AGREED

UNDP Deputy Resident Representative

Farid Garakhanov
Date 12.02.2014

AGREED

Department for Energy Efficiency of Gosstandard of the Republic of Belarus
National Director of the UNDP/GEF Project
Andrei Minenkov
Date 21.02.2014

ANNUAL PROJECT REVIEW 2013

Project Title: Improving Energy Efficiency in Residential Buildings in the Republic of Belarus
Project ID: 77154
Year: 2013
Annual Targets: N/A

Activity	Description	Implementing Partner	Fund	Donor	Budget account	Budget account description	Funds planned, USD	Annual target, %	Funds utilized, USD	Annual target achieved, %	Deviation, USD	Overall project assessment of implemented activities (brief description)
Outcome 1: Increased incentives for state organizations to invest in energy efficiency												
Output 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**											**A draft of the methodological guidelines has been prepared and will enter corresponding adoption procedures in 2014 after completion of ongoing discussions and reviews by Project Partners, the DEE and other stakeholders.**
1.1.1	Develop methodological guidelines for energy performance monitoring and calculation applicable to different types of residential buildings:											Fully implemented. A draft of methodological guidelines along with four reports and a set of training materials for buildings' energy performance monitoring and calculations submitted to the DEE and disseminated among partners.
1.1.1.1	*Conduct a critical analysis and evaluate the best European and other internationally recognized methodologies and practices for energy performance monitoring and calculation applicable to different types of residential buildings.*	000473	62000	10003		71200 - international consultants	2 425	100	2 425	100	0	Fully implemented. The critical analysis of the best available methodologies and practices have been conducted by two local and two international consultants. Four reports have been issued and disseminated among partners and DEE. The analysis revealed high level of harmonization of national standards with corresponding EU standards, although monitoring and calculation of energy performance of different types of residential buildings requires additional special methodology and guidelines. Other lacking principles and approaches in current national regulations and standards include building characterization, product quality requirements for prefabricated materials, methodologies for energy audit, introduction of IPMVP, and etc.
		000473	62000	10003		71300 - local consultants	960	100	960	100	0	
		000473	62000	10003		71300 - local consultants (translation)	1 200	100	1 200	100	0	
1.1.1.2	*Draft methodological guidelines on energy performance monitoring and calculation for residential buildings.*	000473	62000	10003		71200 - international consultants	2 423	100	2 552	105	-129	Fully implemented. The Project drafted methodological guidelines for energy performance monitoring and calculation as well as recommendations based on the international IPMV-protocol for energy audit in residential buildings in line with the best international practice and with due account of national provisions. These materials have been printed, written in CDs (ca. 100 copies) and disseminated among stakeholders for review and comments, and presented at the round table for discussion (see below).
		000473	62000	10003		71300 - local consultants	960	100	960	100	0	
1.1.1.3	*Organize a round table (ad-hoc meeting) on residential buildings' energy performance monitoring and calculation methodologies and practices.*	000473	62000	10003		71300 - local consultants	720	100	720	100	0	Fully implemented. A round table was organized and held in Minsk on Dec 18, 2013. About 60 representatives of stakeholders were taking part in discussions of presented methodological quidelines and provided their comments. The round table has agreed with provisions of the presented methodology, while suggesting a few minor corrections, and recommended for the further process of approval and adoption.
		000473	62000	10003		72100 - contract. serv. companies	600	100	600	100	0	
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.*	000473	62000	10003		71200 - international consultants	3 000	100	3 000	100	0	Partly implemented. The draft guidelines is being revised taking into account stakeholders' comments above. To be submitted to the EE Deprtment and Ministry of Architecture and Construction in the first quarter of 2014 for review and approval. It is foreseen that these materials will be adopted as a relevant technical code or a revised version of GOST EN 15217 "Energy Efficiency of Buildings. Methods of Characterization of Energy Performance" in 2014.
		000473	62000	10003		71300 - local consultants	840	100	840	100	0	

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.	000473	62000	10003		71300 - local consultants	960	100	960	100	0	Consulting services are being routinely provided to the Project Partners, of DEE and other interested organizations (Oblast and Rayon level). In pa the project involved developers (i.e., specialists of NIPTIS, Grodnograzh and MAPID) in practical measures for a test implementation of these quic during energy performance monitoring and calculation of five residential b designed and constructed by these developers. The conciliation and adop procedures concerning the methodological quidelines for energy perform monitoring and calculation will be conducted in the first quarter of 2014.
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**											**Energy audits of five residential buildings have been organized and conducted as scheduled.**
1.2.1	Develop guidelines for energy audit in residential buildings based on the best domestic and international practices.											Fully implemented. A draft of methodological guidelines along with four re relevant training materials for buildings' energy audits submitted to the DE disseminated among partners.
1.2.1.1	*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.*	000473	62000	10003		71200 - international consultants	4 000	100	4 000	100	0	Fully implemented. The critical analysis of existing international and dom practices for energy audit in residential buildings has been conducted and between the domestic and the best international practices have been dete two local and one international consultants. Two reports have been issue disseminated among partners and DEE. In particular, the reports stated h harmonization of national standards with corresponding EU standards, alt terms of energy audits of different types of residential buildings it was note there are neither national methodological guidelines available nor descript applicable instrumental methods.
		000473	62000	10003		71300 - local consultants	960	100	960	100	0	
1.2.1.2	*Provide recommendations and draft a guidelines, based on the analysis as per activity 1.2.1.1 above, for improvement of energy audit services in residential buildings in Belarus.*	000473	62000	10003		71200 - international consultants	4 425	100	4 425	100	0	Fully implemented. The recommendations for improvement of energy aud residential buildings have been prepared by two local experts and an inter consultant. Three reports have been issued and, based on these reports, containing the methodological guidelines have been prepared and dissemi among project partners and DEE. The guidelines have been printed, writte (ca. 100 copies) and disseminated among stakeholders for review and cor The draft has been also used while specifying and procuring energy audit equipment and performing energy audits of 5 residential buildings.
		000473	62000	10003		71300 - local consultants	960	100	960	100	0	
		000473	62000	10003		71300 - local consultants (translation)	1 200	100	1 200	100	0	
1.2.1.3	*Prepare and approve action plans, equipment specifications and equipment procurement plans for energy auditing residential buildings of different age and construction techniques.*	000473	62000	10003		71300 - local consultants	840	100	840	100	0	Fully implemented. The action plans, equipment specification and equipm procurement plans have been discussed and approved. The correspondin has been issued and the tender process have been conducted in line with Rules of Procedure.
1.2.1.4	*Acquire equipment needed for the energy audits as per the procurement plans stipulated under activity 1.2.1.3.*	000473	62000	10003		72300 - Equipment	55 000	100	26 747	49	28 253	Fully implemented. The project has procured all necessary equipment.
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.*	000473	62000	10003		71200 - international consultants	5 925	100	5 925	100	0	Partly implemented. The project has started energy audits of five multi-sto buildings. During pre-heating period, all the five buildings have been monit all energy consumption parameters have been measured and collected per individual flat and analyzed in line with the IPMVP and modern "eeMeasure software. The same measurements are being conducted during the heatin The entire energy audit will be completed by the end of heating period (Feb with a respective report.
		000473	62000	10003		71300 - local consultants	2 400	100	2 400	100	0	
		000473	62000	10003		72100 - contract. serv. companies	13 425	100	5 000	37	8 425	
		000473	62000	10003		71600 - travel	660	100		0	660	
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.*	000473	62000	10003		71200 - international consultants	2 425	100	2 425	100	0	Fully implemented. The methodological guidelines have been corrected an adjusted in line with results of monitoring of five residential multi-storey buil The guidelines was first introduced as a curricular material for the training c organized and provided by the project. In 2014, the guidelines will be formal submitted for the conciliation and adoption procedures.
		000473	62000	10003		71300 - local consultants	840	100	840	100	0	
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.	000473	62000	10003		71200 - international consultants	5 425	100	5 425	100	0	Fully implemented. The guidelines on energy auditing in residential building training materials and curriculum for technical training workshops have bee prepared by three national and one international consultants and published (ca. 70 copies) and disseminated among stakeholders for review and comm and presented at the training workshop (see below).
		000473	62000	10003		71300 - local consultants	960	100	960	100	0	

		000473	62000	10003		71300 - local consultants (translation)	1 200	100	1 200	100	0	
		000473	62000	10003		74200 - audio & video prod.	1 800	100	1 800	100	0	
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.	000473	62000	10003		72100 - contract. serv. companies	6 000	100	6 000	100	0	Fully implemented. A training workshop with 6 lectures for approx. 70 trainees has been organized on Dec 19, 2013. Three local lecturers and one international lecturer have been engaged. The proceedings of the workshop have been prepared and distributed in CD (ca. 70 copies). During the workshop, a survey was conducted with a view of assessment of lacking knowledge and further training needs. According to its results, about 77% of the audience (who are professional energy auditors) have never conducted energy audits of residential buildings. The remaining part has only either limited or general notions about this.
		000473	62000	10003		71300 - local consultants	720	100	720	100	0	
		000473	62000	10003		71600 - travel	1 320	100		0	1 320	
		000473	62000	10003		71200 - international consultants	3 425	100	3 425	100	0	
		000473	62000	10003		71300 - local consultants (translation)	420	100	420	100	0	
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**											**The recommendations with cost efficiency analysis of different technical options applicable to the development of energy efficient residential buildings have been prepared and discussed with stakeholders. The recommendations are intended to be tested during development of the pilot buildings and will be included in national technical regulations and standards in 2014.**
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.	000473	62000	10003		71200 - international consultants	2 425	100	2 425	100	0	Fully implemented. Actual data were collected and analyzed as to different construction techniques, appropriate construction materials, design arrangements, heat supply and distribution schemes and other technical options (use of heat pumps, solar heating collectors and solar PV-panels) to improve energy efficiency of various types of residential buildings. Three reports have been prepared by project local consultants and disseminated in forms of CD and hard copies.
		000473	62000	10003		71300 - local consultants	1 680	100	2 368	141	-688	
		000473	62000	10003		71300 - local consultants (translation)	1 200	100	1 200	100	0	
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.	000473	62000	10003		71200 - international consultants	2 425	100	2 425	100	0	Fully implemented. The cost-efficiency analysis of different technical options and practices applicable to the Belarusian civil construction industry with a focus on different types of residential buildings has been conducted. Two reports have been prepared by project local consultants and disseminated in forms of CD and hard copies. The study concluded that for massed residential constructions the major parameters that define cost-efficiency of energy savings are compactness, width, architecture forms and buildings orientation, optimization of HVAC systems with heat recuperation techniques and heat pumps.
		000473	62000	10003		71300 - local consultants	1 320	100	1 320	100	0	
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.	000473	62000	10003		71200 - international consultants	3 000	100	3 000	100	0	Fully implemented. The recommendations have been drafted as to building performance taking into account the least possible capital and O&M costs. Four reports have been prepared by project local consultants and disseminated in forms of CD and hard copies. The reports and the draft recommendations have been discussed with project industrial partners and specialists of the Ministry of Architecture and Construction. The recommendations are intended to be tested during development of the pilot buildings and will be included in national technical regulations and standards in 2014.
		000473	62000	10003		71300 - local consultants	1 080	100	1 080	100	0	
Output 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**											**The set of recommendations has been developed based on a number technical options with a view of improvement of district heating and hot water supply schemes in residential areas. These recommendations, although being for general provisions, were taken into account and incorporated in the RfP, ToR and technical specifications during the pre-tender and pre-development stages for two project pilot buildings. Further adoption of these recommendations is planned for 2014.**
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.	000473	62000	10003		71300 - local consultants	1 320	100	1 320	100	0	Fully implemented. Actual data were collected and analyzed, and recommendations concerning different technical options and practices have been compiled for developers with a focus on energy efficiency improvement of residential buildings. The results of these studies have been presented and disseminated in five reports.

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.	000473	62000	10003		71300 - local consultants	840	100	840	100	0	Fully implemented. The results of the studies above, have been presented in fc reports containing practical recommendations and discussed during two international conferences organized and held by the Project. These recomendations, although being for general provisions, have been taken as principals for further design of three pilot energy efficient buildings and helped Project to prepare an RfP, ToR and technical specifications for a correspondin tender of designers.
Output 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**											**Draft texts based on the energy performance general provisions elaborat the project have been prepared to revise some of national technical code and standards and submitted to relevant organizations with a view to ad these documents in 2014. Some of recommendations have been already incorporated in the technical codes submitted for adoption (GOST EN 15 "Energy Efficiency of Buildings. Methods of Characterization of Energy Performance", pending adoption in Jan 2014; Amendments to TKP 45-2.(2006 "Construction Heat Engineering. Design Norms"; Amendments to T 45-2.04-196-2010 "Thermal Insulation of Building"; The Complex Progran for Development of Energy Efficient Construction, Reconstruction and Modernization of Residential Buildings in 2013-2015 and up to 2020, pen approval and adoption in Jan 2014). The road map has been prepared an discussed with stakeholders along with the list of standards based on p recommendations to introduce provisions for integral regulatory framew harmonized with EU standards in the field of residential building constru and operation.**
1.5.1	Draft the national energy performance based norms and standards for newly constructed buildings											Fully implemented. Drafts of text to formulate clauses in corresponding regula documents have been compiled to respond to missing requirements and indic in some of technical codes currently applied in building sector. Nine recommendations have been prepared and suggested for technical codes submitted for adoption, e.g. GOST EN 15217 "Energy Efficiency of Buildings. Methods of Characterization of Energy Performance", Amendments to TKP 4 43-2006 "Construction Heat Engineering. Design Norms", Amendments to TK 2.04-196-2010 "Thermal Insulation of Building", The Complex Programme for Development of Energy Efficient Construction, Reconstruction and Moderniza Residential Buildings in 2013-2015 and up to 2020. These documents are per approval and adoption process to be finalized in the first quarter of 2014. The map for 2014-2015 has been prepared and discussed with stakeholders alon the list of other lacking standards based on project recommendations in order introduce provisions for integral regulatory framework harmonized with releva standards.
1.5.1.1	*Conduct critical analysis and evaluate gaps between national energy performance based standards and those of the EU applicable to newly constructed residential buildings.*	000473	62000	10003		71200 - international consultants	2 425	100	2 425	100	0	Fully implemented, The critical analysis and descriptions of gaps between nat energy efficiency standards and those exercised in EU have been conducted project consultants and presented in two project reports. The principal distinc are in energy performance monitoring (energy audit), architecture-spacial parameters of building envelopes, thermo-technical and homogeneity characteristics of construction materials and brick joints, specific heat loss characteristics, cumulative specific power inputs, combined durability, heat insulation interior walls, etc. The project suggested a roadmap for amending respective technical standards in 2014-2015 and presented it at the round tal (see below).
		000473	62000	10003		71300 - local consultants	1 320	100	1 320	100	0	
		000473	62000	10003		71300 - local consultants (translation)	1 200	100	1 200	100	0	
1.5.1.2	*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.*	000473	62000	10003		71300 - local consultants	720	100	720	100	0	Fully implemented. A round table have been organized and held in Minsk on 18, 2013. About 60 representatives of stakeholders have participated. The to area was how to enhance existing legal and institutional framework to stimul introduction of energy performance based standards in practice with a view t develop energy efficient buildings. The round table has agreed with the road suggested by the project. The roadmap and a list of suggested standards we published and disseminated in a form of CDs with a view to communicate wit stakeholders when preparing ADWP-2014.
		000473	62000	10003		72100 - contract. serv. companies	600	100	600	100	0	

1.5.1.3	*Based on the results of activities 1.5.1.1-1.5.1.2, formulate design requirements with respect to energy efficiency in newly constructed residential buildings along with drafts of regulatory documents establishing energy performance based standards and facilitating developments of energy efficient buildings.*	000473	62000	10003		71200 - international consultants	4 000	100	4 000	100	0	Fully implemented. The results containing in reports and recommendations prepared by local and international consultants allow to improve existing technical codes facilitating energy efficiency measures in new constructions. Nine recommendations concerning energy efficient building performance requirements have been prepared and suggested for technical codes submitted for adoption, e.g. GOST EN 15217 "Energy Efficiency of Buildings. Methods of Characterization of Energy Performance", Amendments to TKP 45-2.04-43-2006 "Construction Heat Engineering. Design Norms", Amendments to TKP 45-2.04-196-2010 "Thermal Insulation of Building", The Complex Programme for Development of Energy Efficient Construction, Reconstruction and Modernization of Residential Buildings in 2013-2015 and up to 2020. These documents are pending approval and adoption process to be finalized in the first quarter of 2014. More recommendations, included in the roadmap, have been communicated to stakeholders pending approval of its integration into annual standardization plans.
		000473	62000	10003		71300 - local consultants	1 320	100	1 320	100	0	
1.5.2	Draft the national energy performance based norms and standards for buildings going through a major renovation										0	Fully implemented. Drafts of text to formulate clauses in corresponding regulatory documents have been compiled to respond to missing requirements and indicators in some of technical codes currently applied in building sector. In particular, amendments have been suggested concerning requirements for calculations of resistance to heat transfer, thermal balance, specific heat loss coefficient under combined accounting of energy for HVAC and hot water supply, admissible values for room and hot water temperatures, etc. Reports and recommendations have been published in a form of CDs, presented, discussed and agreed upon during a round-table, and these recommendations have been communicated to stakeholders for further approval and integration into 2014 annual standardization plan as well as into a draft text of the Complex Programme for Development of Energy Efficient Construction, Reconstruction and Modernization of Residential Buildings in 2013-2015 and up to 2020.
1.5.2.1	*Conduct critical analysis and evaluate gaps between national energy performance based standards and those of the EU applicable to residential buildings under major renovations.*	000473	62000	10003		71200 - international consultants	4 000	100	4 000	100	0	Fully implemented. The critical analysis and descriptions of gaps between national energy efficiency standards and those exercised in EU have been conducted by project consultants and presented in two project reports. The gaps concerned mainly methods of calculations with due regard of local climate, number of storeys, compactness, specific values (e.g., heating area), width, orientation, etc. The project suggested a roadmap to amend existing methodologies.
		000473	62000	10003		71300 - local consultants	1 320	100	1 320	100	0	
		000473	62000	10003		71300 - local consultants (translation)	1 200	100	1 200	100	0	
1.5.2.2	*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.*	000473	62000	10003		71300 - local consultants	720	100	720	100	0	Fully implemented. A round table have been organized and held in Minsk. About 60 representatives of stakeholders have participated. The topical area was how to enhance existing legal and institutional framework to stimulate introduction of energy performance based standards in practice with a view to improve energy efficiency in buildings under operation. The round table has agreed with the roadmap suggested by the project. The roadmap and a list of suggested standards were published and disseminated in a form of CDs with a view to communicate with stakeholders when preparing ADWP-2014.
		000473	62000	10003		72100 - contract. serv. companies	2 175	100	2 175	100	0	
1.5.2.3	*Based on the results of activities 1.5.2.1-1.5.2.2, formulate design requirements with respect to energy efficiency in residential buildings under renovation along with drafts of regulatory documents establishing new standards and facilitating measures for energy efficiency improvement in such buildings.*	000473	62000	10003		71200 - international consultants	4 000	100	4 000	100	0	Fully implemented. The results containing in a report and recommendations prepared by local and international consultants allow to improve existing technical codes facilitating energy efficiency measures in housing under renovation. These recommendations have been incorporated in a draft text of the Complex Programme for Development of Energy Efficient Construction, Reconstruction and Modernization of Residential Buildings in 2013-2015 and up to 2020. This document is pending approval and adoption process to be finalized in the first quarter of 2014. More recommendations, included in the roadmap, have been communicated to stakeholders pending approval of its integration into annual standardization plans.
		000473	62000	10003		71300 - local consultants	1 320	100	1 320	100	0	
						Outcome 1 - total:	170 028	100%	132 187	78%	37 841	
Outcome 2: Enhanced capacity of the Belarusian specialists to implement and effectively enforce the new energy efficiency building standards and construction norms												
Output 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**											**The capacity building action plan for 2014 has been formulated on the basis of results of capacity need analysis and will be used for compilation of ADWP-2014 after approval by DEE.**

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.	000473	62000	10003		71300 - local consultants	1 200	100	0	0	1 200	Fully implemented. The analysis of target groups along with assessment o their capacity building have been conducted and the results have been pul a report in CD and hard copies and discussed with DEE specialists other stakeholders.
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.	000473	62000	10003		71300 - local consultants	1 200	100	0	0	1 200	Fully implemented. The capacity building action plan for 2014 have been c and discussed with DEE specialists and other stakeholders.
Output 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**											**The recommendations and ToR have been drafted for further compila updated and adjusted technical university curricular.**
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.	000473	62000	10003		71300 - local consultants	1 200	100	1 975	165	-775	Fully implemented. The critical analysis of curricula of different relevant Be universities has been conducted and the proposals for its improvement an updating have been presented in a project report. The report has been pul and disseminated among stakeholders in a form of CDs. Based on the rep recommendations for relevant university curricular updates have been draf presented at a round table for discussions (see below).
2.2.2	Organize a round table (ad-hoc meeting) to discuss relevancy of new university courses for education process in selected universities.	000473	62000	10003		71300 - local consultants	1 200	100	1 200	100	0	Fully implemented. A round table have been organized and held in Minsk o 18, 2013. About 60 representatives of stakeholders have participated. The area was how to enhance current education process to facilitate introductic energy efficiency improvement principals, approaches and techniques in development, construction and operation of residential buildings. The roun has agreed with the recommendations and ToR suggested by the project. suggested university courses and the ToR have been published and disser among stakeholders in a form of CDs with a view to receive indications fro selected universities as to their priorities, when preparing ADWP-2014.
		000473	62000	10003		72100 - contract. serv. companies	600	100	720	120	-120	
2.2.3	Prepare recommendations and draft ToRs for updating and adjusting curricula of selected relevant universities.	000473	62000	10003		71300 - local consultants	1 200	100	1 200	100	0	Partly implemented. The recommendations and ToR are being revised taki account stakeholders' comments above. To be submitted to the EE Deprtn Ministry of Architecture and Construction and Ministry of Education in the fi quarter of 2014 for review and approval. It is foreseen that these materials adopted in 2014, and the project will receive necessary indications from stakeholders as to content of teaching aids.
Output 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**											**Twenty two Belarusian specialists and decision-makers participated i study visits and three international events abroad dedicated to energy efficient and environmentally sustainable building construction and operation. The visitors have become acquainted with legal framework standards and polycies exercised in two leading European countries v regard to design, construction and operation of energy efficient reside buildings. As a result, they recommended activities intended for prom and facilitating energy efficiency measures in national housing.**
2.8.1	Monitor and cooperate with other international initiatives and prepare quarterly plans for forthcoming events dedicated to energy efficient and environmentally sustainable building construction and operation.	000473	62000	10003		71200 - international consultants	4 906	100	5 586	114	-680	Fully implemented. Different opportunities for cooperation with other relevar international initiatives have been evaluated and discussed with project inte consultants, DEE, project partners and other stakeholders. On this basis, q plans for forthcoming events and study visits have been prepared and appr DEE.
		000473	62000	10003		71300 - local consultants (translation)	240	100		0	240	
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.	000473	62000	10003		71200 - international consultants	4 906	100	5 586	114	-680	Fully implemented. Study tours in Germany and Austria have been organiz conducted. To implement this activity one international consultant has been engaged. The respective PMU staff and top officials from DEE, Ministry of Architecture and Construction, developers from project partner's organizatic visited demonstration sites and discussed with top specialists in the field of efficiency and leaders of relevant institutions and companies. Respective tri reports with recommendations have been issued intended for promoting an facilitating energy efficiency measures in national housing.
		000473	62000	10003		71300 - local consultants	480	100	480	100	0	
		000473	04000	00012		71300 - local consultants (translation)	2 240	100	599	27	1 641	
		000473	62000	10003		71600 - travel	21 300	100	21 300	100	0	

2.8.3	Provide informational support for Belarusian specialists and decision-makers in their participation in at least three international events.	000473	62000	10003		71200 - international consultants	3 906	100	4 575	117	-669	Fully implemented. Consulting services are being routinely provided to the Project Partners, specialists of DEE and other interested organizations (Oblast and Rayon level) in the field of energy efficiency improvement in housing. In particular, five presentations have been prepared and translated into English for specialists and decision-makers to assist them in taking active part in three international events. The topics covered by the said informational support included, inter alia, barriers to energy efficiency improvements and renewable energy development in the Belarusian residential sector and national policy for their removal, basic energy efficiency enhancement standards and design solutions, data concerning best available practices and technologies, data on the leading Belarusian companies and their energy efficiency profiles, as well as logistics notes for entire visits.
		000473	62000	10003		71300 - local consultants	720	100	720	100	0	
		000473	04000	00012		71300 - local consultants (translation)	3 360	100		0	3 360	
		000473	62000	10003		71600 - travel	15 840	100	19 678	124	-3 838	
2.8.4	Provide support for Belarusian specialists and decision-makers in organizing and implementation of study visits to similar UNDP projects.	000473	62000	10003		71300 - local consultants	1 200	100	1 408	117	-208	Partly implemented. Informational support (project briefs, topical areas, objectives and outcomes, current implementation status and achievements) has been provided to DEE, project experts and some of the project partners to meet and discuss with specialists and experts of several UNDP projects for energy efficiency improvement in housing (e.g., Kazakhstan, Georgia, Croatia, Northwest Russia). Meeting reports with recommendations for further cooperation have been compiled. With these UNDP projects, an agreement has been reached as to preparation for visits of some selected projects by Belarusian specialists in 2014.
		000473	04000	00012		71600 - travel	4 146	100	17 818	430	-13 672	
						Outcome 2 - total:	69 844	100%	82 845	119%	-13 001	
Outcome 3: Demonstrated energy and cost-saving potential of new energy efficiency measures in at least three new residential buildings in two Belarusian cities												
Output 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**											**Three sites for pilot projects have been finally identified and approved by the PSC. The project have investigated baseline architecture and engineering characteristics intended for two pilot buildings and suggested space-and-planning parameters, selected the most cost-effective performance, formulated other technical and design solutions, which include inter alia renewable energy technologies, in order to reduce heat and power consumption of the buildings at least by two times. Based on the results of these developments, the project has compiled RfP, ToR and technical specifications for the services concerning design of techniques, installations and equipment for energy efficiency improvement, prepared and conducted a tender, and selected a developer, which would be assigned for provision of the said services. The contract has been signed with NIPTIS, the leading Belarusian developer. The project industrial partners have been started baseline designs for three pilot buildings and NIPTIS has proceeded to develop its part of the design and construction documents. This activity will be finalized in the first quarter of 2014.**
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.	000473	62000	10003		71200 - international consultants	1 476	100	1 476	100	0	Fully implemented. The project conducted investigation of baseline architecture and engineering characteristics of two pilot buildings focusing on the number of flats and tenants, energy, heat and hot water consumption, and HVAC system requirements along with customer properties expected. The results of this study, including inter alia data concerning baseline energy consumption rate of about 60 kW-h/sq.m per year and other input data needed for further design and developemt of energy efficiency improvement measures, have been presented in two reports and discussed with project partners.
		000473	62000	10003		71300 - local consultants	5 640	100	5 640	100	0	
		000473	62000	10003		71300 - local consultants (translation)	240	100	240	100	0	
		000473	62000	10003		71600 - travel	987	100	331	34	656	
		000473	62000	10003		72100 - contract. serv. companies	11 500	100	11 500	100	0	
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.	000473	62000	10003		71200 - international consultants	4 476	100	4 476	100	0	Fully implemented. Based on the results of baseline study above, the space-and-planning parameters, other technical and design solutions, which includes inter alia renewable energy technologies, have been suggested in five project reports for two pilot buildings in Minsk and Grodno and discussed with project partners.
		000473	62000	10003		71300 - local consultants	5 640	100	5 640	100	0	
		000473	62000	10003		71300 - local consultants (translation)	240	100	371	155	-131	
		000473	62000	10003		71600 - travel	987	100	331	34	656	

		000473	62000	10003		72100 - contract. serv. companies	11 500	100	11 500	100	0	
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.	000473	62000	10003		71200 - international consultants	1 476	100	1 476	100	0	Fully implemented. The most cost-effective performance of two pilot buildir been suggested in three project reports, discussed with project partners ar incorporated into RfP, ToR and technical specifications for the services "Development of design and construction documentations for techniques, installations and equipment for energy efficiency improvement of two resid buildings in the Republic of Belarus".
		000473	62000	10003		71300 - local consultants	5 640	100	4 895	87	745	
		000473	62000	10003		71300 - local consultants (translation)	240	100	240	100	0	
		000473	62000	10003		71600 - travel	987	100	331	34	656	
		000473	62000	10003		72100 - contract. serv. companies	11 500	100	11 550	100	-50	
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.	000473	62000	10003		71200 - international consultants	1 476	100	1 476	100	0	Partly implemented. Some of the preconstruction simulations have been pi cooperation with the NIPTIS (the developer selected through the tender pr particular several design options have been considered, calculated and pr for the forced ventilation system, hot water supply system based on heat p and hot water supply system based on solar heating panels. Final choice o options will be made in the first quarter of 2014.
		000473	62000	10003		71300 - local consultants	5 640	100		0	5 640	
		000473	62000	10003		71300 - local consultants (translation)	240	100	240	100	0	
		000473	62000	10003		71600 - travel	987	100		0	987	
		000473	62000	10003		72100 - contract. serv. companies	26 500	100	26 500	100	0	
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.	000473	62000	10003		71200 - international consultants	1 476	100	1 476	100	0	Partly implemented. The pre-development design have been started in coc with the NIPTIS (the developer selected through the tender process). The specifications is being drafted with preliminary parameters of the equipmer proposed in the design options said above. To be completed in the first qu 2014.
		000473	62000	10003		71300 - local consultants	5 400	100		0	5 400	
		000473	62000	10003		71300 - local consultants (translation)	240	100	240	100	0	
		000473	62000	10003		71600 - travel	987	100		0	987	
		000473	62000	10003		72100 - contract. serv. companies	16 500	100	16 500	100	0	
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.	000473	62000	10003		71300 - local consultants	5 640	100		0	5 640	To be completed in the first quarter of 2014.
		000473	62000	10003		71600 - travel	987	100		0	987	
		000473	62000	10003		72100 - contract. serv. companies	62 449	100	62 449	100	0	
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.	000473	62000	10003		71300 - local consultants	5 400	100		0	5 400	To be completed in the first quarter of 2014.
		000473	62000	10003		71600 - travel	987	100		0	987	
		000473	62000	10003		72100 - contract. serv. companies	5 000	100	5 000	100	0	
	Bank charges	000473	62000	10003		74500 - Bank fee	0	100	32	0	-32	
						Outcome 3 - total:	202 438	100%	173 910	86%	28 528	

Outcome 4: Documented, disseminated and institutionalized project results providing a basis for further replication												
Output 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**											**Six interviews have been given, six press-releases and briefs, and more than 25 printed materials including two brochures have been prepared and published.**
4.1.1	Organize and carry out an ongoing information campaign (interviews, press-releases, etc.) about the Project activities.	000473	62000	10003		71400 - contract. serv. individ.	600	100	600	100	0	Fully implemented. During 2013, two project briefs and four press-releases have been published, six interviews have been given to top press-agencies and specialized magazines, 25 papers and articles and 4 news announcements have been issued, and one press-conference has been organized and held.
4.1.2	Prepare and publish hand-books, leaflets, brochures, etc. for professionals about the best practices concerning energy efficiency improvement in residential buildings.	000473	62000	10003		71300 - local consultants	1 550	100	1 500	97	50	Fully implemented. A brochure for professionals about the best practices concerning energy efficiency improvement in residential buildings has been prepared, passed proof-reades and designers and handed over to a publisher. To be published by the end of 2013.
		000473	04000	00012		74200 - audio & video prod.	3 660	100	1 000	27	2 660	
4.1.3	Prepare and publish hand-books, leaflets, brochures, etc. for professionals about the best practices concerning energy audit in residential sector.	000473	62000	10003		71300 - local consultants	950	100	950	100	0	Fully implemented. A brochure for professionals about the best practices concerning energy audit of residential buildings prepared and published in 300 copies and disseminated among project partners, developers, decision-makers and students.
		000473	04000	00012		74200 - audio & video prod.	3 660	100	1 500	41	2 160	
4.1.4	Prepare and publish hand-books, leaflets, brochures, etc. for general public about the best practices concerning energy efficient management of households.	000473	62000	10003		71300 - local consultants	1 200	100	1 200	100	0	A material for general public about the best practices concerning energy efficient management of households has been prepared, the brochure text has been submitted to a proof-reader. It will be published in 2014.
		000473	62000	10003		71400 - contract. serv. individ.	500	100		0	500	
		000473	62000	10003		72400 - communicat.	0		105	0	-105	
		000473	04000	00012		74200 - audio & video prod.	4 650	100	2 000	43	2 650	
4.1.5	In cooperation with the Ministry of Education and the EE Department, provide informational supports to the "Energy Marathon" Republican Contests.	000473	62000	10003		71300 - local consultants	360	100	360	100	0	Fully implemented. A support has been provided for 2012-2013 "Energy Marathon" Republican Contest. The PMU was taking part in the Contest Committee. The Contest's materials have been prepared, published and disseminated in 500 CDs among schools relevant Universities and the Ministry of Education.
		000473	62000	10003		74200 - audio & video prod.	1 500	100	1 513	101	-13	
		000473	62000	10003		71600 - travel	330	100	330	100	0	
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 and interagency agreements for compiling the required primary data**											**Draft recommendations for an institutional framework of the national energy conservation and GHG reduction MRV system in the construction sector have been prepared and discussed.**
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.	000473	62000	10003		71300 - local consultants	3 000	100	3 000	100	0	A report with preliminary recommendations for institutional system and procedures for monitoring, reporting and verification of the energy savings and GHG emission reductions in the construction sector has been prepared and discussed with specialists in DEE and Climate Change Division of the Ministry of Natural Resources and Environmental Protection. The report has been published and disseminated among stakeholders in a form of CDs (ca. 70 copies).
Output 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**											**Three International Conferences on best practice in energy efficiency improvement in residential buildings have been organized and held in 2013. More than 500 participants have received knowledge and information and have had opportunity to discuss about the best practices and policies exercised in Western and Eastern Europe, Russia and Ukraine in the field of design, construction and operation of the energy efficient buildings.**
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.	000473	62000	10003		71200 - international consultants	3 800	100	3 800	100	0	Three International conferences have been organized and held on the best practice and policy in energy efficiency improvement in residential buildings under the auspices of the Project and in cooperation with the DEE, Ministry of Architecture and Construction, UNDP and Austrian Energy Agency. The conferences attracted more than 500 participants from eight countries who have received new knowledge, current information and timely opportunity to discuss about the best practices and policies exercised in Western and Eastern Europe, Russia and Ukraine in the field of design, construction and operation of the energy efficient buildings.
		000473	62000	10003		71300 - local consultants	1 200	100	1 200	100	0	
		000473	62000	10003		71600 - travel	980	100	1 197	122	-217	
		000473	62000	10003		72100 - contract. serv. companies	2 700	100	1 922	71	778	
		000473	04000	00012		72100 - contract. serv. Companies / 72700 Atlas	3 500	100	4 137	118	-637	

		000473	04000	00012		71300 - local consultants (translation)	420	100	866	206	-446	
		000473	04000	00012		74200 - audio & video prod.	2 250	100	431	19	1 819	
Output 4.7	**Regularly updated project website with a link to an Expanded Energy 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.	000473	62000	10003		71400 - contract. serv. individ.	2 400	100	2 400	100	0	Fully implemented. The ToR for the Project Website has been prepared.
4.7.2	Develop and launch the Project Website.										0	See www.effbuild.by
4.7.2.1	*Prepare the Project Website's infological architecture and design of the user interface, and develop its HTML version.*	000473	62000	10003		71400 - contract. serv. individ.	2 910	100	782	27	2 128	Fully implemented. The website infological structure and design have been prepared by the Project PR Specialist and a company hired for this task, discu and agreed with UNDP and DEE.
4.7.2.2	*Develop the Project Website prototype version.*	000473	62000	10003		71400 - contract. serv. individ.	2 400	100		0	2 400	Fully implemented. The website prototype version has been issued and teste
4.7.2.3	*Launch the Project Website.*	000473	62000	10003		71400 - contract. serv. individ.	2 190	100		0	2 190	Fully implemented. The website has been launched under www.effbuild.by.
		000473	04000	00012		74200 - audio & video prod./72800 Atlas	2 040	100	3 250	159	-1 210	
Output 4.8	**Annual market monitoring reports for new building construction with the emphasis on energy efficiency aspects**											**To be completed in the first quarter of 2014.**
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.	000473	62000	10003		71300 - local consultants	3 000	100		0	3 000	To be completed in the first quarter of 2014.
Output 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 has been prepared and discussed, and recommendations for adjustments of respective interventions of the proj approved by stakeholders.**
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	000473	62000	10003		71200 - international consultants	4 000	100	4 000	100	0	Fully implemented. Three reports on the baseline situation in the field of energ efficiency improvements in residential buildings have been prepared by projec and international consultants.
		000473	62000	10003		71300 - local consultants	2 640	100	2 640	100	0	
		000473	62000	10003		71600 - travel	987	100	987	100	0	
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.	000473	62000	10003		71200 - international consultants	5 000	100	5 000	100	0	Fully implemented. The Inception Report prepared and discussed with UNDP a DEE.
		000473	62000	10003		71300 - local consultants	1 320	100	1 320	100	0	
		000473	04000	00012		71300 - local consultants (translation)	360	100	360	100	0	
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.	000473	62000	10003		71200 - international consultants	3 905	100	3 905	100	0	Fully implemented. The Project Inception Seminar has been organized and hel discuss and adopt the Inception Report. All local and international project consultants have prepared and presented their views on the project strategy. Approx. 70 particiapnts including project stakeholders and partners attended th seminar. As a result of the discussions the audience has endorsed ADWP-201 and recommended it for implementation. The Inception Seminar was followed l PSC meeting that has approved the project strategy and ADWP-2013.
		000473	62000	10003		71300 - local consultants	600	100	8 594	1 432	-7 994	
		000473	62000	10003		71600 - travel	465	100	465	100	0	
		000473	04000	00012		72100 - contract. serv. companies	4 000	100	4 000	100	0	

		000473	04000	00012		71300 - local consultants (translation)	210	100	210	100	0	
		000473	62000	10003		74500 - Bank fee			55	0	-55	
		000473	04000	00012		74500 - Bank fee			11	0	-11	
						Outcome 4 - total:	75 237	100%	65 590	87%	9 647	
Effective project management and monitoring ensured												
PM1	Project monitoring and reporting.	000473	62000	10003		72100 - contract. serv. companies	1 000	100	33	3	967	A draft of ADWP-2013 was presented and discussed in two stakeholders meetings (Jan 29 and Feb 18, 2013). ADWP-2013 final version was adopted in Apr 2, 2013 during the first meeting of the PSC. In 2013, three meetings of the PCS were organized and held. Budget revision was prepared and submitted in due time. The semiannual reports were prepared and submitted to Ministry of Economy as required, until January 15 and July 15, 2013.
PM2	Project management and project office functioning.	000473	62000	10003		71300 - local consultants	4 250	100	2 500	59	1 750	The premises for Project's office has been rented and fully equipped. The Project's stuff has been composed of three SC holders. In addition, ten national and two international consultants have been hired under IC agreements.
		000473	62000	10003		71600 - travel			217	0	-217	
		000473	62000	10003		71400 - contract. serv. individ.	59 965	100	46 163	77	13 802	
		000473	62000	10003		72800 - IT Equipment	3 900	100	2 498	64	1 402	
		000473	62000	10003		72200 - Furniture& Equipm.	3 000	100	491	16	2 509	
		000473	62000	10003		72300 - Equipment			283	0	-283	
		000473	62000	10003		72400 - communicat.	2 000	100	1 500	75	500	
		000473	04000	00012		73400 - equipment services	1 000	100	500	50	500	
		000473	62000	10003		72500 - supplies	1 200	100	1 446	121	-246	
		000473	04000	00012		73100 - utilities	5 000	100	4 000	80	1 000	
		000473	62000	10003		74200 - audio & video prod./media			6 606	0	-6 606	
		000473	000473	000473		74500 - miscellan.	1 200	100	634	53	566	
						PM - total:	82 515	100%	66 871	81%	15 644	
						Grand total:	600 062	100%	521 403	87%	78 659	

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