technical expert examination system, ensure consistency of ideas and assignments, promote better alignment and coordination of Project activities and their implementation in the future.

In their activity, the Group of Experts will focus on providing consultations to the Project partners and beneficiaries on technical, organizational, educational, regulatory and other issues related to the energy efficiency improvement in the process of designing, construction and operation of residential buildings. The Group also provides an expert support to organizations and companies which are recruited or involved for developing construction documentation of the Project demonstration sites, conducting building energy surveys and performing other services required to achieve the Project objectives, preparing Terms of Reference for execution of works and services by these organizations. Recommendations elaborated by the Group of Experts are accepted for consideration and decision-making by the Project management bodies and are

distributed among the stakeholders by the Project Management Unit.

The Project Management Unit strengthens the expertise, raises qualification and awareness of the Group of Experts by arranging internal experience exchange workshops, establishing contacts with experts of other projects and inviting them to participate in respective trainings, conferences and study tours. The Project's capacity building activities also cover respective research and design institutes to train specialists having the required knowledge and experience to further efficiently implement and promote Project results.

4.3.3 Organization of Pilot Building Construction Works

Implementation of pilot projects is aimed to demonstrate energy- and cost-efficient potential of energy-saving measures based on the case of designing, construction and monitoring of three residential buildings in two Belarusian cities. A basic approach to selection of the type of pilot buildings was substantiated by the need to widely cover mass-construction buildings being in the highest demand with the gained experience. The pilot projects and their architectural parameters were agreed upon with the Project partners at the stage of elaboration and approval of the Project Document and included the following assignments:

- 4-entrance, 9-storey panel building with 140 apartments and the total floor area of 10,000 m² in Minsk. The developer is the biggest large-panel construction company OJSC “MAPID” already having experience of construction of one energy efficient building;
- a block of two brick buildings (7 and 9-storey) with 200 apartments and the total floor area of 14,000 m² in Grodno. The developer is UPE “Institute Grodnograzhdanproekt” also already having experience of construction of one energy efficient building;
- 1-entrance, 24 storey skeleton building with 160 apartments and the total floor area of 12,000 m². The developer is the Ministry of Natural Resources and Environmental Protection.

Starting from the mid 2012, the Project partners provided updates in terms of architectural parameters of demonstration buildings in the process of Project registration. Currently (mid 2013) pilot project include the following types of large-scale construction buildings:

- 1-entrance 19-storey standard large-panel building with 140 apartments and the total floor area of about 10 ths m². The developer is OJSC “MAPID”;
- 3-entrance 9-storey building with brick cross walls and outer walls made of cellular concrete blocks with 120 apartments and the total floor area of about 10 ths m². The developer is UPE “Institute Grodnograzhdanproekt”;
- 1-entrance, 20-storey skeleton building with 160 apartments and the total floor area of 12,000 m². The developer is the Ministry of Natural Resources and Environmental Protection.

A scheme organizing the works on designing, construction and monitoring of these demonstration projects was not proposed in the Project Document. It only mentioned that the demonstration buildings would be constructed using capacities of local construction companies, while the Project was to organize joint work of its national and international experts to improve the architectural and working design by including in it design solutions aimed to improve energy efficiency of basic series buildings. Contractual obligations and division of functions and responsibilities in the process of designing, construction and monitoring of buildings were not stipulated under that scheme.

To organize works on this component, the Project Management Unit and Department on Energy Efficiency initiated a meeting with the Project partners (see Item 3.2.2 above). The below-

provided scheme of organizing the works on implementing and monitoring pilot projects was developed and conciliated with all stakeholders at that meeting and at the meetings which followed (see Items 3.2.4, 3.2.6 and 3.2.8 above):

a) Each Project partner (pilot building developer), at the cost of raised or own resources, contracts a General Designer (or involves in the work its own design division) which is responsible for developing a full package of construction documentation for construction of a basic design project and in accordance with norms and standards of designing and construction of residential buildings with consideration for the latest regulatory documents.

b) Using the Project funds, the UNDP contracts a design organization specializing among other things in designing engineering equipment of energy efficient buildings and performing duties of the General Designer's Subcontractor. This design organization elaborates respective and related Sections of the construction documentation on activities, structures, plants, instruments and equipment intended to improve energy efficiency of the Project up to the value of the aggregate specific estimated heat energy consumption for heating, domestic hot water supply and ventilation of the project implemented in the energy efficient design below 45 kWh/m²/year.

c) All parties consult each other in the process of elaboration of both separate related Sections and overall Project construction documentation. The Project national and international experts provide consultations for the parties and exercise author's supervision over interrelated Sections of the complete construction documentation for the project construction and also participate in defending the complete construction documentation, if required, in the process of the state expert appraisal.

d) The design organization prepares a nomenclature and specifications of activities, structures, plants, instruments and equipment which are to be used by the Project to procure respective machinery according to the UNDP Rules and Procedures which is then to be handed over to the developer.

e) The design organization also elaborates general guidelines and instructions on techniques of construction and installation works and also general guidelines on building operation and maintenance based on above implemented activities, built structures and installed plants, instruments and equipment.

f) The developer performs construction and installation works according to the above mentioned construction documentation, guidelines and instructions.

g) Up to the time of signing the Site Acceptance Certificate, the design organization exercises construction supervision to ensure quality of construction works and works on installation, adjustment and preoperational testing of the Project-procured structures, plants, instruments and equipment.

h) Upon commissioning the Project, the parties undertake to conclude a separate agreement on cooperation to conduct necessary monitoring studies of the Project heat and energy performance and economic efficiency of costs for the Project construction and operation.

At its second meeting (see Item 3.2.8 above), the NSC made a decision regarding the selection of a leading pilot project design organization and a model of recruiting is based on the UNDP Rules and Procedures and national legislation. To avoid a lengthy tender procedure, and given the fact that the Project was started a year later than scheduled by the Project Document, the national execution procedure was selected by concluding an agreement on advancement from the Project resources. It was proposed to choose a design organization SE "Institute of Housing - NIPTIS named after S.S. Ataev".

The NIPTIS is a parent organization responsible for elaboration and support of the National Scientific and Technical Program "Construction Materials and Technologies", a basic institution conducting research and development of innovative structural and technological systems of

buildings and structures, developing energy efficient engineering systems and elaborating and supporting the State Sectoral Program “Energy Saving”. NIPTIS has a sufficient experience in designing energy efficient buildings. This organization has a relevant experience of implementing a similar UNDP/GEF project on construction of the energy efficient buildings in Kazakhstan and proved itself to be the most competent organization in Belarus in the field of developing innovative solutions for construction of energy efficient residential buildings based on advanced technologies.

The Project analyzed NIPTIS advantages compared to foreign companies having a similar line of business (Table 2) that was also taken into account by the NSC to take the above decision.

Table 2. Comparative matrix for making a decision in choosing a design organization

Activity parameter	NIPTIS	Foreign company
Experience of designing residential social multi-storey mass construction buildings	6 projects implemented, including 4 buildings in Belarus, 2 buildings in Kazakhstan and Russia, designs of 2 more buildings prepared	Experience may be more extensive, while designing of residential social multi-storey mass construction buildings already is not in common practice
Advanced methods and tools for modeling and designing	Applied	Difficulties may be experienced in terms of application of design norms and accounting local requirements to construction documentation
Introduction of state-of-the-art technical and structural solutions	Solutions are introduced based on the best technologies available both in Belarus and abroad. Knowing and taking into account the nomenclature of materials, structural elements, instruments and equipment produced in Belarus	Lack of experience of designing buildings based on nomenclature of materials, structural elements, instruments and equipment produced in Belarus.
Compliance with Belarusian standards	Complied	Difficulties may be experienced
Cooperation with the general designer	Day-to-day and barrier-free supervision over the development of related sections of the construction documentation. Holding frequent working meetings/consultations and making approvals is not a problem.	Language barriers. Difficulties may be experienced in case of holding frequent working meetings/consultations and making approvals.

Activity parameter	NIPTIS	Foreign company
Cooperation with developers and construction companies	Day-to-day and barrier-free supervision over installation and start-up and commissioning.	Language barriers. Difficulties may be experienced in case of frequent site visits.
Gaining additional national experience required for Belarus	In addition to the previous national experience of implementation similar projects, new experience will be gained allowing Belarus to have a more qualified design organization in the construction sector.	Additional experience gained by a foreign company in the process of pilot project construction under the Project will be of no benefit to Belarus.
Replication of experience and further improvement of skills	Experience may be transferred to other organizations by arranging free qualification upgrading courses and in the interactive mode for designers/developers in the process of designing and constructing other buildings.	Experience replication is doubtful. Additional expenses will be required for the organizations concerned in Belarus, including inquiries from designers/developers in the process of designing and constructing other buildings.
Contract value	Will be acceptable	Will be high

4.4 Analysis of Earlier Identified Risks and Their Evolution

Main Project risks outlined in the Project Document and their evolution according to results of the analysis conducted within the Inception Phase are provided below.

- The energy pricing policy does not support building energy efficiency investments. The risk remains high, specifically given the continued trends toward reduction in the heat energy cost coverage share. The risk is likely to reduce starting from 2015, provided that the latest Government resolutions are enforced.
- No or slow adoption of the proposed energy efficient construction norms and minimum energy performance standards by the Government. The risk reduces due to making a number of decisions by the Government on designing energy-efficient residential buildings starting from 2013 and integration of the respective developed Technical Legal and Regulatory Acts (TLRA) into Standardization Plans for 2013-2015 by the Gosstandart. On the other hand, in Belarus, like elsewhere, standards, as a rule, are adopted as continuation of the achievable local practice and based on its economic viability. The energy saving-based construction practice has not been yet widely spread and its economy is still in question. Trends of this risk are likely dependent on the fact how soon the Project will demonstrate on its pilot sites and in its analytical reports that the best practice is achievable and is within the limits of knowledge and experience of local design and construction organizations.
- Lack of inter-institutional ownership and inadequate co-operation in implementing the Project activities. The risk reduces and this fact may be proved by increased interest of the Ministry of Architecture and Construction, Department on Energy Efficiency and other specific departments concerned in the Project outcomes and by their active involvement in the Project execution. The inter-institutional cooperation is strengthening due to latest Government-adopted documents requiring greater responsibility of respective institutions for the efficient use of resources in the construction and housing and utilities sectors. The above cooperation may be also strengthened by involvement of key organizations concerned in

the Project NSC activities as an additional platform for discussing sectorial problems and also by arranging training and awareness-raising activities under the Project. However, the attitude of the Ministry of Housing and Utilities and Ministry of Energy toward the Project is still not clear. It is obvious that a large-scale construction of low-energy residential buildings and use of renewable energy sources reduce the volume and profitability of the traditional services provided (Ministry of Housing and Utilities) and leads to increased energy production costs (Ministry of Energy). This may be exemplified by the fact that the above-mentioned institutions have not offered their candidates to be included into the NSC.

- The adopted construction norms and minimum energy performance standards may not be effectively enforced despite the support provided by the Project. The risk is uncontrollable since it is beyond the Project competence and is likely to remain high due to inadequacy of the construction sector infrastructure as it lacks domestic producers of the majority of necessary equipment components designed to improve energy efficiency of residential multi-apartment buildings and also due to outdated pay standards for the labor of highly skilled employees of design and construction companies (the workload in the process of introducing new design options is likely to increase, while the pay will remain unchanged).
- Lack of interest of the managers of the construction companies and other building professionals such as architects, building engineers, construction workers and their supervisors to commit time for and to apply in practice the training provided by the Project. The risk still persists with respect to construction companies which lack interest as noted above in introducing new design options specifically in the process of building mass-construction homes. The risk is likely to reduce with respect to architects and designers who are continuously interested in upgrading their qualification, specifically in connection with a number of Government decisions on designing energy efficient residential buildings starting from 2013.
- Inadequate availability of certified, cost-effective construction materials and building appliances in the domestic market to meet the building energy efficiency targets. As it has been pointed out above, the Project cannot control this risk. On the other hand, due to the Government's continued efforts aimed to increase energy performance of buildings, a relatively broad assortment of energy saving construction materials (such as cellular concrete) and structures (energy-saving windows) are already available in the domestic market. Lack of new highly efficient construction materials and structures is still likely not considered as the Project bottleneck, since the domestic market is capable of ensuring the energy efficiency level required by effective norms. However, in moving to EU norms, the majority of domestic manufacturers, suppliers and dealers and their qualification and potential are not likely to meet the level required to meet the future market demand in case of a large-scale application of such equipment as heat pumps, solar collectors and solar PV panels.
- Lack of adequate and reliable market data to facilitate the monitoring of Project outcomes and planning of further measures. The risk is controlled and reduces as the respective activities are being implemented under the Project.
- Inadequate and/or non-capacitated human resources to successfully implement the Project and support the mainstreaming of its results. The risk is controlled and reduces as the most qualified professionals employed in the process of a transparent and stringent competitive recruitment procedure are recruited to the staff and to the pool of experts.
- Lack or reduction in co-financing. This risk is controlled by the National Executing Agency (Department on Energy Efficiency) and NSC. To date, none of the Project

partners went back on their commitments of co-financing. However, this risk does exist and it concerns primarily the commitments of the Ministry of Natural Resources and Environmental Protection. Despite its commitments, to date, this Project partner has not taken a final decision regarding its plans for construction of a pilot building. To minimize this risk, the Project management bodies review alternative and backup plans (see *Annexes 4, 6 and 8*).

The Project baseline changes due to the Government's plans to introduce more stringent specific heat consumption norms in newly designed residential buildings. If the definition "effective" meant to be understood as norms and standards introduced after approval of the Project Document, then the risk arises that stated indicators would not be achieved. Really, the current target standard¹⁶ introduced in 2013 for new construction after 2015 in terms of specific heat consumption for space heating is 40 kWh/m²/year which is more stringent than the standard being effective at the time of approval of the Project Document - 60 kWh/m²/year. In developing its pilot buildings, the Project seeks to achieve the specific energy consumption indicator of 15 kWh/m²/year for space heating. Given the initial baseline, that should have led to reduction in greenhouse gas emissions by not less than 220 thousand tons CO₂eqv due to the Project implementation. Given a new baseline, this reduction may be about 160 thousand tons CO₂eqv.

A specific risk arises due to the fact that the Project implementation schedule is to be reduced by one year because of the late approval of the Project Document and its registration in the national system of international technical assistance project registration. As provided for in the Project Document, the Project should have been started on January 1st 2012, however, the Project was registered only on August 10th 2012. Therefore, the Project was actually launched in mid-December 2012 because of the late registration. This circumstance requires substantial changes in planning Project activities for 2013 to adapt them to a new Project implementation schedule reduced by one year.

4.4 Updated Project Goals and Their Priorities

Decisions on further improvement of energy efficiency in the residential sector of the Republic of Belarus should be based on the innovative building design principles, such as optimal structural-technological and space-planning solutions accounting integrated building energy performance, a combination of heating and ventilation functions with forced ventilation and exhaust air heat recovery, waste water heat recovery, solar water heating, use of soil heat, automatic regulation of heat and hot water consumption, quality control of materials and building envelope construction and the use of other acceptable technologies and approaches to improve energy efficiency. Development and introduction of these approaches should be prioritized by the Project. Therefore, implementation of pilot projects aimed to demonstrate the best practices in the field of designing, construction, operation and monitoring of low-energy buildings should become the most important Project component.

¹⁶ State Housing Policy of the Republic of Belarus up to 2015 (approved by Resolution of the Council of Ministers of the Republic of Belarus No. 267 of 05.04.2013).

It is not possible to implement the above activities without development of respective LRA and TLRA. Belarus continuously seeks to harmonize TLRA in the construction sphere with the European designing norms, it has actually finalized the work to put into effect European designing norms (EUROCODE). However, this work should be intensified based on the Directive 2010/31/EU “On the Energy Performance of Buildings”. The Project considers it necessary to elaborate a concept and draft a Technical Regulation “Energy Performance of Buildings”. These documents and other related TLRA will serve as a road map for further development of norms and standards aimed to improve energy performance of buildings for a long-term period.

In that context, given the fact that the Gosstandart, Ministry of Architecture and Construction и RUE “Stroitekhnorm” plan to intensify activities in this direction, the Project should more closely cooperate with the above agencies and exchange respective experience and best practices. This primarily relates to preparation of the “Comprehensive Programme for the Design, Construction and Reconstruction of Energy-Efficient Homes in the Republic of Belarus for 2013-2015 and until 2020”, updating the Program for Development of the System of Technical Rate Setting, Standardization and Confirmation of Compliance in the Energy Saving Sphere for 2011 – 2015 and development of the above-mentioned Technical Regulation. The Project’s priority to further improve the RB regulatory framework in the sphere of the energy efficient residential buildings should also comprise the following activities:

- preparation of a package of TLRA (national-level annexes) interrelated with the above Technical Regulation and, if possible, identical to EN standards, updating effective Legal and Regulatory Acts (LRA) and TLRA in line with the regulation objectives and goals, including development of guidelines for monitoring and calculation of integrated building energy performance indicators;
- elaboration of proposals on introducing the European classification of buildings and structures in terms of energy efficiency with a stage-wise strengthening of the requirements for classes of newly built buildings and buildings under thermal renovation, reconstruction and major renovation;
- development of guidelines and regulations for regularly conducting mandatory energy surveys (energy audit) of buildings under operation for issuing their passports, classifying them and confirming assigned classes;
- elaboration of proposals and drafting regulatory acts on a stage-wise introduction of voluntary and later mandatory certification of buildings by energy efficiency classes;
- development of methods for determining a life cycle of a building and its elements (durability, service life) based on the current practice and economic justification, as well as energy intensity of construction materials used;
- preparation of TLRAs aimed to help design and introduce engineering solutions for heating, ventilation, air conditioning and hot water supply systems based on the use of secondary energy resources and renewable energy sources.

The Project should also prioritize as follows: developing recommendations for HPU standard centralized heat and hot water supply systems accounting the impact of low energy buildings on them; preparing handbooks on designing, construction and operation of energy efficient buildings for design organizations and construction companies; organizing training workshops and study tours and also preparing and publishing public awareness-raising materials with the focus on the household audience.

5 Updated Project Work Plan

5.1 Methodology and Approaches

The Table of targets and expected outcomes by the Project components (*Annex 1*) and Project Logframe Matrix (*Annex 2*) specified in the Project Document served as a basis for Project approaches to development of the adapted Project Work Plan for the immediate future. These basic items of an original document were analyzed to assess their relevance on the following four main criteria based on the Inception Phase results:

- degree of accounting Project priorities identified within the Inception Phase framework;
- degree of reflection of earlier identified and new risks and barriers for achieving Project objectives and taking measures to minimize them;
- degree of probability of achieving Project targets set by the Project Document as a whole and by its specific components;
- degree of conformance of the Project budget resources to its priorities, including a summary budget and distribution of its funds Project component-wise and year-wise.

5.2 Updating the Project Logframe Matrix

In general, both the Table of Targets and Project Logframe Matrix remain relevant and conform to the Project priorities. These basic items of the original document also fully reflect main areas and Project goals which contribute to achieving its objectives with minimization of identified risks and barriers.

For the time being, a conclusion may be made that the Project is likely to achieve its main objectives, provided that an overall set of targets is implemented. This applies to a lesser extent to the first objective – designing 80 new energy-saving buildings by the end of the Project. Results of the above analysis show that inadequate motivation of households to invest in heat energy saving in the environment of the distorted tariff policy and cross-subsidies hamper the construction boom with the erection of these buildings. There exists higher probability to achieve the second Project main objective. The estimated indicator of annual energy consumption in three pilot buildings will be lower by 60-70 kWh/m² than in the baseline case. If this value is confirmed as a result of construction of these buildings, these buildings alone will contribute to reduction of greenhouse gas emissions by about 20 thousand tons of CO₂eqv.

Probability of achieving objectives of components Nos 1, 2 and 4 is high. Integrating developments of the Technical Regulation “Energy Performance of Buildings” into the Project activities and making necessary amendments in specific effective standards will create conditions for developing the entire package of LRA and TLRA contributing to moving to designing, construction and operation of low-energy buildings. The Project activities directly involve three local companies into developing design arrangements for energy efficient buildings, and these new approaches are to be replicated in about 120 companies. The Project will analyze curricula of respective universities, provide recommendations for updating them and propose texts of manuals. The Project will develop an Action Plan on Capacity Building for 2013-2016 and will adhere to it and also will develop respective manuals.

The probability of achieving No. 3 component objective is medium. There exists uncertainty that by the end of the Project (December 2016) all three pilot buildings will be constructed and properly surveyed. It should be taken into account that the Project implementation was actually started one year later than scheduled because of the delayed registration.

Results of the analysis of the budget resources and their distribution by areas of activity and

years prove sufficiently sound and efficient Project budgeting in the original Project Document. However, when planning annual budgets, it is necessary to take into account that the Project implementation period is reduced from five to four years.

5.3 Annual Detailed Work Plan for 2013

The Project Annual Detailed Work Plan is a detailed Project Logframe Matrix including description of activities, expected outcomes and targets and also relevant costs to achieve them. This Plan is developed with consideration for results of the Inception Phase for 2013 approved by the NSC, adopted by the UNDP and National Project Director and provided in *Annex II.8.2*.

When planning activities for 2013, the main aim was to take into account the need to intensify and speed all works to fill the gap in the schedule as far as possible, since the Project implementation period was reduced by one year. Given such an approach, the Project has to implement at least 70% of targets planned to be implemented in the overall component No.1, 40% of targets – in component No.2, not less than 20% of targets - in component No.3 and over 40% of targets - in component No.4.

As a result, the planned budget for 2013 amounted to US\$600 ths, i.e., 12.25% of the Project overall budget. It had to be done to partially spend US\$266 ths and US\$487 ths initially planned in the Project Document for 2012 and 2013, respectively.

ANNEXES

List of Annexes

Annex 1	Expected Outcomes and Main Project Activities
Annex 2	Project Logframe Matrix
Annex 3	Project Partners and Beneficiaries
Annex 4	Meeting of Stakeholders/Organizations
Annex 5	Composition of National Steering Committee
Annex 6	Minutes of the First Meeting of the National Steering Committee
Annex 7	Inception Workshop Documents
Annex 8	Minutes of the Second Meeting of the National Steering Committee
Annex 9	Adopted Project Annual Detailed Work Plan for 2013

Annex 1: Expected Outcomes and Main Activities

<p>Outcome 1: Strengthened legal and regulatory framework and also mechanisms to enforce the legislation for improving the energy efficiency of the building sector. Measures within the framework of this outcome will be focused on new residential buildings.</p>	<p>Outcome 2: Enhanced expert capacity of the Belarusian specialists to implement and enforce the new energy efficiency building standards and construction norms.</p>	<p>Outcome 3: Implemented demonstration projects of the energy efficient buildings. The aim of pilot projects is to demonstrate energy and cost-saving potential of new energy efficiency measures in three new residential buildings in two Belarusian cities.</p>	<p>Outcome 4: Public awareness raised, monitoring performed and experience disseminated.</p>
<p>Output 1.1: Adopted and endorsed methodology for buildings' energy performance monitoring in line with EN norms and other applicable international standards.</p>	<p>Output 2.1: Developed and published different target groups' technical guides, handbooks and other related training materials on energy efficiency design and construction of new buildings; these materials used for introduction of new construction norms, including dissemination of this information through the Internet-based energy platform and the Project's own Internet site.</p>	<p>Output 3.1: Finalized design of the demo buildings by applying integrated building design principles and taking into account new technologies and approaches for meeting the HVAC needs of those buildings in a most energy and cost-efficient way.</p>	<p>Output 4.1: Developed public awareness-raising materials and completed nation-wide awareness and information campaign advocating the benefits of energy saving measures, including economic, social, health, environmental and aesthetical aspects.</p>

<p>Output 1.2: At least 50 completed energy audits providing information on factual energy consumption and energy balance of different type of existing residential buildings of different age and using different construction techniques.</p>	<p>Output 2.2: New courses on integrated building design and building energy efficiency developed and included into the curricula of universities educating architects and building engineers. At least 200 students have passed new courses by the end of the Project.</p>	<p>Output 3.2: Finalized construction of the demo buildings by ensuring that the construction and equipment installation are made in accordance with the adopted standards and guidelines.</p>	<p>Output 4.2: Agreed methodology and sustainable institutional arrangements for annual market monitoring keeping track on buildings constructed each year, as well as the sale of key building materials, accessories and appliances together with their energy performance characteristics.</p>
<p>Output 1.3: A completed review and cost-efficiency analysis of different technical options to improve buildings' energy efficiency and the use of renewable energy sources, including an analysis of the cost-efficiency of different heat supply and distribution methods to serve low or close to zero-energy buildings.</p>	<p>Output 2.3: At least 50 experts from different state and municipal administrative bodies dealing with construction policies, norms and standards are trained on the most recent international developments, practices and international experience learnt on building energy efficiency and environmentally sustainable construction.</p>	<p>Output 3.3: A monitoring report on the progress of construction of three demonstration buildings documenting costs, experiences gained and lessons learnt from procuring, installing and testing the new energy efficient materials, construction techniques and appliances.</p>	<p>Output 4.3: Fully mandated and capacitated state agency with a responsibility to monitor the energy savings and CO2 emission reductions in residential and other buildings, together with the agreed procedures for compiling the respective data.</p>

<p>Output 1.4: A completed analysis of the possibility of using different heat supply systems typically used in Belarus, including centralized heating systems, in particular, radiator systems connected to district heating and water heating systems for designing and construction of new efficient buildings. Respective recommendations for future development prepared.</p>	<p>Output 2.4: At least 50 architects and construction engineers from the leading architectural-construction institutes are to be trained on the following issues: 1) most recent international developments in the area of energy efficient buildings; technical and managerial aspects; 2) integrated, energy efficient building design principles and techniques; 3) practical aspects of designing buildings when moving from prescriptive to functional construction norms in the energy saving sphere; 4) possible technical solutions and principles of cost-effective design for optimizing buildings' energy performance; and 5) presentation of the available, state-of-the-art software to support integrated, energy efficient building design and training for its use.</p>	<p>Output 3.4: A monitoring report on the energy performance of the demonstration buildings documenting the actual energy and financial savings and also GHG emission reduction.</p>	<p>Output 4.4: Approved national procedures for extending energy audit practice in residential and other buildings and forming mechanisms for using the energy audit results for elaboration of the energy efficiency strategies for the building sector at the national level.</p>
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<p>Output 1.5: A finalized draft of new national functional energy performance-based norms and standards for newly constructed buildings (in respective cases), buildings subjected to a major renovation for primary use in residential buildings. This document agreed with stakeholders.</p>	<p>Output 2.5: At least 50 construction inspectors from Regional and District centers trained on methodologies for assessing buildings' energy performance and the correct installation of the materials and equipment used.</p>	<p>Output 3.5: At least 30 private showings of the new buildings organized for architects, designers and other responsible decision-makers, including half-day training sessions with an objective to promote the solutions adopted for the demonstration projects and buildings.</p>	<p>Output 4.5: Energy-efficiency aspects integrated into the regional and local plans for territorial development being developed by the Institute of Urban and Regional Planning (IURP).</p>
<p>Output 1.6: Elaborated and adopted by the Government of Belarus practical procedures for the establishment of a mandatory system of EE certification of buildings, including issuing of EE passports and also established a system of monitoring and compliance checking with set norms.</p>	<p>Output 2.6: At least 50 mid-level supervisors of the construction companies trained on the correct installation of the materials and equipment; provided other advice for private construction companies on how to integrate elements of energy-efficient design throughout the project cycle from the design of buildings to their construction and operation.</p>		<p>Output 4.6: An International conference on energy efficiency in residential sector held in Belarus, including a field visit to the pilot demonstration sites; coordination with the results of other UNDP/GEF project "Removing the Barriers to Improving Energy Efficiency in the State Sector of Belarus".</p>

<p>Output 1.7: Further developed and adopted quality standards and a system of EE certification for the construction materials, equipment and accessories used in the construction sector.</p>	<p>Output 2.7: A two-week training seminar for professional designers, representatives of the state expertise and building supervision in order to familiarize the target group with the experiences of energy-efficient building design, organization of the state supervision in EU countries (including the role of municipal authorities) and visiting the facilities (25 people).</p>		<p>Output 4.7: Regularly updated the Project website with posting on it the Project information being of interest for all stakeholders, including the general public (with a link to an Expanded Energy Platform).</p>
	<p>Output 2.8: Other trainings, meetings, exchange of experience and knowledge based on co-operation with other international initiatives promoting energy efficient and environmentally sustainable building construction.</p>		<p>Output 4.8: Annual market monitoring reports for new building construction.</p>
			<p>Output 4.9: Final Project Report consolidating the results and lessons learnt from the implementation of the proposed Project components and future recommendations.</p>

Annex 2: Project Logframe Matrix

<p>This Project will contribute to achieving the following Country Programme Outcomes as defined in the Country Program Document and Country Program Action Plan: 3.1: Country’s capacity to mitigate and adapt to the climate change strengthened</p>					
<p>Country Programme Outcome Indicators: GHG emission (tons of CO2 equivalent) into the atmosphere.</p>					
<p>Thematic Area: <u>1. Mainstreaming environment and energy</u> Other Program Components: 2. Catalyzing environmental finance. 3. Promote climate change adaptation. 4. Expanding access to environmental and energy services for the poor.</p>					
<p>Applicable GEF Program and Strategic Objective: GEF-4 Cycle. Strategic Programme #1 “Promoting Energy-Efficient Buildings and Appliances”.</p>					
	Indicator	Baseline	Targets End of Project	Source of verification	Risks and Assumptions
<p>Project Objective To reduce the energy consumption (imported fuel) and related GHG emissions with the focus on new residential buildings.</p>	<p>Number of buildings designed and constructed in accordance with the new energy efficiency standards.</p>	<p>0</p>	<p>At least 10% (in total about 80 buildings) of new residential multi-storey buildings, for which the design is started during the last year of the Project implementation are integrating EE measures reducing their energy demand for space heating and hot water below 60 kWh/m².</p>	<p>Project monitoring reports and final evaluation. As applicable, post-project market monitoring and evaluations.</p>	<p>Suggested EE measures are included into the design documentation of new buildings.</p>

	Amount of reduced CO2 emissions compared to the projected baseline	0	“Lifetime” reduction of 220,000 tons of CO2eqv resulting from the energy saving in buildings, for which the construction has started or which have adopted into their design new energy efficiency elements that reduce the energy consumption for heating and hot water in the residential buildings below the current thermal standards in force.	Project monitoring reports and final evaluation.	See above
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<p>Outcome 1 Strengthened legal and regulatory framework</p> <p>and mechanisms to enforce the legislation for improving the energy efficiency of the building sector.</p>	<p>Status of the national laws and other regulatory documents controlling the energy consumption of the newly constructed buildings.</p>	<p>Perspective prescriptive thermal standards adopted in 2010 defining minimum mandatory U-values for materials of the building envelope, ensuring the average annual heat demand of 60 kWh/m² for space heating of typical multi-apartment buildings and 120-130 kWh/m² for heating and hot water supply.</p>	<p>Revised minimum energy performance standards adopted for new construction and reaching a status of a law by the end of the Project with a target of reducing the energy consumption for space heating and hot water below 60 kWh/m².</p> <p>An energy performance certification and labeling scheme for both new and existing buildings adopted and under implementation by the end of the Project.</p>	<p>Official government publications</p>	<p>Continuing commitment of the Government of Belarus to proceed to the improvement of the energy efficiency legislation.</p>
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<p>Outcome 2 Enhanced expert capacity of the Belarusian specialists to implement new energy efficiency standards and construction norms.</p>	<p>Demonstrated capacity of the Belarusian building sector specialists to integrate new EE approaches and measures into the design of the buildings and to implement them in the construction sector.</p>	<p>Non-integrated design of the buildings just complying with the current prescriptive thermal standards in force.</p> <p>Lack of capacity of the public authorities to effectively supervise and enforce the implementation of the new requirements for energy performance of buildings in general.</p>	<p>Integrated, energy efficient building design approach together with buildings' overall energy performance-based design principles adopted into the work of local design institutes, as well as into the curricula of leading higher educational institutions in Belarus educating architects and building construction and HVAC engineers.</p> <p>By the end of the Project, at least 50 experts from each key professional group (see outputs 2.2-2.8) and at least 200 university students have taken courses on energy efficient building design and construction and successfully passed tests. Key public authorities responsible for supervision and enforcement of the planned new norms and regulations trained.</p>	<p>The curricula of the Belarusian educational institutes training architects and building construction and HVAC engineers.</p> <p>Design documents of new buildings submitted for review of the state authorities.</p> <p>Surveys and interviews conducted during Project implementation.</p>	<p>Recognized effectiveness of new approaches by the targeted professional groups.</p>
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<p>Outcome 3: Implemented demonstration projects of energy efficient buildings.</p>	<p>Status of the demonstration projects.</p>	<p>N/A</p>	<p>Each of the 3 demonstration buildings constructed on schedule. For each of the 3 constructed demonstration buildings annual total external energy demand for space heating and hot water equaled or was less than 60 kWh/m². Energy consumption for each of the 3 buildings and also other performance indicators (living comfort etc.) monitored for at least one full year. The baseline cost for designing and construction of the 3 demonstration buildings is covered in full by the Project's co-financing resources of developers and additional GEF financing for designing and construction of demo buildings was not in excess of 15% of the total construction costs of each demo building.</p>	<p>Monitoring reports of the demonstration projects.</p>	<p>All the required agreements concluded and the design documentation completed in schedule during the first 18 months from the start of the Project implementation. The construction of demo buildings completed by the end of the third year of the Project implementation.</p>
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<p>Outcome 4: Awareness raised, monitoring exercised and experience replicated.</p>	<p>Status of the planned public outreach activities.</p> <p>Readiness of the entity to follow up and continue the activities initiated by the Project.</p> <p>Number of visits and downloads from the Project website.</p>	<p>N/A</p>	<p>Planned public outreach activities successfully completed.</p> <p>An entity to be responsible for replication of the Project results has been designated and provided with adequate resources to perform its work.</p> <p>At least 100 hits and 10 downloaded documents per month from the Project website.</p>	<p>Final Project Report.</p> <p>Monitoring report on the number of hits and downloads from the Project website</p>	<p>Project implementation successfully completed</p>
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Annex 3: Project Partners and Beneficiaries

Organization name	Contact person	Main duties and responsibilities
UN Development Program	Igor Chulba UNDP Project Coordinator in the Republic of Belarus	Coordination of Project implementation on behalf of the UNDP and donor – Global Environment Facility
Department on Energy Efficiency under Gosstandart of the Republic of Belarus	Andrei Minenkov Head of the Division of Scientific and Technical Policy and Foreign Economic Relations National Project Director	Providing overall management of the Project as the National Executing Agency subject to the Project Document, UNDP Rules and Procedures.
Ministry of Architecture and Construction of the Republic of Belarus	Galina Pavlova Head, Main Department of Architectural, Scientific and Innovation Policy	Providing assistance in implementing recommendations and introducing Project results as a key beneficiary.
State Enterprise “Institute of Housing – NIPTIS named after S.S. Ataev”	Sergei Terekhov Head, Research and Development and Design Division of Energy Efficient Technologies in Construction Sector	On assignment for the Project, executing development and designing of all activities, plants, equipment and instruments intended to improve energy efficiency of three pilot multi-storey residential buildings under construction in Grodno, Minsk and Mogilev. Supervising the development of other Sections of the construction documentation. Supervising installation and start-up/commissioning of the equipment and also subsequent monitoring of performance indicators.
Unitary Designing Enterprise “Institute Grodnograzhdanproekt”	Ryshard Katsynel Chief Engineer	Developing the construction documentation for construction of the pilot 10-storey energy efficient residential building in Grodno. Constructing and commissioning the building.
Open Joint Stock Company “MAPID”	Vyacheslav Turov First Deputy Director General	Developing the construction documentation for construction of the pilot 19-storey energy efficient residential building in Minsk. Constructing and commissioning the building.
Republican Unitary Enterprise “Scientific and Production Center on Geology”	Sergei Mironov Deputy Director	Developing the construction documentation for construction of the pilot 20-storey energy efficient residential building in Minsk. Constructing and commissioning the building.

Annex 4: Meeting of Stakeholders/Organizations

UNDP/GEF Project No.00077154

“Improving Energy Efficiency in Residential Buildings in the Republic of Belarus”

MEETING MINUTES

Date of Meeting: 12 February 2013

Venue: UNDP Office in the Republic of Belarus
(6th floor, Conference Hall), 17 Kirov Str., Minsk

Agenda:

1. Discussing the issues related to the start of implementation of pilot projects on improvement of energy efficiency in new residential buildings within the framework of the Project “Improving Energy Efficiency in Residential Buildings in the Republic of Belarus”.
2. Discussing other issues related to implementation of the Project “Improving Energy Efficiency in Residential Buildings in the Republic of Belarus”.

Participants:

1. Farid Karakhanov, UNDP Deputy Resident Representative in the Republic of Belarus;
2. Semashko S.A., Chairman, Department on Energy Efficiency under State Committee on Standardization of the Republic of Belarus, Deputy Chairman, State Committee on Standardization of the Republic of Belarus;
3. Lis A.V., Deputy Minister of Natural Resources and Environmental Protection of the Republic of Belarus;
4. Semenkevich D.I., Deputy Minister of Architecture and Construction of the Republic of Belarus;
5. Grebenkov A.Zh., Project Manager, Project “Improving Energy Efficiency in Residential Buildings in the Republic of Belarus”;
6. Danilevsky L.N., First Deputy Director, RUE “Institute of Housing – NIPTIS named after Ataev S.S.”;
7. Pilipenko V.M., Director, RUE “Institute of Housing – NIPTIS named after Ataev S.S.”;
8. Chulba I.I., UNDP Project Coordinator;
9. Shibeko O.M., UNDP Program Activity Specialist.

Chulba I.I. welcomed the meeting attendees and expressed hope for a fruitful discussion of the agenda issues. Chulba I.I., in particular, drew the attention of those present to the fact that the Project Document stipulated implementation of three pilot projects for improvement of energy efficiency of newly constructed residential buildings. As of February 2013, written confirmations of the strategic readiness to work on their demonstration projects were received from two developers – MAPID and Grodnograzhdanproekt. However, no confirmation was received from the Ministry of Natural Resources and Environmental Protection which was identified as a developer of the third demonstration project.

Lis A.V. confirmed readiness of the Ministry of Natural Resources and Environmental Protection to act as a developer. The land for constructing the building was allocated by the Minsk Municipal Executive Committee last year and negotiations were conducted with a contractor. The Ministry of Natural Resources and Environmental Protection intends to participate in piloting and is willing to confirm its readiness in writing, provided that the Project is supported by the GEF.

Chulba I.I. stressed saying that within the framework of those pilot projects, the GEF was to cover exclusively the costs for additional measures aimed to improve energy efficiency in the amount of 15% of the base investment cost. He also drew the attention of those present to the preliminary demonstration construction schedule elaborated by the Project Manager and requested the attendees to provide their comments regarding it.

Semashko S.A. pointed out that it had been agreed in advance that construction may be rescheduled.

In his turn, Semenkevich D.I. informed the attendees about the forthcoming substantial changes in the field of energy efficiency and building construction. Specifically, the Ministry of Architecture and Construction should elaborate and improve the respective legislation by 1 July this year and energy efficient standards should be introduced into the construction of buildings by 2015.

In response, Grebenkov A.Zh. pointed out that there existed possibility to provide assistance in elaboration of respective recommendations within the Project framework. Chulba I.I. underlined that due to the reduced schedule for executing that work, the Ministry of Architecture and Construction had to mail a written request for providing assistance in executing the above work by the Project. He also expressed his opinion that recommendations could have been elaborated for a short term and long term. Semashko S.A. stated that it was reasonable to request the Project support in that area and pointed out that elaboration of recommendations should be based on evaluation of the current situation.

Chulba I.I. briefed the meeting attendees on the Project progress and plans for the near future. He, in particular, dwelled on the Project structure and staffing level for the time being and drew attention to the resources for remuneration of national and international experts included into the budget. Chulba I.I. pointed out that the Project Annual Plan was to be finalized by the end of February 2013. In addition to that, it was intended that the plan would be elaborated for the overall Project implementation period that would help have a more complete idea of the Project. Chulba I.I. expressed a view of the need to identify several alternative pilot projects which could be implemented in case the earlier identified projects would be affected by the force majeure. Grebenkov A.Zh. informed about plans to hold the first Project Inception Workshop in May 2013, but then it was decided to establish later a more definite date.

Semenkevich D.I. supported the Chulba I.I.'s proposal regarding pilot project backup plans. He spoke out in favor of elaboration of the Plan of Actions and responsibilities of the Project partners and stated that the Ministry of Architecture and Construction was likely to fulfill its commitments under the Project in the monetary form. Semenkevich D.I. also confirmed that the Ministry of Architecture and Construction was interested in the Project assistance in improving the respective legislation in the sphere of energy efficiency and construction of energy efficient buildings.

Semashko S.A. drew attention of the meeting attendees to the value of future pilot projects as they would help test three different innovations systems for different building types. He also cautioned that the energy efficiency activities should be funded in a sound and prudent manner to cover expenses of three pilot project activities.

Following the discussion, it was resolved that:

1. The Ministry of Natural Resources and Environmental Protection is to mail a letter to the UNDP confirming that the Ministry is interested to act as a developer of the third pilot project. The letter should also contain detailed data on the building, including the number of storeys, contractor's name and preliminary schedule.
2. The Ministry of Architecture and Construction is to mail a letter to the UNDP requesting to provide assistance in elaborating recommendations aimed to improve energy efficiency and building construction legislation.
3. The UNDP Project is to improve the Project Annual Work Plan 2013 by the end of February 2013 and submit it for consideration by national partners.
4. The Project Manager and national partners concerned are to visit Grodno to discuss the future Work Plan with Grodnograzhdanproekt.

For UNDP

Farid Karakhanov
UNDP Deputy Resident Representative
in the Republic of Belarus

For Department on Energy Efficiency State
Committee on Standardization of the
Republic of Belarus

Semashko S.A.
Deputy Chairman, State Committee on
Standardization, Department Director

For Ministry of Natural Resources and
Environmental Protection of the Republic
of Belarus

Lis A.V.
Deputy Minister

For Ministry of Architecture and
Construction of the Republic of
Belarus

Semenkevich D.I.
Deputy Minister

Annex 5: Cocmae NSC

Bulova Anatoly Dmitrievich	Head, Grodno Regional Department on Supervision over Rational Use of Fuel and Energy Resources
Gerasimenko Alexandr Nikolaevich	Head, Energy Division, Minsk Municipal Executive Committee
Pilipenko Vladimir Mitrofanovich	Director, SE “Institute of Housing - NIPTIS named after S.S. Ataev”, D Sc. in Engineering, Professor
Karakhanov Farid	UNDP Deputy Resident Representative in the Republic of Belarus
Katsynel Ryshard Bronislavovich	Chief Engineer, UE “Institute Grodnograzhdanproekt”
Kudrevich Olga Olegovna	Head, Center of Technical Rate Setting and Standardization, RUE “Stroitekhnorm”
Malievskaya Tatiana Petrovna	Head, Economics and Investment Activity Division, Department on Energy Efficiency
Minenkov Andrei Vladimirovich	Head, Division of Scientific and Technical Policy and Foreign Economic Relations, Department on Energy Efficiency
Osipova Irina Sergeevna	Senior Specialist, Division for Scientific-Technical Policy and Foreign Economic Relations, Department on Energy Efficiency
Pavlova Galina Grigorievna	Head, Main Department for Architectural, Scientific and Innovation Policy of the Ministry of Architecture and Construction of the Republic of Belarus
Semashko Sergei Alexandrovich	Deputy Chairman, Gosstandart, Director of the Department on Energy Efficiency
Sobol Eduard Ivanovich	Head, Division for Energy and Fuel, Grodno Regional Executive Committee
Tur Igor Vladimirovich	Head, Minsk City Department for Supervision over the Fuel and Energy Resources Rational Use

Annex 6: Minutes of the First NSC Meeting

П6.1 Meeting Minutes

UNDP/GEF Project No.00077154

“Improving Energy Efficiency in Residential Buildings in the Republic of Belarus”

Steering Committee Meeting

MEETING No.1 MINUTES

Meeting date: 2 April 2013

Meeting Venue: Meeting Hall, Department on Energy Efficiency under Gosstandart of the Republic of Belarus (8th floor, Premises 815), 17, Svobody Square, Minsk.

Agenda:

1. Opening the Steering Committee Meeting.
2. Discussing and approving UNDP/GEF Project Work Plan 2013.
3. Discussing and approving pilot energy-efficient building projects.
4. Miscellaneous.

Present at the Meeting:

Steering Committee members:

1. Semashko Sergei Alexandrovich, Deputy Chairman Gosstandart, Director Department on Energy Efficiency State Committee on Standardization Republic of Belarus;
2. Bulova Anatoly Dmitrievich, Head, Grodno Regional Department on Supervision over Rational Use of Fuel and Energy Resources;
3. Gerasimenko Alexandr Nikolaevich, Head, Energy Division, Minsk Municipal Executive Committee;
4. Katsynel Ryshard Bronislavovich, Chief Engineer, UE “Institute Grodnograzhdanproekt”;
5. Kudrevich Olga Olegovna, Head, Center of Technical Rate Setting and Standardization, RUE “Stroitekhnorm”;
6. Malievskaya Tatiana Petrovna, Head, Economics and Investment Activity Division, Department on Energy Efficiency;
7. Minenkov Andrei Vladimirovich, Head, Division of Scientific and Technical Policy and Foreign Economic Relations, Department on Energy Efficiency under State Committee on Standardization of the Republic of Belarus;

8. Pavlova Galina Grigorievna Head, Main Department for Architectural, Scientific and Innovation Policy of the Ministry of Architecture and Construction of the Republic of Belarus;

9. Pilipenko Vladimir Mitrofanovich, Director, SE “Institute of Housing - NIPTIS named after S.S. Ataev”;

10. Tur Igor Vladimirovich, Head, Minsk City Department for Supervision over the Fuel and Energy Resources Rational Use;

11. Turov Vyacheslav Nikolaevich, First Deputy Director General, OJSC “MAPID”;

12. Chulba Igor Ivanovich, UNDP Project Coordinator in the Republic of Belarus.

UNDP/GEF Project members present:

1. Grebenkov Alexandr Zhoresovich, Project Manager;

2. Huk Natallia Georgievna, Administrative and Financial Assistant (Minutes Taker).

Present by invitation:

1. Valyuzhevich Elena Nikolaevna, Head, Urban Development Project Appraisal Division, State Environmental Impact Assessment Department, Ministry of Natural Resources and Environmental Protection;

2. Vorobiev Victor Ivanovich, Chairman, Supervisory Board, JCJSC "International Energy Center";

3. Korchinsky Sergei Alexandrovich, Director, JCJSC “International Energy Center”.

Under agenda Item 1 Semashko S.A. took the floor. He opened the Steering Committee Meeting and briefed on the current situation in the construction sector and construction of energy efficient housing and informed the attendees about latest decisions of the Belarusian Government in that sphere. Having underlined the Project relevance, he expressed gratitude to the UNDP and GEF for support extended to policy and measures for improving energy efficiency being implemented currently in the country. He introduced the National Project Director from the Belarusian party – Minenkov Andrei Vladimirovich, Head of the Division of Scientific and Technical Policy and Foreign Economic Relations, Department on Energy Efficiency under State Committee on Standardization of the Republic of Belarus. Before concluding his opening statement, he expressed confidence that the Project would fully and timely achieve the goals set in the Project Document.

Minenkov A.V. announced the agenda and briefed on Project objectives and gave floor to Grebenkov A.Zh.

Under agenda Item 2 Grebenkov A.Zh. briefly described the Project goals and objectives and presented an indicative Draft Project Work Plan 2013 underlying that the Plan was elaborated based on the Project Document. Then, he briefly described the Plan content and pointed out that it contained activities related to all four Project components, but it accounted both resources planned for that year and actual time frames for implementing the activities. Despite the fact that many activities would be included into the plans for the next years, the most relevant, important and urgent goals would be implemented firstly to reduce the time lag due to the delayed Project start and secondly, to timely respond to requests and accelerated plans of the Ministry of Architecture and Construction and Department on Energy Efficiency aimed to implement recently adopted respective decisions of the Government. The Project Manager drew the attendees’ attention to the need of holding an Inception Workshop to assess the current situation in the sphere of improving energy efficiency in residential buildings and based on that to make

amendments, if any, in the Project Document (updating its specific approaches, targets, implementation timeframes, etc.).

Semashko S.A. pointed out that the Department reviewed the Project Work Plan 2013 and had no comments. He expressed the opinion that agreed updates may be included in it, if required. He suggested that the presented Plan should be approved by the Steering Committee members.

Pavlova G.G. pointed out that in the light of the decision recently made by the Government regarding the moving to designing exclusively energy efficient buildings from 1 April 2013, it was reasonable to advance the time of implementation of the Plan Item related to development of training programs for specialists, developers and designers in the sphere of energy efficiency improvement and upgrading building energy surveys (Item 24, Work Plan) from 2014 -2016 to the current year. In response to these issues, Chulba I.I. pointed out that it was reasonable to commence from preparation of the training program, recruit respective specialists and called for cooperation of all stakeholders to identify target groups in the process of arranging the Inception Workshop. Pavlova G.G., in her turn, expressed readiness of the Ministry of Architecture and Construction to actively participate in arranging and holding the above Project activity planned to be held in May 2013. She drew special attention to the need of organizing a discussion to identify problematic issues and establishing a feedback with all parties involved in the process of improving energy efficiency in buildings.

Grebenkov A.Zh. informed that it was planned to prepare training materials and train specialists in the field of residential building energy surveys in the current year and also to develop the Terms of Reference for improving training courses intended for training respective specialists for subject-oriented institutions of higher education.

Grebenkov A.Zh. also pointed out that representatives of the Ministry of Healthcare and RUE “Glavgosstroieexpertiza”, i.e. organizations supervising observance of main sanitary social characteristics of residential buildings during their construction, should be included into the Steering Committee as its members. In response, Minenkov A.V. informed that representation of organizations in the Steering Committee was preliminary agreed between the Department on Energy Efficiency under Gosstandart and the UNDP. Later, a respective proposal was mailed to the RUE “Glavgosstroieexpertiza” to include an enterprise representative in the Steering Committee, however, the enterprise informed that no proposals for participation in it had been received. The specialists of the Ministry of Healthcare and RUE “Glavgosstroieexpertiza” might be involved in implementation of the Project and participate in the Steering Committee meetings. The Steering Committee members agreed with Chulba I.I. that in the light of emerged problematic issues a representative of the Ministry of Housing and Public Utilities (HPU) of the Republic of Belarus should be also involved in the Project implementation.

Then, the floor was given to Pilipenko V.M. He pointed out that raising awareness of the tenants and HPU employees as to how operate special equipment installed in the process of construction of such types of buildings is an extremely important aspect in the sphere of energy efficient houses construction. Some regional Belarusian cities (Gomel and Vitebsk) gained negative experience when mishandled equipment designed to improve building energy efficiency hampered the achievement of expected energy consumption reduction. He believed that one of the most significant barriers impeding introduction of the energy efficient houses was a conservative approach of maintenance services.

In addition, Pavlova G.G. pointed out that the most urgent goals today was the goal of elaborating regulatory documents which would strictly specify the need of designing residential buildings with consideration for new requirements for improving energy efficiency due to the fact that currently design organizations might choose designing techniques in accordance with legislation. Due to the fact that application of current norms and energy consumption rates, as well as making cardinal changes in the available designs entailed increase in the cost of designs of housing under construction, undoubtedly, approaches of design organizations are still not in favor of the much-needed innovation.

Then, the floor was given to Katsynel R.B. He was convinced that the goals the Project had been pursuing, though complicated, but achievable, and the main thing was to prepare a regulatory framework and train skilled highly responsible specialists. Katsynel R.B. agreed with the need to hold the Inception Workshop to identify all urgent problems. He also drew attention to the need of highlighting that topic in the mass media, conduct awareness-raising and outreach campaigns aimed to cover a wide audience.

That issue was also dealt with by Minenkov A.V. who underlined the importance of recruiting a public relations specialist by the Project to address the Project objectives specified in the Project Document.

Summing up the discussions of the Plan, Minenkov A.V. proposed to approve the presented Project Work Plan 2013.

Resolved under Agenda Item 1:

- to approve the Project Work Plan 2013 (attached).

Under agenda Item 3, the floor was given to Grebenkov A.Zh. He briefly characterized pilot energy efficient residential buildings to be constructed – two multi-apartment buildings in Minsk and one in Grodno – and also proposed to consider a preliminary work schedule related to these projects.

The first demonstration Project facility – a 4-entrances, nine-storey, large-panel residential building with 140 apartments in Minsk. The developer - CC “MAPID”. Turov V.N. pointed out that at the time of holding the Steering Committee Meeting, the Minsk Municipal Executive Committee had not yet confirmed in writing the allocation of a site in Malinovka for construction, however, the decision was to be made and documents were under consideration and submitted for conciliation with different services of the Minsk Municipal Executive Committee. He also confirmed the readiness of OJSC “MAPID” to participate in the Project implementation and pointed out that the most realistic timeframes for performing the work were as follows: designing - III quarter of 2013, start of construction – II quarter of 2014. Minenkov A.V. assured that the Department on Energy Efficiency would assist within the framework of its competence in addressing problematic issues related to allocation of construction sites.

Katsynel R.B. reported on the second project in Grodno. He, as a representative of the UE “Institute Grodnograzhdanproekt”, stated that a site for construction a three-section ten-storey brick building was allocated, it was planned to start the construction in IV quarter of 2013. Minenkov A.V. positively assessed the progress of preparatory works for construction of the future demonstration project in Grodno.

According to the Project Document, the Ministry of Natural Resources and Environmental Protection of the Republic of Belarus (MNREP) acts as a developer of the third demonstration project. Valyuzhevich E.N. acknowledged that she did not fully handle the situation, however, she once more confirmed the intention of the MNREP to act as a developer of a 1-entrance twenty four-storey residential building which is planned to be constructed by the customer (RUE “Belgeologia”) on the MNREP’s site in Stepyanka. Minenkov A.V. requested the MNREP representative to appoint a responsible contact person who could be approached to discuss that issue and also requested to prepare a preliminary schedule of designing and construction works and also to update the information about performance characteristics of the residential building.

Chulba I.I. expressed his concern regarding the proposed tight construction schedule and expressed his opinion that it would be reasonable to reschedule design and construction works in terms of their intensity to somewhat later period. He also pointed out that subject to the UNDP rules, there existed two options for involving organizations into execution of specific Project activities – a tender and national execution. The Steering Committee may recommend to the UNDP to recruit specific organizations for performing specific types of work through the

national execution. This would allow the time required for organizing and holding the tender to be saved. Chulba I.I. specifically emphasized the issues related to compliance with deadlines in implementing the Project set goals.

Summing up the discussion on that agenda Item, Minenkov A.V. requested the Steering Committee members to approve the Project-proposed List of pilot (demonstration) projects for construction of energy efficient residential buildings and a schedule of designing and construction works on that Project component.

Resolved Under Agenda Item 3:

– to approve the List of pilot (demonstration) projects for construction of energy efficient residential buildings and a schedule of designing and construction works under the Project for 2013 (attached).

Under agenda Item 4 Minenkov A.V. informed the Meeting attendees that in March 2012 OJSC “Belvnesheconombank” mailed the letter to the Department on Energy Efficiency under Gosstandart in which it expressed support to the Project “Improving Energy Efficiency in Residential Buildings in the Republic of Belarus” and requested to consider the opportunity to include an additional facility in the List of demonstration projects – an energy efficient residential building with attached premises to accommodate the Eurasian Center on Energy Efficient Technologies.

Based on that request, the Department on Energy Efficiency under Gosstandart initiated the discussion of that issue at the meeting in the UNDP office. The UNDP representatives noted that the OJSC Belvnesheconombank’s request would be likely satisfied, however, they pointed out that the Department on Energy Efficiency had to conciliate that decision with main Project partners – the Ministry of Architecture and Construction and Ministry of Natural Resources and Environmental Protection. Such conciliations had been achieved by the Department on Energy Efficiency under Gosstandart and copies of letters confirming approvals were forwarded to the UNDP. In addition, in 2012, the Department on Energy Efficiency under Gosstandart worked in cooperation with the Minsk Municipal Executive Committee to identify potential sites for construction that energy efficient residential building, and, as a result, proposals regarding such sites were submitted for consideration to the applicant - OJSC “Belvnesheconombank”.

Then, Minenkov A.V. gave the floor to Vorobiev V.I. who welcomed the attendees and Steering Committee members and then in proof of A.V.Minenkov’s statement proposed to include one multi-storey residential building in Minsk into the List of Demonstration Projects as a fourth demonstration facility to which it was planned to attach premises intended for accommodation of the Eurasian Center on Energy Efficient Technologies and possibly JCJSC “International Energy Center”.

Vorobiev V.I. informed the Steering Committee members that funds for that construction had been received against the guarantee of “Vnesheconombank” (Russian Federation). Some designs of the future structure were elaborated jointly with the NIPTIS. That project was supported by the Department on Energy Efficiency, RUE “Beltelecom” and Ministry of Communication and Informatization. Several options of the construction sites were available. Vorobiev V.I. particularly emphasized that “Belvnesheconombank” was interested in the information and expert support from the Project and pointed out once more that no funds needed to be allocated by the Project for construction of that facility.

Grebenkov A.Zh. expressed satisfaction with continuance of the UNDP projects and underlined that JCJSC “International Energy Center” was established with direct involvement of the UNDP Project managed by him. In his speech he pointed out that, to his mind, there existed two ways of addressing those issues: i) to thoroughly examine the data on technical characteristics of the

building and include it into the List of demonstration projects; ii) due to doubts regarding the readiness to construction on the part of the RUE “Belgeologia”, to consider this option as an alternative project.

Chulba I.I. expressed his view on that issue. He thanked for the interest to the project and informed that he in every way welcomed emergence of new partners, however, the issue of including the fourth project with the assigned demonstration status was, to his mind, premature. He pointed out that the status of a pilot project within the framework of the Project implied specific commitments, including financial commitments, therefore, that proposal should be subjected to scrutiny and analysis. Given limited financial resources to be allocated to implementation of pilot activities within the Project framework, the financial requirements for a successful implementation of existing pilot project needed to be thoroughly evaluated before new projects were included into the List. Chulba I.I. pointed out that two of three pilot projects were located in Minsk and proposed that in case one of the existing projects needed to be replaced, priority should be given to the projects located in regions of Belarus, for example, in Mogilev, that would facilitate to more extensively replicate successful project experience. Chulba I.I. supported the view of Grebenkov A.Zh. regarding the need to examine characteristics of the residential building at the given stage and in case of emergence of any risk, to use that proposal on inclusion additional pilot projects as an alternative option. Especially that the main Project goal subject to the Project Document is the construction of specifically residential buildings. At the end of his speech Chulba I.I. called on the Steering Committee not to make hasty decisions regarding an additional demonstration project.

Summing up the discussions **under agenda Item 4**, Minenkov A.V., having pointed out the need to account all views and make coordinated decisions during Steering Committee meetings, expressed regret regarding departure from previous arrangements and the fact that the UNDP set forth new requirements and conditions in relation to the given specific request of OJSC “Belvnesheconombank” and also proposed that the Steering Committee members should hand over suggestions on criteria of selection additional demonstration projects and on requirements and conditions for considering those projects as additional ones to the Project Management Unit within one week. In addition, Minenkov A.V. tasked the Project Management Unit jointly with other stakeholders to examine other proposals on additional demonstration units, including that proposed by Chulba I.I. and to preliminary evaluate distribution of GEF funds for financing activities at demonstration projects. It was proposed to hold the next meeting of the Steering Committee within the framework of the Inception Workshop planned to be held in May 2013, after all issues raised in the course of that discussion had been reviewed in detail in advance.

Resolved under Agenda Item 4:

– In April 2013, the Project Management Unit should examine main characteristics and readiness for construction of the residential building subject to the OJSC “Belvnesheconombank”’s proposal and also review other alternative options of additional demonstration projects, including those in Mogilev;

– The Project Management Unit jointly with the stakeholders should preliminary estimate tentative cost of works for implementing the planed activities to improve energy efficiency of demonstration residential buildings by the next Steering Committee meeting;

– The Project Management Unit, given the status of works for preparation of the construction of the RUE “Belgeologia” demonstration residential building and available project resources to implement the planned activities to improve energy efficiency of demonstration residential buildings, should submit the document substantiating the possibility of inclusion of additional projects into the demonstration project List for consideration at the next Steering Committee meeting.

National Project Director,

Head, Division of Scientific and Technical
Policy and Foreign Economic Relations
Department on Energy Efficiency

State Committee on Standardization
Republic of Belarus

A.V. Minenkov

UNDP Project Coordinator

_____ I.I. Chulba

UNDP/GEF Project Manager

_____ A.Zh. Grebenkov

П6.2 Adapted Annual Detailed Work Plan 2013

Activity description		Annual Target
<i>Outcome 1: Strengthened legal and regulatory framework and mechanisms to enforce the legislation for improving the energy efficiency of the building sector with the focus on new residential buildings</i>		
1.1	A formally adopted and endorsed methodology for buildings' energy performance monitoring and calculation in line with contemporary European norms or other applicable international standards.	Formally adopted methodological guidelines for integrated energy performance monitoring and calculation of residential buildings.
1.1.1	Develop methodological guidelines for integrated energy performance monitoring and calculation applicable to different types of residential buildings:	A report and a draft of methodological guidelines for buildings' integrated energy performance monitoring and calculations submitted to the EE Department and published online. Deadline - August 31, 2013.
1.1.2	Provide on-going consulting services with regard to the submitted guidelines directly to the EE Department, Ministry of Architecture and Construction and other relevant authorities in the course of conciliation and adoption procedures.	The guidelines endorsed by the EE Department and the Ministry of Architecture and Construction, and adopted by competent authority(ies). Deadline - December 31, 2013.
1.2	At least 50 completed energy audits providing information on factual energy consumption and energy balance of different types of existing residential buildings of different age and using different construction techniques.	Energy audits of at least 5 residential buildings organized and conducted.
1.2.1	Develop guidelines for energy audit in residential buildings based on the best domestic and international practices.	Guidelines for energy audits of residential buildings submitted to the EE Department and the Ministry of Architecture and Construction, and published online. Deadline - November 30, 2013.
1.2.2	Based on the results of activity 1.2.1, prepare a curriculum and training materials for technical training workshops on energy audit of residential buildings, and publish them online and offline.	Training course containing materials (lectures, presentations) and a curriculum on energy audit of residential buildings prepared and published. Deadline - December 15, 2013.
1.2.3	Organize a 2-day training workshop for national experts and local energy auditing firms to improve their capacity in energy audit of residential buildings.	A two-day training for ca. 60 energy auditors organized and held. Deadline - December 31, 2013.

1.3	A completed review and cost-efficiency analysis of different technical options to improve buildings' energy efficiency and the use of renewable energy sources, including an analysis of the cost-efficiency of different heat supply and distribution methods to serve low or close to zero energy buildings.	A report approved by the EE Department and published online, containing the results of cost-efficiency analysis of different technical options to improve buildings' energy efficiency.
1.3.1	Collect actual data on different construction techniques, appropriate construction materials, design arrangements, renewable energy applications, heat supply and distribution schemes and other technical options to improve energy efficiency of various types of residential buildings.	A report on technical options to improve energy efficiency of various types of residential buildings submitted to and approved by the EE Department and published online. Deadline - May 31, 2013.
1.3.2	Conduct a cost-efficiency analysis of different technical options and practices revealed in activity 1.3.1, which would be best applicable to the Belarusian civil construction industry with a focus on different types of residential buildings.	A report on cost-efficiency analysis of different technical options to improve energy efficiency of various types of residential buildings submitted to and approved by the EE Department. Deadline - August 31, 2013.
1.3.3	Draft recommendations concerning overall low-energy building performance with the least possible construction and O&M costs for residential buildings in Belarus.	A report containing recommendations for the cost-effective low-energy performance of various types of residential buildings submitted to and approved by the EE Department and published online. Deadline - October 31, 2013.
1.4	A completed analysis of the impact of the new low energy buildings on the feasibility of different heat supply systems typically used in Belarus and the buildings' central water heating + radiator scheme connected to district heating and hot water supply systems, in particular, with related recommendations for future development.	A report approved by the EE Department and the Ministry of Architecture and Construction and published online, with evaluation of most acceptable options for further improvement of heat and hot water supply systems.
1.4.1	Conduct an analysis of impact of different technical options and practices revealed in activities 1.3.1-1.3.3 on the feasibility of various typical schemes used for district heating and hot water supply in residential areas in Belarus.	A report on feasibility of different typical district heating and hot water supply schemes with due regard to technical solutions submitted to and approved by the EE Department and the Ministry of Architecture and Construction and published online. Deadline - October 31, 2013.
1.4.2	Based on the results of analysis above, recommend the best applicable options for further development of district heating and hot water supply systems in residential areas.	Recommendations on the further development of district heating and hot water supply systems in residential areas submitted to the EE Department and the Ministry of Architecture and Construction. Deadline - December 31, 2013.

1.5	A finalized draft with related stakeholder consultations for revised national energy performance based norms and standards for newly constructed buildings and, as applicable, those going through a major renovation with the initial focus on residential buildings.	The first drafts of requirements and norms for new energy efficient building design and performance submitted to the EE Department and the Ministry of Architecture and Construction.
1.5.1	Draft the national energy performance based norms and standards for newly constructed buildings.	Draft of standards for designing and operation of newly constructed residential buildings submitted to the EE Department and the Ministry of Architecture and Construction and published online. Deadline - November 30, 2013.
1.5.2	Draft the national energy performance based norms and standards for buildings going through a major renovation.	Draft of the energy performance standards for residential buildings under major renovation submitted to the EE Department and the Ministry of Architecture and Construction and published online. Deadline - December 31, 2013.
1.6	Elaborated and adopted by the Government of Belarus practical procedures for the establishment of a mandatory system of EE certification of buildings, including issuing of EE passports and a system of monitoring and compliance checking with related on-site spot-checks.	The Output is to be implemented in 2014-2016
1.7	Further developed and adopted quality standards and a system of EE certification for the construction materials, accessories and appliances used in the construction sector.	The Output is to be implemented in 2014-2016
Outcome 1 total:		US\$185,780

Outcome 2: Enhanced capacity of the Belarusian specialists to implement and effectively enforce the new energy efficiency building standards and construction norms		
2.1	Developed, published and disseminated stakeholder group specific technical guides, handbooks, guidelines and other related training materials on energy efficiency design and construction of new buildings to support the implementation of the envisaged new construction norms, including dissemination of this information through the Internet based energy platform and the project's own Internet site.	A capacity building action plan of the Project adopted by the EE Department.
2.1.1	Carry out the capacity needs assessment of all relevant stakeholders and specify various target groups for enhancing their capacity in the field of energy efficiency improvement of residential buildings.	A report on the results of the capacity needs assessment with respective recommendations submitted to and approved by the EE Department and published online. Deadline - October 31, 2013.
2.1.2	Based on the results received under activity 2.1.1, prepare, discuss and approve a capacity building action plan for different target groups, including schedules for different measures, activities and events.	A capacity building action plan, as well as respective activities for 2014-2016 adopted by the EE Department. Deadline - December 31, 2013.
2.2	New courses on integrated building design and building energy efficiency included into the curricula of all key Belarusian universities educating architects and building engineers and at least 200 students have passed these new courses by the end of the project	Recommendations and draft ToRs for updating and adjusting curricula of selected relevant universities approved by universities and adopted by the EE Department.
2.2.1	Conduct critical analysis of curricula of different relevant Belarusian universities with a view of revealing possible gaps and deficiencies in education process related to integrated energy efficient building design, construction and operation.	A report on the results of critical analysis of curricula submitted to and approved by the EE Department and published online. Deadline - October 31, 2013.
2.2.2	Organize a round table (ad-hoc meeting) to discuss relevancy of new university courses for education process in selected universities.	At least 15 representatives of stakeholders attended the round table and a respective Minutes with recommendations prepared. Deadline - November 15, 2013.
2.2.3	Prepare recommendations and draft ToRs for updating and adjusting curricula of selected relevant universities.	Recommendations and draft ToRs for updating and adjusting curricula of selected relevant universities submitted to and approved by the EE Department. Deadline - December 31, 2013.
2.3	At least 50 experts from different state and municipal entities dealing with construction policies, norms and standards are trained on the most recent international developments, experiences and lessons learnt on building energy efficiency and environmentally sustainable construction.	The Output is to be implemented in 2014-2016 pursuant to the action plans approved (see activity 2.1.2).

2.4	<p>At least 50 architects and other buildings engineers from the leading design institutes (including NIPTIS, Belzhilproekt, Belgosproekt, design institutes in Regional centers and also professional associations: Belarusian Association of Architects, “Renewable Energy”, etc.) are trained on the: i) most recent international developments in the area of energy efficient buildings from the technical and policy perspective; ii) integrated, energy efficient building design principles and techniques; iii) implications in the practical design work when moving from prescriptive norms to buildings’ overall energy performance based construction norms; iv) available technical options and cost-effective design principles for optimizing buildings’ energy performance; and v) presentation of the available, state of the art software to support integrated, energy efficient building design and training for its use.</p>	<p>The Output is to be implemented in 2014-2016 pursuant to the action plans approved (see activity 2.1.2).</p>
2.5	<p>At least 50 construction inspectors from the main regional and district centers trained on methodologies for assessing buildings’ energy performance and the correct installation of the materials and equipment used.</p>	<p>The Output is to be implemented in 2014-2016 pursuant to the action plans approved (see activity 2.1.2).</p>
2.6	<p>At least 50 supervisors of the leading construction companies trained on the correct installation of the materials and equipment used and provision of other advices for private construction companies on how to integrate elements of energy efficient design in their investment projects throughout the project cycle from the design to construction and building management.</p>	<p>The Output is to be implemented in 2014-2016 pursuant to the action plans approved (see activity 2.1.2).</p>
2.7	<p>A two-week training seminar for professional designers, representatives of the state expertise and building supervision in order to familiarize the group with the experiences of energy-efficient building design, construction and governance (including the role of municipal authorities) in EU countries and visiting the facilities (25 people).</p>	<p>The Output is to be implemented in 2014-2016 pursuant to the action plans approved (see activity 2.1.2).</p>
2.8	<p>Other required training, networking and exchange of knowledge and lessons learnt by building on co-operation with other international initiatives promoting energy efficient and environmentally sustainable building construction.</p>	<p>Belarusian specialists and decision-makers participated in at least three study visits and three international events dedicated to energy efficient and environmentally sustainable building construction and operation.</p>

2.8.1	Monitor and cooperate with other international initiatives and prepare quarterly plans for forthcoming international events dedicated to energy efficient and environmentally sustainable building construction and operation.	Description of selected events, ToRs for short-term assignments and financial support documents prepared by the PMU and approved by the UNDP and EE Department. During the year.
2.8.2	Organize study visits in appropriate EU country(ies), selected as per activity 2.8.1, devoted to the best existing practice in application of the energy performance standards to residential buildings.	At least 2 study tours for 5 Belarusian specialists each conducted in EU countries and short reports with recommendations prepared. Deadline - October 31, 2013.
2.8.3	Provide informational support for Belarusian specialists and decision-makers in their participation in at least three international events corresponding to Project objectives.	In total at least 9 Belarusian specialists and decision-makers took part in at least three relevant international events. During the year.
2.8.4	Provide support for Belarusian specialists and decision-makers in organizing and implementation of study visits to similar UNDP projects.	At least 3 Belarusian specialists and decision-makers took part in at least one study visit and joint workshop with experts of similar UNDP projects. During the year.
Outcome 2 total:		US\$61,126

Outcome 3: Demonstrated energy and cost-saving potential of new energy efficiency measures in at least three new residential buildings in two Belarusian cities		
3.1	Finalized background studies for and design of the selected demo buildings by applying integrated building design principles and taking into account new technologies and approaches for meeting the HVAC needs of those buildings in a most energy and cost efficient way.	A relevant part of construction documents for energy efficiency improvement in at least one of the selected buildings and action plans for design and construction of the demonstration sites along with schedules for different measures, activities and events approved by developers and adopted by the EE Department.
3.1.1	Carry out respective studies of baseline architecture and engineering characteristics of potential constructions at the demo sites focusing on the number of flats and tenants, energy, heat and hot water consumption, and HVAC system requirements along with customer properties expected.	A report prepared on architecture and engineering characteristics of potential constructions at the demo sites, examined and approved by developers and adopted by the EE Department. Deadline - June 30, 2013.
3.1.2	Based of the results of activity 3.1.1 above, suggest and justify applicable building space-and-planning parameters, other technical and design solutions for the selected demo sites based on integrated energy performance building design principles and taking into account applicable energy efficiency improvement technologies and approaches.	Design and technical solutions for different energy efficient options prepared, examined and approved by developers and adopted by the EE Department for demonstration buildings. Deadline - July 31, 2013.
3.1.3	Provide least-cost analysis of the options suggested in activity 3.1.2 and choose the most feasible and cost-effective building performance for the demo projects with minimal possible energy consumption per unit area along with keeping the same or even improved comfort conditions and customer properties stipulated in the baseline design.	A report on least-cost analysis and respective recommendations for selected options prepared, examined and approved by developers and adopted by the EE Department. Deadline - August 31, 2013.
3.1.4	Develop preconstruction simulations and exploratory designs of measures, technological methods, installations and equipment for energy efficiency improvement of the three residential buildings chosen as a result of activity 3.1.3.	A report, design drawings and other relevant documentation for siting of the energy efficiency installations and equipment prepared, examined and approved by developers and adopted by the EE Department. Deadline - September 30, 2013.
3.1.5	Based on the preliminary design of measures for energy efficiency improvement as per activity 3.1.4, provide preliminary specifications for the equipment and installations needed and determine potential equipment manufacturers and suppliers.	A report containing specifications for the equipment and installations and list of potential equipment manufacturers and suppliers prepared and submitted to developers and the EE Department. Deadline - October 31, 2013.

3.1.6	Based on the results of activities 3.1.3-3.1.5, implement all necessary developments concerning design of techniques, installations and equipment for energy efficiency improvement of at least two of the three residential buildings chosen, coordinate and complete a relevant part of construction documents.	A relevant part of construction documents for energy efficiency improvement in at least two of the selected buildings completed and submitted to developers and the EE Department. Deadline - December 31, 2013.
3.1.7	Based on the results received under activities 3.1.1-3.1.6, prepare, discuss and approve action plans for design and construction of the demonstration sites along with schedules for different measures, activities and events in 2014-2016.	An action plan, as well as respective schedule for designing and construction works for 2014-2016 adopted by the EE Department. Deadline - December 31, 2013.
3.2	Finalized construction of the demo buildings by ensuring that the construction and all installation are made in accordance with the proposed or adopted quality standards and guidelines.	The Output is to be implemented in 2014-2016 pursuant to the action plans approved (see activity 3.1.7).
3.3	A monitoring report on the construction of three demonstration buildings documenting the experiences and lessons learnt from procuring, installing and testing the new energy efficient materials, construction techniques and appliances.	The Output is to be implemented in 2014-2016 pursuant to the action plans approved (see activity 3.1.7).
3.4	A monitoring report on the energy performance of three demonstration buildings documenting the actual energy and financial savings and GHG emission reduction.	The Output is to be implemented in 2014-2016 pursuant to the action plans approved (see activity 3.1.7).
3.5	At least 30 private showings of the new buildings organized for local architects, designers, builders and other decision makers, including half-day training sessions with an objective to promote the solutions adopted for the demonstration projects in additional buildings.	The Output is to be implemented in 2014-2016 pursuant to the action plans approved (see activity 3.1.7).
Outcome 3 total:		US\$195,109

Outcome 4: Documented, disseminated and institutionalized project results providing a basis for further replication

4.1	Developed and published public awareness raising materials and completed nation-wide awareness and information campaign advocating the benefits of energy efficiency measures in new buildings, including economic, social, health, environmental and aesthetical aspects and also addressing the GEF/UNDP visibility requirements.	At least five interviews and press-releases along with at least three printed materials provided for specialists and tenants.
4.1.1	Organize and carry out an ongoing information campaign (interviews, press-releases, etc.) about the Project activities.	At least five interviews and press-releases provided. During the year.
4.1.2	Prepare and publish hand-books, leaflets, brochures, etc. for professionals about the best practices concerning energy efficiency improvement in residential buildings.	At least one printed material for professionals about the best practices concerning energy efficiency improvement in residential buildings prepared and issued. During the year.
4.1.3	Prepare and publish hand-books, leaflets, brochures, etc. for professionals about the best practices concerning energy audit in residential buildings.	At least one printed material for professionals about the best practices concerning energy audit in residential sector prepared and issued. During the year.
4.1.4	Prepare and publish hand-books, leaflets, brochures, etc. for general public about the best practices concerning energy efficient operation of the housing.	At least one printed material for general public about the best practices concerning energy efficient management of households. During the year.
4.1.5	In cooperation with the Ministry of Education and the EE Department, provide informational supports to the "Energy Marathon" Republican Contests.	At least one "Energy Marathon" Republican Contest supported and conducted. During the year.
4.2	Agreed methodology and sustainable institutional arrangements for annual market monitoring keeping track on buildings constructed each year, as well as the sale of key building materials, accessories and appliances together with their energy performance characteristics.	The Output is to be implemented in 2014-2016.
4.3	Fully mandated and capacitated state agency with a responsibility to monitor the energy savings and CO2 emission reductions in residential and other buildings, together with the agreed procedures for compiling the required primary data.	Draft recommendations for an institutional framework of the national energy conservation and GHG reduction MRV system in the residential construction sector.
4.3.1	Conduct a critical analysis of the existing national institutional system and procedures for monitoring, reporting and verification of the energy savings and GHG emission reductions in the construction sector.	An analytical report concerning the existing national institutional system and procedures for monitoring, reporting and verification of the energy savings and GHG emission reductions in the construction sector along with respective recommendations submitted to and approved by the EE Department and the Ministry of Natural Resources. Deadline - November 30, 2013.

4.4	An approved national energy audit program (including the required funding for its implementation) for promoting larger number of energy audits of residential and other buildings and including a mechanism for using the audit results for elaboration of the energy efficiency strategies for the building sector at the national level.	The Output is to be implemented in 2014-2016.
4.5	Energy-efficiency aspects integrated into the regional and local plans for territorial development being developed by the Institute of Urban and Regional Planning (IRUP).	The Output is to be implemented in 2014-2016.
4.6	An International conference on energy efficiency in residential sector held in Belarus, including a field visit to the pilot demonstration sites and coordination with other UNDP/GEF building energy-efficiency projects.	International seminars on “Best Practice in Energy Efficiency Improvement in Residential Buildings” are organized and held annually with a later International Conference by the end of the Project.
4.6.1	Organize an International seminar (or a separate conference session) on “Best Practice in Energy Efficiency Improvement in Residential Buildings” under the auspices of the Project and in cooperation with the EE Department, UNDP and other similar projects.	At least two International seminars on “Best Practice in Energy Efficiency Improvement in Residential Buildings” organized and held. Deadline - May, 2013 and the 4th quarter, 2013.
4.7	Regularly updated project website with posting on it the project information and link to an Expanded Energy Platform.	The Project's website created and linked to the Energy Efficiency Platform.
4.7.1	Prepare a ToR for the Project Website development including requirements for organizational arrangements (domain, host, provider) and legal provisions for linking to the Energy Efficiency Platform.	The ToR prepared and approved by the EE Department. Deadline - May 31, 2013.
4.7.2	Develop and launch the Project Website.	The Project Website developed and launched. Deadline - August 31, 2013.
4.8	Annual market monitoring reports for new building construction with the emphasis on energy efficiency aspects.	The energy efficiency building construction market monitoring report for 2013 prepared.
4.8.1	Conduct a study on energy performances and respective GHG emissions of different residential buildings introduced in the housing construction market in 2013, and, on this basis, draft a 2013 report on market monitoring for new residential building construction with the emphasis on energy efficiency aspects.	A report on the energy efficiency building construction market monitoring for 2013 prepared and approved by the EE Department. Deadline - December 31, 2013.
4.9	Final project report consolidating the results and lesson learnt from the implementation of the proposed project components and recommendations for the required next steps.	The inception report prepared and discussed, and recommendations for adjustments of respective interventions of the Project approved by stakeholders and incorporated into the Project implementation strategy and adaptive approaches.

4.9.1	Implement inception stage study by means of collecting and analyzing current actual baseline data on legal and institutional framework, technical standards, construction techniques, materials, design arrangements, renewable energy applications, heat supply and distribution schemes and other technical options to improve energy efficiency of various types of residential buildings, and comparing them with the baseline described in the Project Document.	A report on the baseline situation in the field of energy efficiency improvements in residential buildings prepared and adopted by the EE Department. Deadline - April 30, 2013.
4.9.2	Compile and present an inception stage report describing the new baseline situation and proving a respective adjustment of intervention approaches of the Project suggested in the Project Document.	An inception report prepared and approved by the EE Department. Deadline - May 15, 2013.
4.9.3	Organize an Inception Seminar to present and discuss the Inception Stage Report describing the new baseline situation and proving a respective adjustment of intervention approaches of the Project suggested in the Project Document.	A seminar organized and held to discuss and adopt the Inception Report. Deadline - May 31, 2013.
Outcome 4 total:		US\$75,532
<i>Effective project management and monitoring ensured</i>		
PM1	Project monitoring and reporting.	At least two Project Steering Committee meetings held. Deadline - May 31 and December 31, 2013. All project reports submitted and approved in due time. Deadline - July 15, 2013 (for semiannual report to the Ministry of Economy) and December 15, 2013 (for annual reports to the UNDP/GEF and Logs).
PM3	Project management and project office functioning.	Project office successfully operated. Project plan successfully fulfilled. Throughout the Project
Project management total:		US\$77,515
Total 2013:		US\$595,062

П6.3 Tentative Schedule of Demonstration Construction

Project	2013				2014				2015				2016			
	I	II	III	IV	I	II	III	IV	I	II	III	IV	I	II	III	IV
Grodno (Grodnograzhdanproekt)		1	2-5	6-9	10	10	10	10	10	11	11	11	11	11	11	11
Minsk (MAPID)			1	2-5	6-9	10	10	10	10	10	11	11	11	11	11	11
Minsk (RUE “Belgeologia”)				1	2-5	6-9	10	10	10	10	10	11	11	11	11	11

Stage identification numbers:

- 1 Selection of a site and issuance of a building permit by local authorities
- 2 Geotechnical expertise
- 3 Development of a conceptual building design and calculations of loads on infrastructure networks
- 4 Energy conservation equipment specifications
- 5 Approval of an initial architectural design and technical solutions
- 6 Development of a complete architectural and engineering design
- 7 Detailed project expertise
- 8 Submission of the design documentation to the customer for implementation
- 9 Procurement of energy conservation equipment
- 10 Project construction
- 11 Monitoring of energy performance indicators

П6.4 Project Staff, International and National Consultants

No.	Position	Main duties and responsibilities
Project Implementation Unit		
1	UNDP/GEF Project Manager	Operational Project management in accordance with the Project Document and the UNDP Rules and Procedures: general coordination, control and supervision of Project implementation; assure timely involvement of local and international experts for Project implementation; organization of training and public outreach; of annual Project Implementation Reviews and other required progress reports; supervision and coordination of the contracts to be concluded with the experts recruited for work under the Project; communicating with Project's international partners and attracting additional financing in order to fulfill the Project objectives; execution of other functions to successfully implement the Project subject to the stated objectives, expected outcomes and performance indicators within the planned schedule and budget.
2	Administrative and Financial Assistant	Supporting the Project Manager in the implementation of the Project activities, including: logistics and administrative support of the Project implementation, including administrative management of the Project budget, required procurement support etc.; maintaining the Project business and financial documentation in accordance with UNDP and other project reporting requirements; organizing meetings, project business correspondence and other communication with the Project partners; supporting the Project outreach and PR activities; managing the Projects files and supporting the Project Manager in preparing the required financial and other reports required for monitoring and supervision of the Project progress; supporting the Project Manager in maintain the contracts list, in organizing business correspondence and performing other functions to ensure effective implementation of the Project.
3	PR and Communication Specialist	Supporting the Project Manager in implementing the communication and information strategy of the Project: organizing awareness-raising campaigns; organizing effective distribution of and providing access to the information about Project activities and achieved results for the target audience; formulating and implementing public and medial relations policy; forming and information support of the Project website; cooperating with the Project experts and other stakeholders and organizations for obtaining and disseminating the information in the sphere of the energy efficient buildings; organizing press conferences and other awareness raising activities; preparing press releases, etc.

4	Procurement Specialist	Supporting the Project Manager in performing procurements: formulating Terms of References, nomenclature and specifications of procurements; organizing procurement of services, materials and equipment according to the Work Plan by the Project and its partners addressing contractual, organizational and logistics issues; organizing and holding tenders; monitoring and performing necessary assessments of execution of contractual obligations by contractors.
International Consultants		
5	Building Energy Efficiency Expert	Providing consultancy and guidelines for the Project Implementation Unit, other national experts, developers, designers and other stakeholders on the following issues: (i) strategy for implementation of respective Project activities (ii), most important technical recommendations in using the best European and international designing and construction techniques, norms and standards; (iii) expected outcomes and potential barriers; (iv) support in arranging study tours and workshops abroad and (v) best and effective design solutions for pilot projects. Reviewing and providing conclusions/recommendations on the design documentation prepared by designers and also on construction techniques used by developers.
6	Building Energy Audit Expert	Providing consultations and guidelines for the Project Implementation Unit, other national experts, designers of energy efficient buildings, HPU and energy audit companies and other stakeholders regarding the best European and international practice in the sphere of energy survey methods, methodology and energy audit instruments. Participating in trainings on the energy audit and energy survey of 50 buildings and providing respective analysis, reporting and recommendations.
7	Residential Building Energy Performance Certification Expert	Providing consultations and guidelines for the Project Implementation Unit, other national experts, designers of energy efficient buildings, construction companies, state expertise bodies and other respective stakeholders regarding the best European and international approaches, methods, institutional mechanisms and legal frameworks for the building energy performance certification system. Reviewing and providing conclusions/recommendation regarding respective documents prepared by national experts.
8	Interim/Final Project Execution Assessment Expert	Conducting interim/final Project execution assessment by collecting and analyzing factual data on the Project outcomes and comparing them with goals, targets, set Project scope of work and requirements stipulated in the Project Document. Preparing and submitting a Project Evaluation Report describing ongoing development of the Project and outcomes, proving necessary recommendation for updating the Project implementation strategy and evaluating implementation of Project components and Project as a whole.

National Consultants		
9	Building Energy Performance Expert	Providing consultancy and guidelines for the Project Implementation Unit, other national experts, developers, designers and other stakeholders on the following issues: (i) strategy for implementation of respective Project activities (ii), most important technical recommendations in using the best European and international designing and construction techniques, norms and standards; (iii) expected outcomes and potential barriers; (iv) best and effective design solutions for pilot projects. Reviewing and providing conclusions/recommendations on the design documentation prepared by designers and also on construction techniques used by developers.
10	Building Energy Audit Expert	Providing consultations and guidelines for the Project Implementation Unit, other national experts, designers of energy efficient buildings, HPU and energy audit companies and other stakeholders regarding the best European and international practice in the sphere of energy survey methods, methodology and energy audit instruments. Participating in trainings on the energy audit and energy survey of 50 buildings and providing respective analysis, reporting and recommendations.
11	Expert on methods of collecting and processing data from building energy survey	Providing consultations and guidelines for the Project Implementation Unit, other national experts, designers of energy efficient buildings, HPU and energy audit companies and other stakeholders regarding energy audit methodologies and instruments and data processing methods used. Participating in trainings on the energy audit and energy survey of 50 buildings and providing respective analysis, reporting and recommendations.
12	Building Heat Supply Expert	Providing consultations and guidelines for the Project Implementation Unit, other national experts, designers of energy efficient buildings and other stakeholders regarding as follows: organizing and designing state-of-the-art heating and hot water supply systems; respective calculation methods; conceptual design solutions and development of a package of drawings for pilot projects; expertise and adjustment of working drawings prepared by designers, if required.
13	Expert on Integration of Heat Pumps into Heat and Hot Water Supply Systems in Residential Sector	Providing consultations and guidelines for the Project Implementation Unit, other national experts, designers of energy efficient buildings and other stakeholders regarding as follows: (i) designing heat pump plants; (ii) specifications of equipment and the list of its manufacturers; (iii) heat pump operation and maintenance; (iv) assessing best solutions in the process of designing heat pump systems; (v) respective calculation techniques, conceptual design solutions and development of a package of drawings for pilot projects; (vi) expertise and adjustment of working drawings prepared by designers, if required.

14	Expert on Integration of Solar Collectors into Heat and Hot Water Supply Systems in Residential Sector	Providing consultations and guidelines for the Project Implementation Unit, other national experts, designers of energy efficient buildings and other stakeholders regarding as follows: (i) designing solar heaters (collectors); (ii) specifications of equipment and the list of its manufacturers; (iii) solar collectors operation and maintenance; (iv) assessing best solutions in the process of designing solar heater systems; (v) respective calculation techniques, conceptual design solutions and development of a package of drawings for pilot projects; (vi) expertise and adjustment of working drawings prepared by designers, if required.
15	Expert on Integration of PV panels into Energy Supply Systems in Residential Sector	Providing consultations and guidelines for the Project Implementation Unit, other national experts, designers of energy efficient buildings and other stakeholders regarding as follows: (i) designing PV panels; (ii) specifications of equipment and the list of its manufacturers; (iii) PV panels operation and maintenance; (iv) assessing best solutions in the process of designing PV panels; (v) respective calculation techniques, conceptual design solutions and development of a package of drawings for pilot projects; (vi) expertise and adjustment of working drawings prepared by designers, if required.
16	Expert on Regulatory Documents and Standards in Construction Sector	Providing consultations and guidelines for the Project Implementation Unit, other national experts, designers of energy efficient buildings and other stakeholders regarding norms and standards in the construction industry, building envelope materials. Formulating structural requirements and other respective recommendations and also developing respective new norms and standards, substantiating changes made in the existing technical legal and regulatory acts.
17	Expert on Energy Consumption Norms, Economy and Tariff Policy in Residential Sector	Providing consultations and guidelines for the Project Implementation Unit, other national experts, designers of energy efficient buildings and other respective stakeholders regarding energy and material consumption norms, economic factors, operation parameters and respective tariffs in the residential and public utilities sectors. Conducting surveys to assess economic parameters of pilot buildings and ensure cost effectiveness.
18	Residential Building Energy Performance Certification Expert	Providing consultations and guidelines for the Project Implementation Unit, other national experts, designers of energy efficient buildings, construction companies, state expertise bodies and other respective stakeholders regarding the best approaches, methods, institutional mechanisms and legal frameworks for the building energy performance certification system.

19	Expert on Operation, Upkeep and Maintenance of Residential Buildings	Providing consultations and guidelines for the Project Implementation Unit, other national experts, designers of energy efficient buildings, construction companies, housing and maintenance services, homeowners, tenants and other respective stakeholders regarding the best and cost-efficient methods, technologies, approaches and principles in the field of operation and maintenance of energy efficient residential buildings.
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Annex 7: Inception Workshop Documents

П7.1 Schedule of Meetings Preceding Inception Workshop

Draft Schedule of Meetings

Wednesday, 26 June 2013

18:00 – 19:00	Informal meeting with Mr. Schellhardt and Mr. Galata (Project Office)	Alexandr Zhoresovich GREBENKOV <i>UNDP/GEF Project Manager, Belarus</i>
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Thursday, 27 June 2013

9:00 – 9:30	Rallying (venue to be specified) and transporting to the Project Office (office 502, 21, F. Skorina Str., Minsk)	
9:30 – 9:40	Welcome address	Igor Ivanovich CHULBA <i>Project Coordinator, UNDP Office in Belarus</i>
9:40 – 10:00	Introducing the Project Team: Grebenkov (Project Manager) Huk (Administrative Assistant) Galata (International Expert) Schellhardt (International Expert) Danilevsky (Local Expert) Molochko (Local Expert) Sokolovsky (Local Expert) Pilipenko (Local Expert)	Igor Ivanovich CHULBA <i>Project Coordinator, UNDP Office in Belarus</i> All Project participants
10:00 – 10:20	Status of the works under the Project according to the Annual Work Plan for 2103	Alexandr Zhoresovich GREBENKOV <i>UNDP/GEF Project Manager, Belarus</i> Leonid Nikolaevich DANILEVSKY <i>National Project Consultant, NIPTIS, Belarus</i>
10:20 – 10:40	Preliminary results of the Inception Phase works under the Project. Inception Workshop objectives and agenda	Alexandr Zhoresovich GREBENKOV <i>UNDP/GEF Project Manager, Belarus</i>

10:40 – 11:00	Abstracts of presentations prepared for the Inception Workshop and their discussion: Grebenkov (Project Manager) Galata (International Expert) Schellhardt (International Expert) Danilevsky (Local Expert) Molochko (Local Expert) Sokolovsky (Local Expert) Pilipenko (Local Expert)	Alexandr Zhoresovich GREBENKOV <i>UNDP/GEF Project Manager, Belarus</i> All Project participants
11:00 – 11:20	Coffee break	
11:20 – 11:40	Discussion of respective adjustments in approaches to the Project implementation based on the Inception Phase results	Alexandr Zhoresovich GREBENKOV <i>UNDP/GEF Project Manager, Belarus</i> Leonid Nikolaevich DANILEVSKY <i>National Project Consultant, NIPTIS, Belarus</i>
11:40 – 12:00	Transporting Workshop participants to the Office of the Department on Energy Efficiency (office 815, 17, Svobody Square, Minsk)	
12:00 – 13:00	Meeting with Andrei Minenkov, National Project Director. Discussing proposals on respective adjustments in approaches to the Project implementation based on the results of the Inception Phase	Andrei Vladimirovich MINENKOV <i>National Project Director, Department on Energy Efficiency under Gosstandart of the Republic of Belarus</i>
13:00 – 14:30	Lunch. Transporting Workshop participants to the Ministry of Architecture and Construction (39, Myasnikova Str., Minsk)	
14:30 – 15:00	Meeting with the Deputy Minister of Architecture and Construction. Presenting the Project and adjustments based on the results of the Inception Phase	Alexandr Zhoresovich GREBENKOV <i>UNDP/GEF Project Manager, Belarus</i> Leonid Nikolaevich DANILEVSKY <i>National Project Consultant, NIPTIS, Belarus</i>
15:00 – 15:30	Transporting Workshop participants to OJSC MAPID (205, Rozy Luxemburg Str., Minsk)	

15:30 – 16:00	Meeting with the company management. Latest information on the schedule of designing and construction of the pilot project	Leonid Nikolaevich DANILEVSKY <i>National Project Consultant, NIPTIS, Belarus</i>
16:00 – 16:30	Transporting Workshop participants to the multi-storey energy efficient residential building (107, Pritytskogo Str., Minsk)	
16:30 – 17:30	Visiting and inspecting the first energy efficient residential building in Minsk	Leonid Nikolaevich DANILEVSKY <i>National Project Consultant, NIPTIS, Belarus</i>
17:30 – 18:00	Transporting Workshop participants to the place of residence	

П7.2 Letter of Invitation from the UNDP/GEF Project Office

Проект Программы развития ООН
и Департамента по энергоэффективности
Государственного Комитета по
стандартизации Республики Беларусь

Повышение энергетической
эффективности в жилых зданиях
Республики Беларусь

ул. Франциска Скорины, 21, офис No.
502, Минск, 220114, Belarus

Тел. (37529) 396-2784
e-mail: natallia.huk@undp.org



Project of the UN Development Programme
and the Department for Energy Efficiency of
the State Standardization Committee
of the Republic of Belarus

Improving Energy Efficiency
in Residential Buildings
in the Republic of Belarus

office 502, 21 Francisc Skorina Str.,
220114 Minsk, Belarus

Тел. (37529) 396-2784
e-mail: natallia.huk@undp.org

20.06.2013 **No.** 2/2013

Dear Sirs,

Re: Invitation to the UNDP/GEF Project Inception Workshop

You are kindly invited to participate in the Inception Workshop of the joint international Project “**Improving Energy Efficiency in Residential Buildings in the Republic of Belarus**”, UN Development Program and Global Environment Facility.

The Workshop is organized by the Project Office and Department on Energy Efficiency under Gosstandart of the Republic of Belarus and is to be held in Minsk **28 June 2013**. Please, see the Workshop Program **in the Annex**.

The aim of this Workshop is to exchange opinions on the issues of construction and operation of energy efficient residential buildings, discuss construction sector development programs and receive an overview of Project activities designed to promote removal of existing barriers to improve energy efficiency in the residential sector. The Workshop is targeted at decision-makers responsible for respective areas of activity in the republican bodies of state administration and in Regional Executive Committees, specialists of enterprises, organizations and companies involved in the process of preparing, financing and implementing energy-efficient building construction activities.

You are kindly requested to send the information about tentative Workshop participants before **26 June 2013** by fax # (017) 396-27-84 or e-mail natallia.huk@undp.org specifying a full name, a position, a contact telephone number and/or an e-mail address.

Project Manager

A handwritten signature in blue ink, appearing to read 'A.ZH. Grebenkov', is written over a light blue horizontal line.

A.ZH. Grebenkov

П7.3 Letter of Invitation from the National Executing Agency

Dear Sirs,

Re: Holding the Inception Workshop and Meeting of the UNDP/GEF Project National Steering Committee

We would like to inform you that the Ministry of Economy of the Republic of Belarus registered the Project “Improving Energy Efficiency in Residential Buildings in the Republic of Belarus” (hereinafter referred to as the “Project”) 10 August 2012 in the database of programs and projects of international technical assistance (Registration Number 2/12/000558). The Project implementation timeframe: 10 August 2012 – 31 December 2016.

The Project Document provides for that the Department on Energy Efficiency under State Committee on Standardization of the Republic of Belarus is to be responsible for the Project implementation. The Project Document also provides for establishment of the National Steering Committee (hereinafter referred to as the “Board”) which is to monitor the Project implementation, guide its activities and provide support to it in implementing targeted outcomes. This Board has been established based on the written requests of the organizations concerned (List is attached).

You are kindly requested to appoint a Board member from your organization as a participant of the Project Inception Workshop and the Board Meeting to be held 28 June 2013 in Minsk. The aim of the Workshop is to exchange opinions on the issues of construction and operation of energy efficient residential buildings, discuss construction sector development programs and receive an overview of Project activities designed to promote removal of existing barriers to improve energy efficiency in the residential sector.

Following the Inception Workshop, the Board Meeting will be held at 14:30 28 June 2013, in the Conference Hall, Hotel “Victoria” (address: 2nd floor, 59, Pobeditelei Ave., Minsk). The Board Meeting agenda includes the following items:

1. Reviewing UNDP/GEF Project implementation progress according to the Work Plan for 2013.
2. Discussing the issues of the pilot project implementation – construction of the energy efficient residential building - the developer of which according to the Project Document acts the Ministry of Natural Resources and Environmental Protection Republic of Belarus and approving pilot energy-efficient building projects.
3. Making a decision regarding the selection of the leading design organization for developing construction documentation in a part of energy efficient measures for pilot projects.
4. Miscellaneous.

Please, confirm (by phone +375 17 396 27 84/85) participation of the Board member in the above activities not later than 26 June 2013.

Gosstandart Deputy Chairman
Department Director

S.A. Semashko

П7.4 Workshop Agenda

UNITED NATIONS DEVELOPMENT PROGRAM

UNDP/GEF Project “Improvement of Energy Efficiency in Residential Buildings in the Republic of Belarus”

DEPARTMENT ON ENERGY EFFICIENCY UNDER STATE COMMITTEE
ON STANDARDIZATION OF THE
REPUBLIC OF BELARUS



Project Inception Workshop

Workshop date: Friday, 28 June 2013

Workshop Venue: Hotel “Victoria”, Conference Hall, 2nd Floor, 59, Pobeditelei Ave., Minsk, Belarus

Workshop Program

9:00 – 9:30	Registration of participants	
9:30 – 9:40	Workshop opening. Welcome address.	Sergei Alexandrovich SEMASHKO <i>Deputy Chairman, State Committee on Standardization of the Republic of Belarus - Director, Department on Energy Efficiency</i> Igor Ivanovich CHULBA <i>Project Coordinator, UNDP Office in Belarus</i>
9:40 – 10:00	Project presentation: objectives and expected outcomes	Alexandr Zhoresovich GREBENKOV <i>UNDP/GEF Project Manager, Belarus</i>
10:00 – 10:20	Integrated energy indicators for residential buildings: European legal and regulatory acts and best practice	Alexander Schellhardt <i>Project International Consultant,</i> <i>Ingenieurgesellschaft BBP Bauconsulting mbH, Germany</i>
10:20 – 10:40	Modern legislation and institutional frameworks for improving energy efficiency in the residential sector in Belarus	Alexandr Zhoresovich GREBENKOV <i>UNDP/GEF Project Manager, Belarus</i>

10:40 – 11:00	The best practice in designing and construction of envelopes, HVAC systems, in the use of renewable energy sources and other technologies for improving energy efficiency in residential buildings	Alexander Schellhardt <i>Project International Consultant, Ingenieurgesellschaft BBP Bauconsulting mbH, Germany</i>
11:00 – 11:20	Break	
11:20 – 11:40	Technical solution options and existing practice for improving energy efficiency in different categories of residential buildings in Belarus	Leonid Nikolaevich DANILEVSKY <i>Project National Consultant, NIPTIS, Belarus</i>
11:40 – 12:00	Technical legal and regulatory acts, construction techniques and materials used in the Belarusian residential construction sector	Leonid Victorovich SOKOLOVSKY <i>Project National Consultant, Company ATEC, Belarus</i>
12:00 – 12:20	Internationally recognized best methodologies and practice for monitoring and calculation of integrated energy indicators and the International Protocol of indicator monitoring and verification applicable to residential buildings	Alfio GALATA <i>Project International Consultant, AGsaving Srl, Italy</i>
12:20 – 12:40	Existing practice for conducting energy surveys of residential buildings in Belarus and its distinction from the best international practice	Andrei Fedorovich MOLOCHKO <i>Project National Consultant, Belarusian Thermal Power Institute, Belarus</i>
12:40 – 13:00	Tariff policy and energy consumption norms and their improvement to stimulate energy efficiency in the residential sector in Belarus	Vladimir Mitrofanovich PILIPENKO <i>Project National Consultant, NIPTIS, Belarus</i>
13:00 – 13:10	Proposals for the respective adjustment in Project activities based on results of the Project Inception Phase	Alexandr Zhoresovich GREBENKOV <i>UNDP/GEF Project Manager, Belarus</i>
13:10 – 13:30	Discussions	
13:30	Closing of the Workshop	

П7.5 List of Participants

LIST

Participants of the Inception Workshop of the UNDP/GEF Project
“Improving Energy Efficiency in Residential Buildings in the
Republic of Belarus”

28 June 2013

	Full name	Position
1	Andreenko Natalia Alexandrovna	Expert on Environmental Projects, IPA “Ecopartnership”
2	Bernard Schwarz	Project Manager, Housing Initiative for Eastern Europe
3	Burenkin Dmitry Sergeevich	Energy Program Officer, “Center of Ecological Solutions”
4	Valui Olga Dmitrievna	Chief Specialist, UE “Institute Grodnograzhdanproekt»”
5	Galata Alfio	International Expert on Energy Audit in Buildings / Project International Consultant, AGsaving Srl, Italy
6	Gapontsev Vadim Evgenievich	Chief Technologist, OJSC “MAPID”
7	Gakhovich Anton	Consultant on Resources and Energy Conservation, “Center of Ecological Solutions”
8	Grebenkov Alexandr Zhoresovich	UNDP/GEF Project Manager
9	Gritsenko Inna Vasilievna	Expert on Finance
10	Huk Natallia Georgievna	UNDP/GEF Project Manager Administrative and Financial Assistant
11	Guminsky Yuri Petrovich	First Deputy Director General, Minsk Region Housing and Public Utilities Services
12	Gurin Victor Mikhailovich	Deputy Director on Construction, JCJSC “International Energy Center”
13	Danilevsky Leonid Nikolaevich	National Expert on Energy Efficiency in Buildings

	Full name	Position
14	Dudnichenko Dmitry Vasilievich	Chief Architect, Mogilev Region
15	Karbalevich Nina Alexandrovna	Assistant Professor, Energy-Physics Chair, BSU, Department of Physics
16	Katsynel Ryshard Bronislavovich	Chief Engineer, UE “Institute Grodnograzhdanproekt”
17	Korchinsky Sergei Alexandrovich	Director, JCJSC “International Energy Center”
18	Kresova Elena Vladimirovna	International State Ecological University named after A.D. Sakharov
19	Kundas Semen Petrovich	Rector, International State Ecological University named after A.D. Sakharov
20	Malievskaya Tatiana Petrovna	Head, Economics and Investment Activity Division, Department on Energy Efficiency, State Committee on Standardization of the Republic of Belarus
21	Mas Andrei Ivanovich	Director, Private Production and Trading Unitary Enterprise “AlanStroi”
22	Matyukhov Andrei Vladimirovich	Housing Authority, Ministry of Housing and Utilities of the Republic of Belarus
23	Minenkov Andrei Vladimirovich	Head, Division of Scientific and Technical Policy and Foreign Economic Relations, Department on Energy Efficiency under State Committee on Standardization of the Republic of Belarus
24	Mironov Sergei Anatolievich	Assistant Director, RUE SPC on Geology, Ministry of Natural Resources and Environmental Protection of the Republic of Belarus
25	Mikhalevich Alexandr Alexandrovich	Corresponding Member of the Academy of Sciences of Belarus, D Sc. in Engineering, Professor
26	Molochko Andrei Fedorovich	National Expert on Energy Audit in Buildings
27	Pilipenko Vladimir Mitrofanovich	Director, SE “Institute of Housing - NIPTIS named after S.S. Ataev”
28	Sakovich D.V.	Engineer, SE “Energy Efficiency” Laboratory, NASB Energy Institute

	Full name	Position
29	Semashko Sergei Alexandrovich	Deputy Chairman, Gosstandart, Director, Department on Energy Efficiency, State Committee on Standardization of the Republic of Belarus
30	Sokolovsky Leonid Victorovich	National Expert on Norms and Standards in Construction Sector
31	Stanyuta Dmitry Alexandrovich	Editor, Journal "Energy Efficiency"
32	Tur Igor Vladimirovich	Head, Minsk City Department for Supervision over the Fuel and Energy Resources Rational Use
33	Turov Vyacheslav Nikolaevich	First Deputy Director General, OJSC "MAPID"
34	Tsybulnikov Alexandr Vasilievich	Director, UE "Institute Grodnograzhdanproekt"
35	Chulba Igor Ivanovich	UNDP Project Coordinator in the Republic of Belarus
36	Chura Lyudmila Mikhailovna	Head, State Construction Supervision Division, Department on Construction Control and Supervision, Gosstandart
37	Alexander Schellhardt	International Expert on Energy Efficiency in Buildings / Project International Consultant, Ingenieurgesellschaft BBP Bauconsulting mbH, Germany
38	Shnitovsky Fedor Evgenievich	Deputy Head on Information and Analytical Work, Department on Energy Efficiency, State Committee on Standardization of the Republic of Belarus
39	Yaroshevsky Vitaly Valentinovich	Center of Technical Rate Setting and Standardization, RUE "Stroitekhnorm"
40	Petrov Nikolai Yurievich	Interpreter, UNDP
41	Tribulev Evgeny Borisovich	Interpreter, UNDP

Annex 8: Minutes of the Second NSC Meeting

П8.1 Minutes of the Meeting

UNDP/GEF Project No.00077154

“Improving Energy Efficiency in Residential Buildings in the
Republic of Belarus”

Steering Committee Meeting

MEETING No.2 MINUTES

Meeting date: 28 June 2013

Meeting Venue: Conference Hall, Hotel “Victoria” (2nd floor),
59, Pobeditelei Ave., Minsk.

Agenda:

1. Opening the Second Meeting of the Steering Committee
2. UNDP/GEF Project implementation progress according to the Work Plan for 2013.
3. The status of the issue of the pilot project for construction of the energy efficient residential building the developer of which, according to the Project Document, acts the Ministry of Natural Resources and Environmental Protection of the Republic of Belarus.
4. Taking a decision regarding the selection of a leading design organization for developing the construction documentation in a part of implementing energy efficiency activities for pilot projects.
5. Miscellaneous.

Present:

Steering Committee members:

1. Semashko Sergei Alexandrovich, Deputy Chairman, Gosstandart, Director, Department on Energy Efficiency under the State Committee on Standardization of the Republic of Belarus;
2. Minenkov Andrei Vladimirovich, Head, Division of Scientific and Technical Policy and Foreign Economic Relations, Department on Energy Efficiency under the State Committee on Standardization of the Republic of Belarus, National Project Director;
3. Katsynel Ryshard Bronislavovich, Chief Engineer, UE “Institute Grodnograzhdanproekt”;
4. Malievskaya Tatiana Petrovna, Head, Economics and Investment Activity Division, Department on Energy Efficiency under the State Committee on Standardization of the Republic of Belarus;
5. Pilipenko Vladimir Mitrofanovich, Director, SE “Institute of Housing - NIPTIS named after S.S. Ataev”;

6. Turov Vyacheslav Nikolaevich, First Deputy Director General, OJSC “MAPID”;
 7. Chulba Igor Ivanovich, UNDP Project Coordinator in the Republic of Belarus.
- UNDP/GEF Project members present:

1. Grebenkov Alexandr Zhoresovich, Project Manager;
2. Huk Natallia Georgievna, Project Manager Assistant (Minutes Taker).

Present by invitation:

1. Yaroshevsky Vitaly Valentinovich, Head, Technical Department, RUE “Stroitekhnorm”;
2. Mironov Sergei Anatolievich, Assistant Director, Representative of the Ministry of Natural Resources and Environmental Protection;
3. Tsybulnikov Alexandr Vasilievich, Director, UE “Institute Grodnograzhdanproekt”;
4. Korchinsky Sergei Alexandrovich, Director, JCJSC “International Energy Center”;
5. Dudnichenko Dmitry Vasilievich, Chief Architect, Mogilev Region;
6. Danilevsky Leonid Nikolaevich, Project National Expert on Energy Efficiency in Buildings.

Under Agenda Item 1 Minenkov A.V. opened the Meeting of the Steering Committee (hereinafter referred to as the “PSC”). He outlined the agenda for PSC members and gave the floor to Grebenkov A.Zh.

Under Agenda Item 2 Grebenkov A.Zh. briefed on the Project results in the 1st half of 2013. It was stated regarding the Section 1 of the Work Plan for 2013 that the work to analyze and assess the best European and other internationally recognized methodologies and practices to monitor integrated energy characteristics and calculations applied to different building types were at the completion stage. Recommendations and methodological guidelines for improving services for conducting energy audits in residential buildings based on analysis of the available international and national practices of conducting energy audits in residential buildings were presented. Recommendations are available in the Russian and English languages. As regards Section 2, the work was executed for specifying Terms of Reference for international and national consultants in terms of monitoring and cooperation with other international initiatives related to energy efficient and environmentally sound construction and residential building operation. As regards Section 3, a List of Activities to implement demonstration projects was compiled with respect to 2 sites jointly with “Grodnograzhdanproekt” and OJSC “MAPID”. At this stage, there exists an urgent need to identify a design organization to be recruited to develop a construction design of demonstration buildings using principles of integrated design solutions and with consideration for new technologies of energy efficient building erection. As to Section 4, the Inception Workshop was held and its materials would be used to prepare a report and a brochure. Upon request of Minenkov A.V., the Project Manager pointed out that to date problematic issues concerning the Project implementation are as follows: minor delay in recruiting the PR and Communication Specialist. The reason resided in the fact that actions related to recruiting that specialist were agreed with the UNDP/GEF Project “Development of Integrated Approaches to Management of Wetlands Accounting Principles of Multipurpose Landscape Planning to Obtain Multiple Environmental Benefits” the staff member of which he/she would be also considered. Problems are also available regarding the demonstration project sites, this problem is to be discussed under the Agenda Item 3 of the today’s PSC Meeting.

Resolved under Agenda Item 2:

- to take note of the results of the work under the Project for the first half of 2013;

- to draw attention of the Project Management Unit to the need to speed up staffing of the Unit with national experts on public relations and tariff policy in order to finalize the expert composition in July this year.

Then, **Under Agenda Item 3**, the floor was given to Tsybulnikov A. V., Director, UE “Institute Grodnograzhdanproekt”. In his speech, he pointed out that currently a building with technologies integrated into it to improve energy efficiency successfully operates in Grodno, with 89 apartments being accommodated by the Institute employees. This fact proves that knowing rules of operation of the special equipment and instruments by the tenants is a key to their further successful use in mass construction of similar buildings. However, there also exist not so successful examples, while Semashko S.A. noted that a negative experience is also a useful experience, like, for example, in Vitebsk. The Institute Director further informed the audience that systems of exhaust air heat recovery, solar heat use had been improved and put into operation, and technologies for improving tightness and thermal insulation of the building envelope had been also applied. As regards implementation of the demonstration building under the Project, he requested the PSC to speed up the development and integration of a component which is aimed to improve the energy efficiency of the to-be-constructed building into the Project.

Turov V.N., representative of OJSC “MAPID”, spoke on the subject under Agenda Item 3. He suggested that in case the Minsk Municipal Executive Committee would not make a positive decision regarding a planned site in Malinovka, the meeting to deal with that issue should be held today and MAPID would request the Department on Energy Efficiency to provide support. Semashko S.A. promised to provide overall assistance in making that decision. Turov V.N. also underlined that it was possible to use other sites for achieving Project objectives.

Then, the floor was given to Mironov S.A. to report on the state of affairs regarding the construction of a pilot energy efficient residential building the developer of which according to the Project document was the Ministry of Natural Resources and Environmental Protection Republic of Belarus. Mironov S.A. informed the PSC meeting participants that that question was under the personal control of Tsalko V.G., Minister of Natural Resources and Environmental Protection of the Republic of Belarus. He explained that within the Project implementation framework, selection of the project construction site had to be finalized before the 4th quarter of the year, when according to the Project Plan, development of the construction documentation should be commenced. The demonstration project is likely to be located at the following address: 117, Geologicheskaya Str. Earlier, that site was occupied by the RUE “Belgeologia” production facilities which are currently being moved to some other place. Available communications and networks required for construction of a residential building and water supply are advantages of this site. He also pointed out that JCJSC “International Energy Center” proposed to combine efforts for construction of a pilot building and due to that, a meeting with the Minister to discuss and arrange all aspects of cooperation between the Ministry of Natural Resources and Environmental Protection and JCJSC “International Energy Center” was scheduled. Grebenkov A.Zh. pointed out that to date, a written confirmation of the intentions of the Ministry of Natural Resources and Environmental Protection to be involved in the Project implementation was not available in the Project documents, while the available letter from the RUE “Belgeologia” contained the outdated information which no longer covered all urgent issues. The representative of the Ministry of Natural Resources and Environmental Protection promised that a respective letter would be send to the UNDP immediately after the meeting with the Minister, but not later than next week Friday. In this connection, Grebenkov A.Zh. pointed out that it was extremely important to specify all necessary configurations of that Project in the letter: financing, building type, functions of participants (customers, general contractor, subcontractor, etc.). Chulba I.I. also explained that in the light of combining efforts of the Ministry of Natural Resources and Environmental Protection and JCJSC “International Energy Center”, it was important to understand that a partnership of those organizations should not result in the change of the Project Document and could be executed in the form of a Memorandum between those two

organizations. In conclusion, Mironov S.A. noted that the Ministry of Natural Resources and Environmental Protection was still a Project participant.

Chulba I.I. took the floor saying that in selecting the demonstration building project, the Project Document requirements should be considered with respect to an environmental aspect, i.e. greenhouse gas emission reduction indicators should not be lower than those planned. If a to-be-constructed building demonstrates unique indicators, the problem may arise of using this experience as a template for further replication of results.

Minenkov A.V. gave to floor to Korchinsky S.A., Director JCJSC “International Energy Center”. The IEC Director expressed the wish to become a Project co-partner in the light of developing relations with the Ministry of Natural Resources and Environmental Protection. He pointed out that integration of JCJSC “International Energy Center” into the Project as a partner would help select an optimal site for the demonstration building construction jointly with the Ministry of Natural Resources and Environmental Protection. Chulba I.I. pointed out that according to the Project Document, specifically the Ministry of Natural Resources and Environmental Protection was a Project partner and making amendments or addenda in the Project Document was highly undesirable. Grebenkov A.Zh. expressed his opinion on that issue saying that a proposed site in Stepyanka (117, Geologicheskaya Str.) did not fully meet all necessary requirements for the demonstration project.

The floor was also given under Agenda Item 3 to Dudnichenko D.V., Mogilev Region Chief Architect, who was invited to the PSC meeting to present an alternative demonstration project. The representative of Mogilev Region expressed interest in participating in the given project and further pointed out that the Mogilev Regional Executive Committee proposed to construct a residential building in Mogilev as an alternative demonstration project reasoning that not a single residential building designed using new energy-efficient standards had been constructed in the city. An approved site is available for the proposed project and SE “Institute of Housing - NIPTIS named after S.S. Ataev” (hereinafter referred to as the “NIPTIS”) was invited for designing. Minenkov A.V. pointed out that an alternative could be considered, provided that the Ministry of Natural Resources and Environmental Protection was not ready to further participate in the Project implementation. Chulba I.I., in his response to the readiness of the Mogilev Region to joint the Project, stated that the Project was yet ready to finance the 4th demonstration facility, however it could review that proposal as an alternative option. At the same time, an opportunity of inviting Mogilev officials to participate in the Project activities such as trainings, workshops, etc. is quite feasible.

Resolved under Agenda Item 3:

– The Ministry of Natural Resources and Environmental Protection is to review the options of cooperation with JCJSC “International Energy Center”. It is to prepare and send a respective letter to the UNDP informing about the degree of readiness of the construction project and specifying all configurations not later than 5 July 2013.

Then, the floor was given to Katsynel R.B. He thanked for the Project Inception Workshop held and made a proposal to distribute the materials presented at the Workshop among its all participants. He once more pointed out that it was extremely important to raise awareness of all stakeholders, including the general public regarding achievements in the sphere of energy efficient residential construction to promote a positive attitude towards that topic. Given the experience gained in construction of energy efficient residential buildings in Grodno Region, Katsynel R.B. expressed confidence that the building constructed under the Project would be successful and serve as a fine example for further introduction of energy efficiency-improving technologies. To date, the UE “Institute Grodnograzhdanproekt” finalized preparation of the construction documentation and its part related to improvement of energy efficiency needs to be further developed. This issue needs to be solved as soon as possible due to the fact that the next step subject to legislation is submission of the ready design for the expert examination during

which the project cost will be also approved. Currently, experts are not available to perform this assignment, and as result, issuance of an expert opinion may be delayed. Dealing with that issue, Pilipenko V.M. explained that the NIPTIS specialists as designers of innovative projects gained a positive experience in addressing the given issue and might share it. Semashko S.A. confirmed the possibility to find the way out of that situation by arranging consultations with expert organizations at the Department level.

Therefore, the PSC members proceeded to a discussion of **Agenda Item 4**. Grebenkov A.Zh. explained that several techniques are available to recruit a design organization to prepare a part of the construction documentation for construction of demonstration buildings using principles of improving energy efficiency. As it was said, a design organization may be selected through a competitive process (holding a tender), conclusion of a direct contract (in case such an organization is the only one and has no competitors in that area) and through conclusion of an agreement on advancing Project funds to the National Executing Agency for executing Project activities (national execution formula, the so-called NEX approach). Grebenkov A.Zh. pointed out that NIPTIS was the most preferable organization with which a designing contract might be concluded. That organization had experience in performing a similar project for construction of energy efficient buildings in Kazakhstan which was presently in its final stage and demonstrated excellent results. When recruited to implement the Project “Removing Barriers to Energy Efficiency in Municipal Heat and Hot Water Supply”, NIPTIS proved itself to be the most competent organization in developing innovative solutions for construction of the state-of-the-art technology-based energy efficient buildings.

Dealing with that issue, Chulba I.I. pointed out that according to the UNDP procedures, to activate a fund advancing mechanism, the PSC should take a decision to recommend a particular organization for national execution of the Project Work Plan items. In the given case, NIPTIS could act as such an organization and it also confirmed a positive appraisal of the NIPTIS work in executing a friendly project in the Republic of Kazakhstan. Semashko S.A. requested NIPTIS to comment on that proposal and give specific guarantees for execution of Item 3 of the Project Work Plan for 2013 in a part of designing an innovative construction project meeting all requirements of the Project Document. Pilipenko V.M., NIPTIS Director, expressed his view underlining that all pilot projects developed by the organization had been successfully implemented and undoubtedly enriched the organization’s experience in developing such documents. Presently, as Minenkov A.V. noted, NIPTIS was a parent organization responsible for elaboration and support of the National Scientific and Technical Program “Construction Materials and Technologies”, a basic institution conducting research and development of innovative structural and technological systems of buildings and structures, developing energy efficient engineering systems and elaborating and supporting the State Sectoral Program “Energy Saving”.

Chulba I.I. briefed the Meeting attendees on the algorithms of advancing funds under the procedure of national execution of the Project Plan Items pointing out that the bidding organization should be subjected to a respective evaluation of its potential. For this purpose, an independent audit company needs to be hired that would take at least 3 weeks, an in case of a positive audit opinion, an agreement is to be signed, a detailed Work Plan is to be approved and an advance for execution of works during the quarter (3 months) is to be paid. Semashko S.A. supported conclusion of the agreement for national execution of the Project Plan Items with NIPTIS.

Resolved under Agenda Item 4:

- to recommend involvement of the SE “Institute of Housing – NIPTIS named after Ataev S.S.” in the procedure for national execution of the Project Plan Items by concluding an agreement for advancing Project funds provided for in Item 3.

Under Agenda Item 5 Chulba I.I. expressed gratitude to NIPTIS for the premises provided to

accommodate the Project Management Unit.

National Project Director, Head
Division of Scientific and Technical Policy
and Foreign Economic Relations
Department on Energy Efficiency
State Committee on Standardization
Republic of Belarus

A.V.Minenkov

UNDP Project Coordinator

_____ I.I. Chulba

UNDP/GEF Project Manager

_____ A.Zh. Grebenkov

П8.2 Annual Detailed Work Plan 2013

APPROVED BY:
Deputy Resident Representative
UNDP Belarus

_____ F. Karakhanov

Date "___" _____ 2013

APPROVED BY:
National Project Director
ProjectNo.00077154

_____ A. Minenkov

Date "___" _____ 2013

Annual Detailed Work Plan 2013									
Improving Energy Efficiency in Residential Buildings in the Republic of Belarus									
No. 00077154									
Activity description	Output costs as per budget accounts, US\$				Total US\$	Donor	Budget Account	Responsible	Annual Target
	I - 2013	II - 2013	III - 2013	IV - 2013					
Outcome 1: Strengthened legal and regulatory framework and mechanisms to enforce the legislation for improving the energy efficiency of the building sector with the focus on new residential buildings									
1.1	A formally adopted and endorsed methodology for buildings' energy performance monitoring and calculation in line with contemporary European norms or other applicable international standards.						Project Manager	Formally adopted methodological guidelines for integrated energy performance monitoring and calculation of residential buildings.	
1.1.1	Develop methodological guidelines for integrated energy performance monitoring and calculation applicable to different types of residential buildings:							A report and a draft of methodological guidelines for buildings' integrated energy performance monitoring and calculations submitted to the EE Department and published. Deadline - August 31, 2013.	
1.1.1.1	Conduct a critical analysis and evaluate the best European and other internationally recognized methodologies and practices for integrated energy performance monitoring and calculation applicable to							A report approved by the EE Department and published online, on the results of critical analysis of existing methodologies and practices for buildings' integrated energy performance monitoring	
		4,000			4,000	GEF	71,200 - international consultants		
		960			960	GEF	71,300 - national consultants		

different types of residential buildings



and calculations. Deadline - May 31, 2013.

		1,200		1,200	GEF	71,300 - national consultants (translation)		
1.1.1.2	Draft methodological guidelines on energy performance monitoring and calculation for residential buildings	4,000		4,000	GEF	71,200 - international consultants		First draft of methodological guidelines prepared. Deadline - June 30, 2013.
		960		960	GEF	71,300 - national consultants		
1.1.1.3	Organize a round table (ad-hoc meeting) on residential buildings' energy performance monitoring and calculation methodologies and practices	720		720	GEF	71,300 - national consultants		At least 15 representatives of stakeholders attended the round table and a respective Minutes with recommendations prepared. Deadline - July 15, 2013.
		600		600	GEF	72,100 - contract serv.companies		
1.1.1.4	With a view of stakeholders' comments after ad-hoc discussions during activity 1.1.1.3, revise the draft guidelines prepared as per activity 1.1.1.2 on energy performance monitoring and calculation for residential buildings and submit the guidelines for adoption	3,000		3,000	GEF	71,200 - international consultants		Revised guidelines submitted to the EE Department and the Ministry of Architecture and Construction. Deadline - August 31, 2013.
		840		840	GEF	71,300 - national consultants		
1.1.2	Provide on-going consulting services with regard to the submitted guidelines directly to the EE Department, Ministry of Architecture and Construction and other relevant authorities in the course of conciliation and adoption procedures.		960	960	GEF	71,300 - national consultants		The guidelines endorsed by the EE Department and the Ministry of Architecture and Construction, and adopted by competent authority(ies). Deadline - December 31, 2013.
1.2	At least 50 completed energy audits providing information on factual energy consumption and energy balance of different types of existing residential buildings of different age and using different construction techniques.						Project Manager	Energy audits of at least 5 residential buildings organized and conducted.

1.2.1	Develop guidelines for energy audit in residential buildings based on the best domestic and international practices.						Guidelines for energy audits of residential buildings developed by the EE Department and the Ministry of Energy published online. Deadline - November 2012
1.2.1.1	<i>Conduct a critical analysis of existing international and domestic practices for energy audit in residential buildings and determine gaps between the domestic and the best international practices.</i>	4,000		4,000	GEF	71,200 - international consultants	A report, approved by the EE Department and the Ministry of Energy, of critical analysis of existing practices. Deadline - May 31, 2013
		960		960	GEF	71,300 - local consultants	
1.2.1.2	<i>Provide recommendations and draft guidelines, based on the analysis as per activity 1.2.1.1 above, for improvement of energy audit services in residential buildings in Belarus.</i>	6,000		6,000	GEF	71,200 - international consultants	Recommendations concerning improvement of energy audit services and draft of guidelines for energy audits developed by the EE Department and the Ministry of Energy. Deadline - June 30, 2013
		960		960	GEF	71,300 - local consultants	
		1,200		1,200	GEF	71,300 - local consultants (translation)	
1.2.1.3	<i>Prepare and approve action plans, equipment specifications and equipment procurement plans for energy auditing residential buildings of different age and construction techniques.</i>	840		840	GEF	71,300 - local consultants	Action plans, equipment specifications and equipment procurement plans for energy audits in residential buildings developed by the EE Department. Deadline - June 30, 2013
1.2.1.4	<i>Acquire equipment needed for the energy audits as per the procurement plans stipulated under activity 1.2.1.3.</i>		55,000	55,000	GEF	72,300 - Equipment	PMU Procurement Expert The equipment necessary for energy audits acquired by the energy audit company selected to conduct audits. Deadline - Sep 30, 2013

1.2.1.5	Conduct energy audits of at least 5 residential buildings in line of the plans approved under activity 1.2.1.3		7,500	7,500	GEF	71,200 - international consultants		Energy audits of at least 5 residential buildings conducted and respective reports submitted to stakeholders. Deadline - Oct 31, 2013
			2,400	2,400	GEF	71,300 - national consultants		
			15,000	15,000	GEF	72,100 - contract serv.companies		
			660	660	GEF	71,600 - travels		
1.2.1.6	Based on the results of activity 1.2.1.5 above, update guidelines for improvement of energy audit services in residential buildings in Belarus		4,000	4,000	GEF	71,200 - international consultants		Revised guidelines for improvement of energy audits in residential buildings submitted to the EE Department and the Ministry of Architecture and Construction. Deadline - Nov 30, 2013
			840	840	GEF	71,300 - national consultants		
1.2.2	Based on the results of activity 1.2.1, prepare a curriculum and training materials for technical training workshops on energy audit of residential buildings, and publish them online and offline.		7,000	7,000	GEF	71,200 - international consultants		Training course containing materials (lectures, presentations) and a curriculum on energy audit of residential buildings prepared and published online and offline. Deadline - Dec 15, 2013
			960	960	GEF	71,300 - national consultants		
			1,200	1,200	GEF	71,300 - national consultants (translation)		
			1,800	1,800	GEF	74,200 - аудио-видео продукция		
1.2.3	Organize a 2-day training workshop for national experts and local energy auditing firms to improve their capacity in energy audit of residential buildings.		6,000	6,000	GEF	72,100 - contract serv.companies	PMU PR-expert	A two-day training for ca. 60 energy auditors organized and held. Deadline - Dec 31, 2013
			720	720	GEF	71,300 - national consultants		
			1,320	1,320	GEF	71,600 - travels		
			5,000	5,000	GEF	71,200 - international consultants		

		420	420	GEF	71,300 - national consultants (translation)		
1.3	A completed review and cost-efficiency analysis of different technical options to improve buildings' energy efficiency and the use of renewable energy sources, including an analysis of the cost-efficiency of different heat supply and distribution methods to serve low or close to zero energy buildings.					Project Manager	A report, approved by the EE Department and published online, containing the results of cost-efficiency analysis of different technical options to improve buildings' energy efficiency.
1.3.1	Collect actual data on different construction techniques, appropriate construction materials, design arrangements, renewable energy applications, heat supply and distribution schemes and other technical options to improve energy efficiency of various types of residential buildings.	4,000	4,000	GEF	71,200 - international consultants		A report on technical options to improve energy efficiency of various types of residential buildings submitted to and approved by the EE Department and published online. Deadline - May 31, 2013
		1,680	1,680	GEF	71,300 - national consultants		
		1,200	1,200	GEF	71,300 - national consultants (translation)		
1.3.2	Conduct a cost-efficiency analysis of different technical options and practices revealed in activity 1.3.1, which would be best applicable to the Belarusian civil construction industry with a focus on different types of residential buildings.	4,000	4,000	GEF	71,200 - international consultants		A report on cost-efficiency analysis of different technical options to improve energy efficiency of various types of residential buildings submitted to and approved by the EE Department and published online. Deadline - Aug 31, 2013
		1,320	1,320	GEF	71,300 - national consultants		
1.3.3	Draft recommendations concerning overall low-energy building performance with the least possible	3,000	3,000	GEF	71,200 - international consultants		A report containing recommendations for the cost-effective low-energy performance

	construction and O&M costs for residential buildings in Belarus.	1,080	1,080	GEF	71,300 - national consultants		of various types of residential buildings submitted to and approved by the EE Department and published online. Deadline - Oct 31, 2013
1.4	A completed analysis of the impact of the new low energy buildings on the feasibility of different heat supply systems typically used in Belarus and the buildings' central water heating + radiator scheme connected to district heating, in particular, with related recommendations for future development.					Project Manager	A report, approved by the EE Department and the Ministry of Architecture and Construction and published online, with evaluation of impact of different technical options to heat and hot water supply systems.
1.4.1	Conduct an analysis of impact of different technical options and practices revealed in activities 1.3.1-1.3.3 on the feasibility of various typical schemes used for district heating and hot water supply in residential areas in Belarus.	1,320	1,320	GEF	71,300 - national consultants		A report on feasibility of different typical district heating and hot water supply schemes with due regard to technical solutions submitted to and approved by the EE Department and the Ministry of Architecture and Construction and published online. Deadline - October 31, 2013.
1.4.2	Based on the results of analysis above, recommend the best applicable options for further development of district heating and hot water supply systems in residential areas.	840	840	GEF	71,300 - national consultants		Recommendations on the further development of district heating and hot water supply systems in residential areas submitted to the EE Department and the Ministry of Architecture and Construction. Deadline - December 31, 2013.

1.5	A finalized draft with related stakeholder consultations for revised national energy performance based norms and standards for newly constructed buildings and, as applicable, those going through a major renovation with the initial focus on residential buildings.				Project Manager	The first drafts of requirements and norms for new energy efficient building design and performance submitted to the EE Department and the Ministry of Architecture and Construction.	
1.5.1	Draft the national energy performance based norms and standards for newly constructed buildings:					Draft of the energy performance standards for newly constructed residential buildings submitted to the EE Department and the Ministry of Architecture and Construction and published online. Deadline - Nov 30, 2013	
1.5.1.1	<i>Conduct critical analysis and evaluate gaps between national energy performance based standards and those of the EU applicable to newly constructed residential buildings</i>	4,000		4,000	GEF 71,200 - international consultants 71,300 - national consultants		<i>A report on the results of critical analysis with respective recommendations on using the energy performance standards in Belarus submitted to the EE Department and the Ministry of Architecture and Construction, and approved by the EE Department and published online. Deadline - June 30, 2013.</i>
1.5.1.1		1,320		1,320	GEF 71,300 - national consultants		
1.5.1.1		1,200		1,200	GEF 71,300 - national consultants (translation)		
1.5.1.2	<i>Organize a round table (ad-hoc meeting) to share and discuss existing practice of successful introductions of energy performance standards for newly constructed residential buildings</i>	720		720	GEF 71,300 - national consultants		<i>At least 15 representatives of stakeholders attended the round table and a respective minute with recommendations prepared. Deadline - July 31, 2013</i>
1.5.1.2		600		600	GEF 72,100 - contract serv.companies		
1.5.1.3	<i>Based on the results of activities 1.5.1.1-1.5.1.2, formulate design requirements with respect to energy efficiency in</i>		4,000	4,000	GEF 71,200 - international consultants		<i>Requirements and norms for new energy efficient building design and performance compiled and</i>

	<i>newly constructed residential buildings along with drafts of regulatory documents establishing energy performance based standards and facilitating developments of energy efficient buildings</i>		1,320	1,320	GEF	71,300 - national consultants		<i>first drafts submitted to the EE Department and the Ministry of Architecture and Construction. Deadline - Nov 30, 2013</i>
1.5.2	Draft the national energy performance based norms and standards for buildings going through a major renovation:							Draft of the energy performance standards for residential buildings under major renovation submitted to the EE Department and the Ministry of Architecture and Construction and published online. Deadline - Dec 31, 2013
1.5.2.1	<i>Conduct critical analysis and evaluate gaps between national energy performance based standards and those of the EU applicable to residential buildings under major renovations</i>		4,000	4,000	GEF	71,200 - international consultants		<i>A report on the results of critical analysis with respective recommendations on using the energy performance standards in Belarus submitted to and approved by the EE Department and published online. Deadline - Oct 31, 2013</i>
			1,320	1,320	GEF	71,300 - national consultants		
			1,200	1,200	GEF	71,300 - national consultants (translation)		
1.5.2.2	<i>Organize a round table (ad-hoc meeting) to share and discuss existing practice of successful introductions of energy performance standards for residential buildings going through a major renovation</i>		720	720	GEF	71,300 - national consultants		<i>At least 15 representatives of stakeholders attended the round table and a respective minute with recommendations prepared. Deadline - Nov 30, 2013</i>
			600	600	GEF	72,100 - contract serv.companies		
1.5.2.3	<i>Based on the results of activities 1.5.2.1-1.5.2.2, formulate design requirements with respect to energy efficiency in</i>		4,000	4,000	GEF	71,200 - international consultants		<i>Requirements and norms for energy efficient performance of buildings under renovation</i>

	residential buildings under renovation along with drafts of regulatory documents establishing new standards and facilitating measures for energy efficiency improvement in such buildings				1,320	1,320	GEF	71,300 - national consultants		compiled and first drafts submitted to the EE Department and the Ministry of Architecture and Construction. Deadline - Dec 31, 2013
1.6	Elaborated and by the Government of Belarus adopted practical procedures for the establishment of a mandatory system of EE certification of buildings, including issuing of EE passports and a system of monitoring and compliance checking with related on-site spot-checks.								Project Manager	The Output is to be implemented in 2014-2016
1.7	Further developed and adopted quality standards and a system of EE certification for the construction materials, accessories and appliances used in the construction sector.								Project Manager	The Output is to be implemented in 2014-2016
Outcome 1 TOTAL:		0	38,480	66,800	80,500	185,780				
Outcome 2: Enhanced capacity of the Belarusian specialists to implement and effectively enforce the new energy efficiency building standards and construction norms										
2.1	Developed, published and disseminated stakeholder group specific technical guides, handbooks, guidelines and other related training materials on energy efficiency design and construction of new buildings to support the implementation of the envisaged new construction norms, including dissemination of this information through the internet based energy platform and the project's own Internet site.								Project Manager	A capacity building action plan of the Project adopted by the EE Department
2.1.1	Carry out the capacity needs assessment of all relevant stakeholders and specify various target groups for enhancing their capacity in the field of energy efficiency improvement of residential buildings.				1,200	1,200	GEF	71,300 - national consultants		A report on the results of the capacity needs assessment with respective recommendations submitted to and approved by the EE Department and published online. Deadline - October 31, 2013
2.1.2	Based on the results received under activity 2.1.1, prepare, discuss and approve a capacity building action plan for different target groups, including schedules for different measures, activities and events.				1,200	1,200	GEF	71,300 - national consultants		A capacity building action plan as well as respective activities for 2014-2016 adopted by the EE Department. Deadline - December 31, 2013

2.2	New courses on integrated building design and building energy efficiency included into the curricula of all key Belarusian universities educating architects and building engineers and at least 200 students have passed these new courses by the end of the project			Project Manager	Recommendations and draft ToRs for updating and adjusting curricula of selected relevant universities approved by universities and adopted by the EE Department.
2.2.1	Conduct critical analysis of curricula of different relevant Belarusian universities with a view of revealing possible gaps and deficiencies in education process related to integrated energy efficient building design, construction and operation.	1,200	1,200	GEF 71,300 - national consultants	A report on the results of critical analysis of curricula submitted to and approved by the EE Department and published online. Deadline - October 31, 2013
2.2.2	Organize a round table (ad-hoc meeting) to discuss relevancy of new university courses for education process in selected universities.	1,200 600	1,200 600	GEF 71,300 - national consultants GEF 72,100 - contract serv.companies	At least 15 representatives of stakeholders attended the round table and a respective minute with recommendations prepared. Deadline - November 15, 2013
2.2.3	Prepare recommendations and draft ToRs for updating and adjusting curricula of selected relevant universities.	1,200	1,200	GEF 71,300 - national consultants	Recommendations and ToRs for updating and adjusting curricula of selected relevant universities submitted to and approved by the EE Department. Deadline - December 31, 2013
2.3	At least 50 experts from different state and municipal entities dealing with construction policies, norms and standards are trained on the most recent international developments, experiences and lessons learnt on building energy efficiency and environmentally sustainable construction.			Project Manager	The Output is to be implemented in 2014-2016 pursuant to the action plans approved (see activity 2.1.2)

2.4	At least 50 architects and other buildings engineers from the leading design institutes (including NIPTIS, Belzhilproekt, Belgosproekt, design institutes in Regional centers and also professional associations: Belarusian Association of Architects, “Renewable Energy”, etc.) are trained on the: i) most recent international developments in the area of energy efficient buildings from the technical and policy perspective; ii) integrated, energy efficient building design principles and techniques; iii) implications in the practical design work when moving from prescriptive norms to buildings’ overall energy performance based construction norms; iv) available technical options and cost-effective design principles for optimizing buildings’ energy performance; and v) presentation of the available, state of the art software to support integrated, energy efficient building design and training for its use.					Project Manager	The Output is to be implemented in 2014-2016 pursuant to the action plans approved (see activity 2.1.2)
2.5	At least 50 construction inspectors from the main regional and district centers trained on methodologies for assessing buildings’ energy performance and the correct installation of the materials and equipment used.					Project Manager	The Output is to be implemented in 2014-2016 pursuant to the action plans approved (see activity 2.1.2)
2.6	At least 50 supervisors of the leading construction companies trained on the correct installation of the materials and equipment used and provision of other advices for private construction companies on how to integrate elements of energy efficient design in their investment projects throughout the project cycle from the design to construction and building management.					Project Manager	The Output is to be implemented in 2014-2016 pursuant to the action plans approved (see activity 2.1.2)
2.7	A two-week training seminar for professional designers, representatives of the state expertise and building supervision in order to familiarize the group with the experiences of energy-efficient building design, construction and governance (including the role of municipal authorities) in EU countries and visiting the facilities (25 people).					Project Manager	Belarusian specialists and decision-makers participated in at least three study visits and three international events dedicated to energy efficient and environmentally sustainable building construction and operation
2.8	Other required training, networking and exchange of knowledge and lessons learnt by building on co-operation with other international initiatives promoting energy efficient and environmentally sustainable building construction.					Project Manager	The Output is to be implemented in 2014-2016 pursuant to the action plans approved (see activity 2.1.2)
2.8.1	Monitor and cooperate with other international initiatives and	2,000	2,000	GEF	71,200 - international consultants		Description of selected events, ToRs for short-term assignments and

	prepare quarterly plans for forthcoming events dedicated to energy efficient and environmentally sustainable building construction and operation.		240			240	GEF	71,300 - national consultants (translation)		financial support documents prepared by the PMU and approved by the UNDP and EE Department. During the year
2.8.2	Organize study visits in appropriate EU country(ies), selected as per activity 2.8.1, devoted to the best existing practice in application of the energy performance standards to residential buildings.			1,000	1,000	2 000	GEF	71,200 - international consultants		At least 2 study tours for 5 Belarusian specialists each conducted in EU countries and short reports with recommendations prepared. Deadline - October 31, 2013
				240	240	480	GEF	71,300 - national consultants		
				1,120	1,120	2,240	GEF	71,300 - national consultants (translation)		
				10,650	10,650	21,300	GEF	71,600 - travels		
2.8.3	Provide informational support for Belarusian specialists and decision-makers in their participation in at least three international events.		1,000			1,000	GEF	71,200 - international consultants		In total at least 9 Belarusian specialists and decision-makers took part in at least three relevant international events. During the year.
			240	240	240	720	GEF	71,300 - national consultants		
			1,120	1,120	1,120	3,360	GEF	71,300 - national consultants (translation)		
			5,280	5,280	5,280	15,840	GEF	71,600 - travels		
2.8.4	Provide support for Belarusian specialists and decision-makers in organizing and implementation of study visits to similar UNDP projects.				1,200	1,200	GEF	71,300 - national consultants		At least 3 Belarusian specialists and decision-makers took part in at least one study visit and joint workshop with experts of similar UNDP projects. During the year
					4,146	4,146	GEF	71,600 - travels		
	Outcome 2 TOTAL:	0	9,880	19,650	31,596	61,126				
Outcome 3: Demonstrated energy and cost-saving potential of new energy efficiency measures in at least three new residential buildings in two Belarusian cities										

3.1	Finalized background studies for and design of the selected demo buildings by applying integrated building design principles and taking into account new technologies and approaches for meeting the HVAC needs of those buildings in a most energy and cost efficient way.					Project Manager	A relevant part of construction documents for energy efficiency improvement in at least one of the selected buildings and action plans for design and construction of the demonstration sites along with schedules for different measures, activities and events approved by developers and adopted by the EE Department.		
3.1.1	Carry out respective studies of baseline architecture and engineering characteristics of potential constructions at the demo sites focusing on the number of flats and tenants, energy, heat and hot water consumption, and HVAC system requirements along with customer properties expected	9,000 5,640 240 987 5,000	9,000 5,640 240 987 5,000	GEF	71,200 - international consultants 71,300 - national consultants 71,300 - national consultants (translation) 71,600 - travels 72,100 - contract serv.companies		A report, prepared on architecture and engineering characteristics of potential constructions at the demo sites, examined and approved by developers and adopted by the EE Department. Deadline - June 30, 2013.		
3.1.2	Based of the results of activity 3.1.1 above, suggest and justify applicable building space-and-planning parameters, other technical and design solutions for the selected demo sites based on integrated energy performance building design principles and taking into account applicable energy efficiency improvement technologies and approaches.	12,000 5,640 240 987 5,000				12,000	GEF GEF GEF GEF GEF	71,200 - international consultants 71,300 - local consultants 71,300 - local consultants (translation) 71,600 - travel 72,100 - contract. serv.	Design and technical solutions prepared, examined and adopted by the EE Department. Deadline - July 31, 2013.

						companies		
3.1.3	Provide least-cost analysis of the options suggested in activity 3.1.2 and choose the most feasible and cost-effective building performance for the demo projects with minimal possible energy consumption per unit area along with keeping the same or even improved comfort conditions and customer properties stipulated in the baseline design.		9,000	9,000	GEF	71,200 - international consultants		A report on least-cost analysis and recommendations for selection and approved by development Department. Deadline -
			5,640	5,640	GEF	71,300 - local consultants		
			240	240	GEF	71,300 - local consultants (translation)		
			987	987	GEF	71,600 - travel		
			5,000	5,000	GEF	72,100 - contract. serv. companies		
3.1.4	Develop preconstruction simulations and exploratory designs of measures, technological methods, installations and equipment for energy efficiency improvement of the three residential buildings chosen as a result of activity 3.1.3.		9,000	9,000	GEF	71,200 - international consultants		A report, design drawing for siting of the energy equipment prepared, examined and approved by the EE Department. Deadline -
			5,640	5,640	GEF	71,300 - local consultants		
			240	240	GEF	71,300 - local consultants (translation)		
			987	987	GEF	71,600 - travel		
			20,000	20,000	GEF	72,100 - contract. serv. companies		
3.1.5	Based on the preliminary design of measures for energy efficiency improvement as per activity 3.1.4, provide preliminary specifications for			9,000	GEF	71,200 - international consultants		A report containing specifications for installations and list of potential suppliers prepared and approved by development Department. Deadline -

	the equipment and installations needed and determine potential equipment manufacturers and suppliers.									
3.1.6	Based on the results of activities 3.1.3-3.1.5, implement all necessary developments concerning design of techniques, installations and equipment for energy efficiency improvement of at least two of the three residential buildings chosen, coordinate and complete a relevant part of construction documents.		5,640	5,640	GEF	71,300 - national consultants				A relevant part of construction documents for energy efficiency improvement in at least two of the selected buildings completed and submitted to a developer and the EE Department. Deadline - December 31, 2013
			987	987	GEF	71,600 - travels				
		20,000	30,000	50,000	GEF	72,100 - contract serv.companies				
3.1.7	Based on the results received under activities 3.1.1-3.1.6, prepare, discuss and approve action plans for design and construction of the demonstration sites along with schedules for different measures, activities and events in 2014-2016.		5,400	5,400	GEF	71,300 - national consultants				An action plan as well as respective schedules and activities for 2014-2016 adopted by the EE Department. Deadline - December 31, 2013
			987	987	GEF	71,600 - travels				
			5,000	5,000	GEF	72,100 - contract serv.companies				
3.2	Finalized construction of the demo buildings by ensuring that the construction and all installation are made in accordance with the proposed or adopted quality standards and guidelines.								Project Manager	The Output is to be implemented in 2014-2016 pursuant to the action plans approved (see activity 3.1.7)
3.3	A monitoring report on the construction of the demonstration buildings documenting the experiences and lessons learnt from procuring, installing and testing the new energy efficient materials, construction techniques and appliances.								Project Manager	The Output is to be implemented in 2014-2016 pursuant to the action plans approved (see activity 3.1.7)
3.4	A monitoring report on the energy performance of the demonstration buildings documenting the actual energy and financial savings and GHG emission reduction from each building as a whole and from each specific energy efficiency measure and appliance tested.								Project Manager	The Output is to be implemented in 2014-2016 pursuant to the action plans approved (see activity 3.1.7)
3.5	At least 30 private showings of the new buildings organized for local architects, designers, builders and other decision makers, including half-day training sessions with an objective to promote the solutions adopted for the demonstration projects in additional buildings.								Project Manager	The Output is to be implemented in 2014-2016 pursuant to the action plans approved (see activity 3.1.7)
	ИТОГО по Outcome 3:	0	20,867	105,601	68,641	195,109				

Outcome 4: Documented, disseminated and institutionalized project results providing a basis for further replication

4.1	Developed and published public awareness raising materials and completed nation-wide awareness and information campaign advocating the benefits of energy efficiency measures in new buildings, including economic, social, health, environmental and aesthetical aspect and also addressing the GEF/UNDP visibility requirements.			PMU PR-expert	At least five interviews and press-releases along with at least three printed materials provided for specialists and tenants. During the year.
4.1.1	Organize and carry out an ongoing information campaign (interviews, press-releases, etc.) about the Project activities.	600	600	GEF 71,300 - national consultants	At least five interviews and press-releases provided. During the year.
4.1.2	Prepare and publish hand-books, leaflets, brochures, etc. for professionals about the best practices concerning energy efficiency improvement in residential buildings.	1,200	1,200	GEF 71,300 - national consultants	At least one printed material for professionals about the best practices concerning energy efficiency improvement in residential buildings prepared and issued. During the year.
		3,150	3,150	GEF 72,100 - contract serv.companies	
4.1.3	Prepare and publish hand-books, leaflets, brochures, etc. for professionals about the best practices concerning energy audit in residential sector.	1,200	1,200	GEF 71300 - national consultants	At least one printed material for professionals about the best practices concerning energy audit in residential sector prepared and issued. During the year.
		3,150	3,150	GEF 72100 - contract serv.companies	
4.1.4	Prepare and publish hand-books, leaflets, brochures, etc. for general public about the best practices concerning energy efficient management of households.	1,200		GEF 71,300 - national consultants	At least one printed material for general public about the best practices concerning energy efficient management of households. During the year.
		3,150		GEF 72,100 - contract serv.companies	
4.1.5	In cooperation with the Ministry of Education and the EE Department, provide informational supports to the "Energy Marathon" Republican Contests.	360	360	GEF 71,300 - national consultants	At least one "Energy Marathon" Republican Contest supported and conducted. During the year.
		1,500	1,500	GEF 74,200 – audio& video	
		330	330	GEF 71,600 - travels	
4.2	Agreed methodology and sustainable institutional arrangements for annual market monitoring keeping track on buildings constructed each year as well as the sale of key building materials, accessories and appliances together with their energy performance characteristics.			Project Manager	The Output is to be implemented in 2014-2016

4.3	Fully mandated and capacitated state agency with a responsibility to monitor the energy savings and CO2 emission reductions in residential and other buildings, together with the agreed procedures and interagency agreements for compiling the required primary data.							Project Manager	Draft recommendations for an institutional framework of the national energy conservation and GHG reduction MRV system in the construction sector
4.3.1	Conduct a critical analysis of the existing national institutional system and procedures for monitoring, reporting and verification of the energy savings and GHG emission reductions in the construction sector.		3,000	3,000	GEF	71,300 - national consultants			An analytical report concerning the existing national institutional system and procedures for monitoring, reporting and verification of the energy savings and GHG emission reductions in the construction sector along with respective recommendations submitted to and approved by the EE Department and the UNFCCC National Focal Point. Deadline - Nov 30, 2013.
4.4	An approved national energy audit program (including the required funding for its implementation) for promoting larger number of energy audits of residential and other buildings and including a mechanism for using the audit results for elaboration of the energy efficiency strategies for the building sector at the national level.							Project Manager	The Output is to be implemented in 2014-2016
4.5	Energy-efficiency aspects integrated into the regional and local plans for territorial development being developed by the Institute of Urban and Regional Planning (IRUP).							Project Manager	The Output is to be implemented in 2014-2016
4.6	An International conference on energy efficiency in residential sector held in Belarus, including a field visit to the pilot demonstration sites and coordination with other UNDP/GEF building energy-efficiency projects.							Project Manager	International seminars on “Best Practice in Energy Efficiency Improvement in Residential Buildings” are organized and held annually with a larger International Conference by the end of the Project
4.6.1	Organize an International seminar (or a separate conference session) on “Best Practice in Energy		5,300	5,300	GEF	71,200 - international consultants			At least two International seminars on “Best Practice in Energy Efficiency Improvement

	Efficiency Improvement in Residential Buildings” under the auspices of the Project and in cooperation with the EE Department, UNDP and other similar projects.	600	600	1,200	GEF	71,300 - national consultants		in Residential Buildings” organized and held. Deadline - May, 2013 and the 4th quarter, 2013
			980	980	GEF	71,600 - travels		
		2,700	3,500	6,200	GEF	72,100 - contract serv.companies		
		210	210	420	GEF	71,300 - national consultants (translation)		
		250	500	750	GEF	74,200 – audio& video		
4.7	Regularly updated project website with a link to an Expanded Energy Platform.						PMU PR-expert	The Project's website created and linked to the Energy Efficiency Platform
4.7.1	Prepare a ToR for the Project Website development including requirements for organizational arrangements (domain, host, provider) and legal provisions for linking to the Energy Efficiency Platform.	2,400		2,400	GEF	71,300 - national consultants		The ToR prepared and approved by the EE Department. Deadline - May 31, 2013.
4.7.2	Develop and launch the Project Website.							The Project Website developed and launched. Deadline - August 31, 2013
4.7.2.1	<i>Prepare the Project Website's infological architecture and design of the user interface, and develop its HTML version.</i>	1,920		1,920	GEF	71,300 - national consultants		<i>An HTML version prepared. Deadline - June 30, 2013</i>
4.7.2.2	<i>Develop the Project Website prototype version...</i>		2,400	2,400	GEF	71,300 - national consultants		<i>A prototype version prepared and approved by the EE Department. Deadline - July 31, 2013</i>
4.7.2.3	<i>Launch the Project Website...</i>		1,200	1,200	GEF	71,300 - national consultants		<i>The Project Website launched. Deadline - August 31, 2013</i>
			540	540	GEF	72,100 - contract serv.companies		
4.8	Annual market monitoring reports for new building construction with the emphasis on energy efficiency aspects.						Project Manager	The energy efficiency building construction market monitoring report for 2013 prepared

4.8.1	Conduct a study on energy performances and respective GHG emissions of different residential buildings introduced in the housing construction market in 2013, and, on this basis, draft a 2013 report on market monitoring for new residential building construction with the emphasis on energy efficiency and GHG emission aspects.	3,000	3,000	GEF	71,300 - national consultants		A report on the energy efficiency building construction market monitoring for 2013 prepared and approved by the EE Department. Deadline - December 31, 2013
4.9	Final project report consolidating the results and lesson learnt from the implementation of the proposed project components and recommendations for the required next steps.					Project Manager	The inception report prepared and discussed, and recommendations for adjustments of respective interventions of the Project approved by stakeholders and incorporated into the Project implementation strategy and adaptive approaches.
4.9.1	Implement inception stage study by means of collecting and analyzing current actual baseline data on legal and institutional framework,	7,000 2,640	7,000 2,640	GEF GEF	71,200 - international consultants 71,300 - national consultants		A report on the baseline situation in the field of energy efficiency improvements in residential buildings prepared and adopted by the EE Department. Deadline - April 30, 2013

	technical standards, construction techniques, materials, design arrangements, renewable energy applications, heat supply and distribution schemes and other technical options to improve energy efficiency of various types of residential buildings, and comparing them with the baseline described in the Project Document.	987								30 April 2013.
4.9.2	Compile and present an inception stage report describing the new baseline situation and proving a respective adjustment of intervention approaches of the Project suggested in the Project Document.	5,000								An inception report prepared and approved by the EE Department. Deadline - May 15, 2013
		1,320								
		360								
4.9.3	Organize an Inception Seminar to present and discuss the Inception Stage Report describing the new baseline situation and proving a respective adjustment of intervention approaches of the Project suggested in the Project Document.	5,300								A seminar organized and held to discuss and adopt the Inception Report. Deadline - May 31, 2013
		600								
		2,965								
		4,000								
		210								
Outcome 4 total:		0	40,652	13,440	21,440	75,532				
Effective project management and monitoring ensured										

PM1	Project monitoring and reporting.	500				1,000	UNDP	72,100 - contract serv.companies	Project Manager	At least two Project Steering Committee meetings held. Deadline - May 31 and Dec 31, 2013 All project reports submitted and approved in due time. Deadline - July 15, 2013 (for semiannual report to the Ministry of Economy) and December 15, 2013 (for annual reports to the UNDP/GEF and Logs).
PM2	Project management and project office functioning.	250	1,500	1,250	1,250	4,250	UNDP	71,300 - national consultants	Project office successfully operated. Project plan successfully fulfilled. Throughout the Project	
		11,140	14 245	17 290	17,290	59,965	UNDP	71,400 - individ. contracts		
		3,000	700	200		3,900	UNDP	72,800 - IT Equipment		
		3,000				3,000	UNDP	72,200 - Furniture& Equipment		
		500	500	500	500	2,000	UNDP	72,400 - communicat.		
		250	250	250	250	1,000	UNDP	73,400 - equipment services		
		600	200	200	200	1,200	UNDP	72,500 - supplies		
		500	1,500	1,500	1,500	5,000	UNDP	73,100 - Utilities		
		300	300	300	300	1,200	GEF	74,500 - miscellan.		
	Project management total:	19,540	19,695	21,490	21,790	82,515				
	Total 2013:	19,540	129,574	226,981	223,967	600,062				

UNDP/GEF Project No. 00077154

Improving Energy Efficiency in Residential Buildings in the Republic of Belarus

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