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Russian Federation

Terminal Evaluation of GEF Project:

Building Energy Efficiency in the North West of Russia

(GEF PMIS No: 3659; UNDP PIMS No: 4131)
October-December 2017

Terminal Evaluation Report

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April 2018

Acknowledgements

The TE Team wishes to acknowledge with gratitude the time and effort expended by all project participants and stakeholders during the course of terminal evaluation in general and the evaluation missions in particular. This provided valuable insights, candid perspectives, and made the evaluation process more enjoyable. In particular, We wish to thank the Project Team headed by the Project Manager Mr. Vitaly Bekker, Ms. Maria Lukina-Lebedeva, Project Assistant, UNDP PSO, especially Ms. Irina Bredneva, Acting Head of UNDP Project Support Office in Russia and Ms. Olga Martynenko, Projects Associate, UNDP/GEF Istanbul Regional Hub Mr. John O'Brien, Regional Technical Advisor on climate change mitigation, National Project Director, Mr. Igor Kozhukhovsky, project experts, Mr. Sergey Tsakunov, Economy Advisor, Ms. Anna Krasnova, Regional Energy Manager in the Pskov region, Ms. Natalia Bekryasheva, Regional Energy Manager in the Vologda region, representatives of Project Partners, for their hospitality, discussions on their experiences in implementing this Project as well as on general matters related to the promoting energy efficiency in North-West of Russia. We hope that this report will contribute to the planning and implementation of the programmes and measures aimed at the further improvement of Energy Efficiency in the building sector of North-West of Russia.

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i. Executive Summary

Project Summary Table

Project Title:	Building Energy Efficiency in the North West of Russia	
GEF Project ID:	3659	
UNDP Project ID:	4131	
Country:	Russian Federation	
Region:	Europe and Central Asia	
Focal Area:	Climate Change	
Strategic Program:	SP1: Promoting energy efficiency in residential and commercial buildings	
Executing Partner	- Office of Plenipotentiary Representative of the President of the RF in the North West Okrug, Administrations of the Arkhangelsk, Pskov, and Vologda regions (June 2010 - March 2014) - Federal State Budgetary Organization Russian Energy Agency under the Ministry of Energy of the Russian Federation (April 2014 - Present)	
Other project partners	Regional Administrations of the Arkhangelsk, Pskov and Vologda oblasts	
	at endorsement (Million US$)	*at completion (Million US$)*
GEF financing:	5.840	5.840
IA/EA own:	0	0
Government:	11.490 2.540 – in-kind	13.863 (as of November 2017) Plus 2.540 in-kind
Other (Private sector):	13.470	2.430 (as of November 2017)
Total co-financing:	27.500	18.833 (as of November 2017)
Total Project Cost:	33.340	24.673 (as of November 2017)
ProDoc Signature (date project began):		11/11/2010
(Operational) Closing Date:	Proposed: 30/11/2015	Actual: 30/11/2017

Project Description (brief)

The UNDP-supported GEF-financed project "Building Energy Efficiency in the North-West of Russia" (BEENWR Project) aims to improve energy efficiency in new and existing buildings in the North West of Russia: Pskov, Vologda and Arkhangelsk Oblasts. This is in line with the priorities of the energy policy of Russian Federation and UNDP as well.

The share of the housing sector in overall energy consumption was steadily growing before the BENWR Project initiation, namely from 13% in 1990 to 34% in 2006. Consequent Greenhouse Gas (GHG) emissions also were growing and CO_2 (main GHG related to the fuel combustion) annual per capita emissions from the construction and housing sector of Russia, reached 10.6 tCO_2 in 2006. Therefore, to respond to the national priorities, among others including effective use of energy resources and

improve environmental indicators, increasing EE in buildings became a priority direction in the development of construction sector.

The development context for this project is also consistent with the UNDP and GEF priorities globally and in Russia as well. It falls within the GEF-4 Strategic Objective CC – 1 "To promote energy-efficient technologies and practices in the appliances and buildings"; the BEENWR Project was being implemented under the UNDP-led GEF Global Framework for Promoting Low Carbon Buildings with a primary focus on two thematic approaches promoted by the Global Framework: a) Promotion and increased uptake of High Quality Building Codes and Standards; and b) Developing and Promoting Energy Efficient Building Technologies, Building Materials and Construction Practices.

Achievement of the objective was planned to achieve based on the building local capacities for and demonstrate local EE solutions through the following three components: 1) An enabling environment and enforcement capacities for improved EE at the provincial and local levels; 2) Capacity building and know-how; and 3) Demonstration of local energy-efficient solutions and management models.

The BEENWR Project consists of three components: (i) An enabling environment and enforcement capacities for improved EE at the provincial and local levels; (ii) Capacity building and know-how; and (iii) Demonstration of local EE solutions and management models.

Evaluation Ratings Table

Monitoring and Evaluation	Highly Satisfactory (HS)	Satisfactory (S)	Moderately Satisfactory (MS)	Moderately Unsatisfactory (MU)	Unsatisfactory (U)	Highly Unsatisfactory (HU)
M&E design at Entry			✓			
M&E Plan Implementation			✓			
Overall Quality of M&E			✓			
IA & EA Implementation/Execution	Highly Satisfactory	Satisfactory	Moderately Satisfactory	Moderately Unsatisfactory	Unsatisfactory	Highly Unsatisfactory
Quality of UNDP (Implementing Agency) Implementation			✓			
Quality of Executing Agency Execution			✓			
Overall Quality of IA & EA Implementation/Execution			✓			
	Highly Satisfactory	Satisfactory	Moderately Satisfactory	Moderately Unsatisfactory	Unsatisfactory	Highly Unsatisfactory
Achievement of Objective			✓			
Achievement of Outcomes	Highly Satisfactory	Satisfactory	Moderately Satisfactory	Moderately Unsatisfactory	Unsatisfactory	Highly Unsatisfactory
Overall Achievement of Outcomes						
Outcome 1			✓			
Outcome 2		✓				
Outcome 3			✓			

	Relevant (R)	Not Relevant (NR)
Relevance	✓	

	Highly Satisfactory	Satisfactory	Moderately Satisfactory	Moderately Unsatisfactory	Unsatisfactory	Highly Unsatisfactory
Effectiveness			✓			
Efficiency				✓		

	Likely (L)	Moderately Likely (ML)	Moderately Unlikely (MS)	Unlikely (U)
Overall Sustainability	✓			
Probability of sustainability due to Financial risks		✓		
Probability of sustainability due to Socio-economic risks	✓			
Probability of sustainability due to Institutional framework and governance risks	✓			
Probability of sustainability due to Environmental risks	✓			
OVERAL RATING	**MS**			

Summary of conclusions, recommendations and lessons

Overall, this BEENWR Project has had a substantial, sustainable effect on improvement of energy efficiency in residential buildings sector in North West of Russia. Through the implementation of demo projects, it demonstrated the best practices of design, energy performance and energy management in new/renovated residential and public buildings; through the capacity building activities and outreach program it created a local capacity and capabilities of local dedicated institutions and professionals for replication and scaling up of these activities in the sustainable way. The most significant changes due to the BEENWR Project activities, include putting of EE and energy management in high political agenda and creation of tools and capacities for the development of Oblast-level strategies and action plans.

The project t implementation can be divided in two halves – a first half, which really struggled and a second half, which showed considerable improvement. During the second half of the project, a major focus shifted to the introducing EMIS and energy management practices, under the leadership of Russian Energy Agency. This was resulted in an excellent job, expanding the scope of the project intervention compared with the project document (with simple energy management software just for Pskov). EMIS was effectively introduced in Pskov and Vologda oblasts with a potential for scaling up and rolling out across the entire country.

The BEENWR Project has delivered most of planned results, although not all of them on time.

In conclusion, this BEENWR Project which rated as MU or marginally unsatisfactory at the time of mid-term review in January 2014, has been improved to MS or marginally satisfactory by the end of the project at the end of 2017.

One Corrective Action Request (CAR) has been raised by the TE Team for the Monitoring & Evaluation: to develop, prepare and release a final report including lessons learned study, which outlines the main lessons learned from this project.

One recommendation is made to reinforce the benefits of the EERB Project.

Recommendation 1: To update estimation of GHG reductions due to the application of the EMIS in Pskov and Vologda oblasts.

In November 2017, international company AF Consult revised GHG emissions reduction calculations, and presented updated figures to the TE Team. However, new data on energy consumptions in

buildings, which might be entered after November 2017, would lead to additional GHG reductions, because it is obvious that as many buildings are entered as higher reduction is achieved due to the management of the energy consumption in the buildings.

For future directions underlining main objectives it is recommended:

Recommendation 2: To launch the process of certification of EMIS in accordance with the existing procedures and to launch EMIS for the entire Russian Federation, coordinated by the Russian Energy Agency, including securing funds from the Federal Budget for EMIS scale up and roll out.

One of the possibilities for scaling up EMIS could be a development of a proposal for the UNDP Russia Trust Fund to implement and roll out EMIS in countries in Central Asia and in Belarus.

Best and worst practices in addressing issues relating to relevance, performance and success

It was expected that the implementation of demo projects will take long (early warnings were presented in the first PIRs). Nevertheless, it took even longer. Best and worst practices are directly related to the level of communication with the decision maker Partners to resolve timely the issues.

Best practices:

- Implementation and scale up of EMIS
- Hiring of regional energy managers
- Training materials

Worst practices:

- Not working at Federal Level on groundbreaking legislation
- Not working with financial institutions or leveraging non-grant financing or private sector investment

ii. Acronyms and Abbreviations

AWP	-	Annual work plan
BEENWR	-	Building Energy Efficiency in North-West of Russia
CPAP	-	Country Programme Action Plan
CTA	-	Chief Technical Adviser
DSM	-	Demand-side management
EE	-	Energy Efficiency
EMIS	-	Energy Management Information System
EU	-	European Union
FSP	-	Full-size Project
GEF	-	Global Environment Facility
GHG	-	Greenhouse gases
M & E	-	Monitoring & Evaluation
MTR	-	Mid-Term Review
NIM	-	National Implementation Modality
NPD	-	National Project Director
PA	-	Project Assistant
PIF	-	Project Identification Form
PIR	-	Project Implementation Review
PM	-	Project Manager
PPG	-	Project Preparation Grant
ProDoc	-	Project Document
PSC	-	Project Steering Committee
PSO	-	Project Support Office
REA	-	Russian Energy Agency
RTA	-	Regional Technical Adviser
TA	-	Technical assistance
TE	-	Terminal Evaluation
ToR	-	Terms of Reference
TT	-	Tracking Tool
UNDAF	-	United Nations Development Assistance Framework
UNDP	-	United Nations Development Programme
UNFCCC	-	United Nations Framework Convention on Climate Change

1. Introduction

This Terminal Evaluation (TE) report is prepared in accordance with the contract No. 2017/022/01, signed between the United Nations Development Programme (UNDP), the Global Environment Facility (GEF) Implementing Agency for this project, and the individual contractor for performing the services of International Consultant to conduct the TE (herein referred to as the "Consultant"). The report summarizes the findings of the TE for the UNDP-supported GEF-financed full-size project (FSP) entitled "Building Energy Efficiency in the North West of Russia" (herein referred to as the "BEENWR Project").

1.1 Purpose of the Evaluation

The GEF implementing agencies and UNDP among them, are required to conduct a TE at project completion for all GEF Full-size projects (FSPs). The purpose of the TE is to assess the efficiency and effectiveness of a project in achieving its intended results. TE also assesses the relevance and sustainability of the outcomes. According to "Project-Level Evaluation. Guidance for Conducting Terminal Evaluations of UNDP-Supported, GEF-Financed Projects"[1], evaluations have the following complementary purposes:

- To promote accountability and transparency, and to assess and disclose the extent of project accomplishments
- To synthesize lessons that can help to improve the selection, design and implementation of future GEF financed UNDP activities
- To provide feedback on issues that are recurrent across the UNDP portfolio and need attention, and on improvements regarding previously identified issues
- To contribute to the overall assessment of results in achieving GEF strategic objectives aimed at global environmental benefit
- To gauge the extent of project convergence with other UN and UNDP priorities, including harmonization with other UN Development Assistance Framework (UNDAF) and UNDP Country Programme Action Plan (CPAP) outcomes and outputs.

1.2 Scope & Methodology

The TE Team Leader (TL) has developed a methodology for the execution of the TE in accordance with the "Guidance for Conducting Terminal Evaluations of UNDP-Supported, GEF-Financed Projects", according to which the TE among others shall include evaluation of:

- Project strategy (Project design / Formulation, Project planning matrix, use of SMART[2] indicators and targets, assumptions and risks): To what extent is the project strategy relevant to country priorities, country ownership, and the best route towards expected results?
- Project implementation (including Adaptive management): Review of management arrangements, work planning, Monitoring and Evaluation system, reporting and communications, cost-effectiveness, risk management etc.

[1] http://web.undp.org/evaluation/documents/guidance/GEF/UNDP-GEF-TE-Guide.pdf

[2] Specific, Measurable, Achievable, Relevant and Time-Bound

- Project results (evaluated against relevance, effectiveness, efficiency, sustainability and impact): Assessment of the extent of the achievement of the expected outcomes and objectives

As a first step, the Evaluation Team, consisted of the International Consultant and National Consultant (Consultants), developed an approach for conducting of TE, which was based on the clear understanding of the task and ways of addressing it. The main elements of the applied approach were as follows:

- The scope of the TE to cover the entire Project and its components
- The TE to be based on the analysis of Project-related documents as well as the evidenced information from different sources, which shall be cross-checked for consistency
- In accordance with the ToR, to conduct TE mission to hold interviews and visit project sites. In order to use the TE mission period effectively, the interviews of the stakeholders should be thoroughly prepared. The interviews should help to better understand the Energy Efficiency (EE) policy priorities in North-West of Russia, overall environment in which the project was being implemented, status of the stakeholders' involvement, prospects for scaling-up, etc.

  Initially, as per the ToR one TE mission was planned for October 2-11, 2017.
- Review of GEF Climate Change Tracking Tool and input data used

The developed approach in general worked effectively.

This TE has been executed in accordance with the guidance provided in the ToR except that due to time constraints, a second TE mission was required. The reason was that initially planned TE mission was mostly focused on the visits to the Pskov (visited by the TE team), Vologda (visited by the TE team) and Arkhangelsk Regions (not visited by the TE team) and interviews of stakeholders there. However, after the desk study of project related documents, it became obvious to the TE Team that there is a big difference in the BEENWR Project implementation before and after the Mid-term Review (MTR), which was completed in January 2014. Indeed, after the MTR the National Executive Agency was changed, and the new one, the Russian Energy Agency (REA) of the Ministry of Energy of Russian Federation, introduced and implemented more advanced implementation strategy.

The TE team has interviewed first manager of the EERB Project Mr. Grigory Markin (was managing from 2011 until 2013) and the second project manager Mr. Andrei Karpus (from mid-2013 until late 2014) and the third project manager Mr. Vitaly Bekker, who started in January 2015 under the leadership of the Russian Energy Agency.

The second BEENWR Project Manager was replaced shortly after the MTR 2014 and these changes greatly facilitated to the achievement of the planned Objective and Outcomes as it became clear that the combination of a third Project Manager with the strong support of the Russian Energy Agency led to significant improvements in the project since 2014 onwards.

Since the scope of TE includes the evaluation of the project throughout the whole duration of its implementation, the TE Team needed more interviews and discussions with the key stakeholders than initially planned in accordance with the ToR. This need for the additional interviews wasn't possible to predict before the agreeing of the duration and dates of the TE mission because of circumstances of the TE start-up. In fact, this TE was started just after the signing of the contracts with the TE Team in order to allow the TE Team to attend the Closing Event of the BEENWR Project.

During the initial TE mission the TE Team has met all key stakeholders[3] with the exception of Ms. Vera Grishina, who was Deputy National Project Director for the first three years of the EENWR Project implementation until the Russian Energy Agency took over. The stakeholders answered all the questions of the TE Team as well as provided valuable information from their fields of activities related either to the Project implementation (including implementation of demo projects and installation of Energy Management Information System – EMIS) or general policy, legal, regulatory, institutional frameworks, needs and actual opportunities for investments in buildings (both, public and residential).

The initial TE mission involved the Consultants' attendance at the Closing Event of the BEENWR Project, organized on October 4, 2017 and which included Closing meeting of the Project Steering Committee (PSC) and International Round Table discussion "International Experience on Energy Efficiency in Buildings". The Consultants also attended a meeting of the Regional Energy Mangers organized by the BEENWR Project on October 3, 2017. The closing meeting of the PSC was chaired by Mr. Igor Kozhukhovskiy, National Project Director of the BEENWR Project. The meeting among others was attended by the Acting Head of the UNDP Project Support Office in Russia, the UNDP Regional Technical Advisor (RTA) on climate change mitigation, Representatives of the Government of the Russian Federation (Department of Industry and Infrastructure of the Government, Department of Housing and Communal Services of the Ministry of Construction, Department for State Regulation of Tariffs, Infrastructural Reforms and Energy Efficiency of the Ministry of Economic Development), Association of energy service companies, etc. Attendance of these events greatly helped the Consultants to understand problems the BEENWR Project dealt with, scale of stakeholders' involvement and evaluation of the BEENWR Project results by the main Partners. The Consultants used the opportunity and held several interviews and discussions not only with the BEENWR Project Team and the UNDP Project Support Office (PSO) and RTA but also with other key stakeholders.

After the completion of the TE mission the TE Team has had a Skype discussion with the UNDP PSO and expressed its opinion on necessity of additional interviews mostly with the stakeholders related to the Component 1 of the BEENWR Project as well as with the NPD (from the Russian Energy Agency). It was agreed to organize additional TE mission, which took place during November 22-25, 2017, during which the TE Team has got answers on all remaining questions.

Based on the above it is the Consultants' opinion that the information obtained during the TE and included in this Report is credible and reliable.

1.3 Structure of the evaluation report

This TE Report is structured according to the TE ToR, which in turn is compliant with "Project-Level Evaluation, Guidance for Conducting Terminal Evaluations of UNDP-Supported GEF-Financed Projects", UNDP 2012.

The report consists of three main parts and annexes:

Chapter 2 – description of the BEENWR Project, problems sought to address, project objectives, baseline indicators, expected results, overview of stakeholders, etc.

Chapter 3 – description of the findings of the TE regarding:

[3] Most of the stakeholders were interviewed by the both TE Consultants; after the TE mission, some stakeholders were interviewed by the National Consultant only (however, the evaluation questions were prepared by the TE Team)

- Project design/formulation
- Project implementation
- Project results
- Sustainability

Chapter 4 – Conclusions, Recommendations and Lessons

Annexes – TE ToR, Evaluation question matrix, List of persons interviewed, List of documents reviewed, etc.

2. Project Description and Development Context

The Project "Building Energy Efficiency in the North-West of Russia" aims to improve energy efficiency in new and existing buildings in the North West of Russia: Pskov, Vologda and Arkhangelsk Oblasts. This objective was planned to achieve based on the building local capacities for and demonstrate local EE solutions through the following three components: 1) An enabling environment and enforcement capacities for improved EE at the provincial and local levels; 2) Capacity building and know-how; and 3) Demonstration of local energy-efficient solutions and management models. These components are described in detail below.

The share of the housing sector in overall energy consumption was steadily growing before the BENWR Project initiation, namely from 13% in 1990 to 34% in 2006. Consequent Greenhouse Gas (GHG) emissions also were growing and CO_2 (main GHG related to the fuel combustion) annual per capita emissions from the construction and housing sector of Russia, reached 10.6 tCO_2 in 2006. Therefore, to respond to the national priorities, among others including effective use of energy resources and improve environmental indicators, increasing EE in buildings became a priority direction in the development of construction sector.

Before the BEENWR Project, broad market penetration of the EE products and technologies was restricted by low energy prices in the country (6-7 times lower compared with the international prices). However, internal energy costs started increasing rapidly in parallel with Russia's integration into international markets. As a result, the price trends constituted direct economic incentives for EE investments in the building sector.

In November 2009 the Government of the Russian Federation by its Decree No. 1715-r approved Energy Strategy of Russia for the Period up to 2030, in which a big attention was paid to the EE including in the building sector. For instance:

- Energy saving in the heat supply industry was supposed to be executed in heat consumption systems through the reconstruction and new construction of buildings with the use of heat resistant structures, thermal automation, energy efficient equipment and heat pipelines, as well as high technological efficiency of the whole process of heat consumption, affordability of its control and the possibility to manage it
- EE of building should be increased, compared with 2005 level, by 15, 40 and 50% by 2015, 2022 and 2030 respectively.
- This target was planned to be achieved through the developing a system of prospective regulations, standards and norms providing for:
    - Increased responsibility for irrational and inefficient use of energy by including requirements for heat loss in buildings
    - Implementing special measures to improve EE in housing and communal complex, including by introducing a method of return on investments, new mandatory construction norms and regulations for effective use of energy not only for housing properties, but also for public, commercial and industrial buildings
    - Improving EE of the budget sector, including by providing to budget organizations the right to dispose the savings generated from implementing energy saving projects in accordance with the Russian budget laws

The development context for this project is also consistent with the UNDP and GEF priorities globally and in Russia as well. It falls within the:

- GEF-4 Strategic Objective CC – 1 "To promote energy-efficient technologies and practices in the appliances and buildings ". The BEENWR Project was being implemented under the UNDP-

led GEF Global Framework for Promoting Low Carbon Buildings with a primary focus on two thematic approaches promoted by the Global Framework: a) Promotion and increased uptake of High Quality Building Codes and Standards; and b) Developing and Promoting Energy Efficient Building Technologies, Building Materials and Construction Practices.

2.1 Project Start and Duration

The BEENWR Project officially started after the signing of the project document (ProDoc) on November 11, 2010. The Project Team, which consisted of a Project Manager and Project Assistant, was appointed in April-May 2011. The inception workshop was held on June 20, 2011 in St. Petersburg, which was followed by the first meeting of the Project Steering Committee (PSC) held on June 21, 2011.

The original duration of the BEENWR Project was 5 years, i.e. until November 2015 (according to the first PIR (2012) the closing date is January 30, 2016). By the end of 2015 the duration was extended until December 31, 2017 via an approved no-cost extension, i.e. actual duration of the BEENWR Project equals to 7 years. This is in line with the recommendation of Mid-term Review (MTR) of the BEENWR Project, according to which "a project extension of 1 or 2 years may be required".

2.2 Problems that the project sought to address

The problems to be addressed were identified at the early stages of the BEENWR Project. As stated in the Project Identification Form (PIF), submitted to the GEF in January 2008, rapid growth of energy prices in Russia in 2000ies created financial incentives for energy savings in the building sector including in construction of new and retrofit of existing buildings. However, these incentives haven't lead to the actual investments aimed at the improvement of the energy performance of the buildings due to the various barriers. The following main problems were described in the Project Document (ProDoc):

- **Problem: low energy performance of buildings and heat networks**
  Steady growth of energy consumption in Russia's communal and housing sector has been observed since 2002 and the share of the housing sector in overall energy consumption has been increased from 13% in 1990 to 34% in 2006 that among others caused high per capita annual CO_2 emissions from the construction and housing sector - 10.6 tCO_2/yr. At the same time energy performance of the residential buildings were far below the best international practices. Indeed, specific energy demand per square meter in residential buildings in the North-West region of Russia averaged 29.2 W/m^2 while in Denmark the - 16 W/m^2 only. The heat losses also were high – up to 70% of the generated heat wasn't delivered to the end consumers (40% of losses during transportation; 30% at the buildings). One of the reasons for high losses was inadequate thermal characteristics of main construction elements (walls, windows, basement, roof, ventilation). Therefore, there was an urgent need in the improvement of the energy performance of buildings. The BEENWR Project was designed to ensure 40-50% savings in energy consumption
- **Problem: Non-implementation of the building codes**
  Building codes in Russia were compliant to the standards and energy efficiency norms applied in EU states. Key requirements to building energy efficiency included in the EU directives have been already reflected in the 2003 Russian federal construction codes (with an exception for heating boilers). However, these codes were mostly not being implemented at the design, construction and maintenance phases and thus, there was a need in their enforcement.

Another issue was that a comprehensive policy and legislative basis for improving EE existed at the federal-level (Presidential Decree of 04.06.2008 No. 889 "About some measures to improve energy and environmental efficiency of the Russian economy"; Federal law "On Energy Saving" approved in November 2009; Building regulation 23-02 "Thermal protection of buildings"; Building regulation 31-01-2003 "Residential apartment buildings"), but not at Regional level. Therefore, there was an urgent need to "translate" federal-level EE legislation and regulations into the sub-federal legislative and regulatory framework, i.e. the regional (okrug), provincial (oblast), and municipal levels.

- **Problem: absence of good domestic practices**
  The challenge was to increase the market for EE products and services and to ensure that the existed construction boom would result in more efficient buildings. There was a need to demonstrate energy saving potential through the advanced (EE) technical and management solutions and provide models for replication.
- **Problem: Lack of financing solutions for energy efficiency in municipal buildings in Russia**. The ProDoc states that the project will work with banks and financing institutions (including IFIs and among them (EBRD and IFC) to look at more sustainable long-term interventions.

During the BEENWR Project preparatory phase institutional, management, information, technological, investment, financial and knowledge barriers were identified, which hampered the wide application of EE practices in the building sector of the North-West of Russia. And the BEENWR Project was designed to address this problem, by creating solid basis for the removal of identified barriers, including legal, awareness, and financing barriers.

The BEENWR Project consists of three components aimed at achievement of three Outcomes; achievement of each of them would remove some of the above-mentioned barriers. As a result, the following was planned to be achieved:

- An enabling legal and regulatory framework and its effective enforcement
- Transparent and reliable monitoring of energy performance of buildings and energy management
- Increased capacity through the capacity building and training
- Raised public awareness and built confidence of the targeted stakeholders through the implementation of replicable demonstration projects

In the absence of the BEENWR Project (business-as-usual scenario) EE in residential buildings would receive limited attention. Regional and local authorities would continue to lack the capacity and information necessary to design and implement EE policies and measures; Awareness of EE practices in the residential construction and maintenance sectors also would remain low.

2.3 Immediate and development objectives of the project

The overall objective of the BEENWR Project is to to build local capacities for and demonstrate local solutions to improved energy efficiency in new and existing buildings in the North West of Russia: Pskov, Vologda and Arkhangelsk Oblasts. This objective was supposed to achieve through the three components: (i) An enabling environment and enforcement capacities for improved eEE at the provincial and local levels; (ii) Capacity building and know-how; and (iii) Demonstration of local EE solutions and management models. The implementation strategy of the BEENWR Project was focused on the demand-side rather than supply-side (meaning generation of energy for heating and preparation of hot water in more efficient way).

It was supposed that the BEENWR Project would reduce energy consumption and associated direct CO_2 emissions from energy use in new and renovated buildings in the 3 participating regions (oblasts) by 48,050 t of CO_2 over a 20-year lifetime.

The immediate objectives of the BEENWR Project included design and implementation of new building energy codes, improved design and management practices, training of relevant national professionals involved in design, construction and maintenance of residential buildings, demonstration and replication of best practices. The project was focused on improving EE in the residential sector in both new and refurbished buildings in the City of Ashgabat with the largest building stock.

The immediate objectives of the BEENWR Project among others include:

- Creation of incentives for EE investments and the reduction of end-use energy consumption
- Development of Provincial legal and regulatory framework for enforcement and monitoring of EE construction norms
- Creation of the institutional and energy management model for EE municipalities
- Development of capacity building and educational models in territorial universities and technical colleges on EE in buildings
- Establishment of the Inter-regional professional training center
- Determination of the most cost-effective means of reducing energy consumption in the residential buildings
- Implementation of demonstration projects (new and reconstructed multi-apartment residential buildings) with significantly improved energy performance including comprehensive monitoring and evaluation of energy consumption

2.4 Baseline Indicators established

The indicators and targets for each project outcome for measuring progress and performance were established already in the PIF. Baseline levels/values of each indicator, means of their verification, associated risks and key assumptions are well-defined in the ProDoc, namely in the Project Results Framework (LogFrame).

2.5 Main stakeholders

Due to the complex nature of the BEENWR Project, it has assisted to / cooperated with various representatives of the parties involved. An overview of the key stakeholders is presented in Annex 1 of the ProDoc. The main Project stakeholders include:

- **Executing Agencies:**
    - ✓ Initially, from November 2010 to March 2014, for three years and four months, the BEENWR Project was executed by the **Office of Plenipotentiary of the President of the Russian Federation in the North West Federal District** (Okrug) under the modalities for the nationally-executed projects. The Plenipotentiary office is responsible for the coordination of policies in the North West Okrug of Russia including three pilot project regions (Arkhangelsk, Vologda and Pskov Oblasts); for oversight, coordination, and monitoring the realization of Federal Law on Energy Efficiency (Federal Law #261) and the coordination of trans-boundary and international projects and programs in the Okrug. These functions are realized through the Council for the Coordination of Development of the Fuel and Energy Complex and the Increase in EE

of the Economy of the North West Federal Region. In addition, Plenipotentiary office has served as the executing agency for the preparatory phase of the BEENWR Project. However, due to the administrative/institutional reform after the Presidential elections in Russia, the Council for Energy Efficiency was dismissed, and the Office no longer had responsibility for coordinating the implementation of Federal Law #261. As a result, in June 2013 the Office informed UNDP PSO that it wouldn't be able to carry out its supervisory and coordinating role for the BEENWR Project after 2013.

- ✓ On the basis of the analysis of the national institutional framework and conducted consultations, in early 2014, the Russian Energy Agency (REA) under the Ministry of Energy of Russian Federation was chosen in March 2014, as the best replacement for the National Implementing Partner/Executing Agency. The REA is responsible for the monitoring and implementation of the federal target programme on EE; monitoring and reporting over the effectiveness of the regional EE programmes and investments; collecting information and maintaining the national geographical information systems (GIS) on energy efficiency. REA has representations in 70 regions of Russia including the three pilot regions of the UNDP/GEF Project. The REA started executing the BEENWR Project in March 2014 and has executed the BEENWR Project up until the present time.

- **Line ministries:**
  - ✓ Ministry of Regional Development - until 2013 has been responsible for the elaboration of national policies, norms and standards for building EE and communal housing through its Department for Housing Policies and Housing and Utilities Infrastructure. However, in November 2013 the Ministry was reorganized and these functions were transferred to the newly established Ministry of Construction, Housing and Utilities
  - ✓ Ministry of Construction, Housing and Utilities
  - ✓ Ministry of Energy of the Russian Federation - one of the lead line agencies developing national EE policy and supervising implementation of the Federal Target Programme "Energy Saving and Energy Efficiency of the Russian Economy"
  - ✓ Ministry of Education and Science
  - ✓ Ministry of Natural Resources and Ecology
- **Other Stakeholders:**
  - ✓ Provincial and local Administrations of the Arkhangelsk, Pskov, and Vologda regions
  - ✓ Federal and regional legislative bodies: State Duma of the RF and regional-level assemblies
  - ✓ Regional energy committees (implementation of pilot demo projects, regulatory improvements)
  - ✓ Regional bodies for Construction, Housing and Communal Services
  - ✓ Regional bodies for Tariffs and Pricing
  - ✓ Technical universities and EE centres, design institutes and energy-related Research & Development (R&D) organizations (capacity building, technical training, dissemination of information, know-how and technologies)
  - ✓ Energy audit companies

- ✓ Construction companies and related business associations
- ✓ Federal funds
  - Fund to Promote Reform in the Residential and Communal Services Sector
  - Federal Fund to Promote Housing Construction
- ✓ Financial institution(s) active in North West Russia

2.6 Expected Results

The expected results of the BEENWR Project are specified in the ProDoc. After the implementation of three components of the BEENWR Project three Outcomes were expected to be achieved along with a number of outputs. The following outcomes were planned in the original ProDoc:

Outcome1: Enabling environment and strengthened enforcement capacities for improved energy efficiency at the provincial and local levels

Output 1.1: Provincial legal and regulatory framework for enforcement and monitoring of EE construction norms in the Vologda Oblast

Output 1.2: Regulatory framework and improved institutional capacities for effective implementation of EE Programme of the Pskov Oblast

Output 1.3: Institutional and management model for EE municipalities in Pskov Oblast

Output 1.4: Municipal EE norms

Outcome 2: Capacity building and know-how

Output 2.1: Capacity building and professional training modules

Output 2.2: EE curriculum in territorial universities and technical colleges

Output 2.3: Inter-regional professional training center

Output 2.4: Distance learning and dissemination system

Output 2.5: Inter-regional exchanges of lessons and best practices

Outcome 3: Demonstration of local energy efficient solutions and management models

Output 3.1: Demo A (Vologda Oblast). Model residential construction site: management model integrating EE criteria, legislative and regulatory measures, integrated project design, and project monitoring

Output 3.2: Demo B (Arkhangelsk Oblast): EE certification of buildings: methodology and introduction

Output 3.3: Demo C (Arkhangelsk Oblast) Collect and maintain reliable and timely information for decision making on EE construction and building maintenance in municipalities

As mentioned above, during the inception phase and after the MTR some indicators and targets have been revised but not Outcomes and Outputs; they remained unchanged.

3. Findings

(As requested by the ToR, in addition to a descriptive assessment, all criteria marked with (*) must be rated)

3.1 Project Design / Formulation

As recommended by the Guidance for Conducting Terminal Evaluations of UNDP-Supported, GEF-Financed Projects the findings of this chapter are based on the analysis whether or not:

- The BEENWR Project objectives and components were clear, practicable and feasible within its time frame
- The capacities of the Executing Agency and its counterparts were properly considered when the project was designed
- Lessons from other relevant projects (if any) were properly incorporated in the project design
- The partnership arrangements were properly identified, and roles and responsibilities negotiated prior to project approval
- Counterpart resources (funding, staff, and facilities), enabling legislation, and adequate project management arrangements were in place at project entry
- The project assumptions and risks were well-articulated in the ProDoc

An additional important point in terms of project formulation is to consider whether the planned outcomes were "SMART" (S - Specific: Outcomes must use change language, describing a specific future condition; M - Measurable: Results, whether quantitative or qualitative, must have measurable indicators, making it possible to assess whether they were achieved or not; A - Achievable: Results must be within the capacity of the partners to achieve; R - Relevant: Results must make a contribution to selected priorities of the national development framework; T - Time- bound: Results are never open-ended. There should be an expected date of accomplishment).

Project objectives

The BEENWR Project is focused on building of local capacities for and demonstrate local solutions to improved EE in new and existing buildings in the North West of Russia: Pskov, Vologda and Arkhangelsk Oblasts. This goal was supposed to be achieved through the implementation of three components: (i) Creation an enabling environment and enforcement capacities for improved energy efficiency at the provincial and local levels; (ii) Implementation of the capacity building programme; and (iii) Demonstration of local EE solutions and management models. The BEENWR Project thus has been designed to provide technical assistance and investment in demonstration activities and thereby reduce existing institutional, management, information, technological, investment, financial and knowledge barriers that hamper wide penetration of EE technologies and practices in the construction and building maintenance sectors. As stated in the ProDoc, loan and/or revolving-fund mechanisms are not considered appropriate for these BEENWR Project, and therefore, grant-type funding is considered most adequate to enable the successful delivery of the planned Outcomes, provided that it works to support lending activities from both banks and development finance institutions. The ProDoc made it clear that the project should explore various financing options and explore non-grant solutions. At the same time, GEF financing is not foreseen for direct investment into the construction of new and renovation of existing buildings, but for leveraging additional private sector funding for facilitating these investments.

Relevance of the problem addressed

The need in building local capacity and demonstration local solutions to improved EE in buildings in Pskov, Vologda and Arkhangelsk Oblasts, is convincingly justified in the ProDoc. Based on the housing sector development trends (dynamic construction sector) and state of energy performance of buildings in the baseline scenario, it is demonstrated that: (i) there is a high likelihood of scaling up construction (and renovation as well) of residential buildings in those Oblasts of the North West Federal Okrug of Russia; (ii) there is high GHG reduction potential due to the high potential for energy savings (compared with baseline) in newly constructed and renovated buildings. In addition, as provided in the ProDoc, discussions with stakeholders during project identification and preparation, indicated that there is a strong commitment of the regional governments to EE programmes.

Continuation of the construction of residential buildings at about the same magnitude as during the pre-project period, has been actually demonstrated during the BEENWR Project implementation. Most of the residential buildings built in 1980-1990-ies, suffer from outdated design and inefficient heating systems and the renovations include typically only improvement of their appearance, but not EE measures.

Before the start of the BEENWR Project the effective enforcement and supervision of the implementation of the existing EE norms was problematic, and many local design institutes and other construction sector professionals, were lacking the adequate knowledge and capacity to effectively promote state of the art EE design and construction practices. Therefore, the design of the BEENWR Project considers establishment of a regulatory framework ensuring mandatory enforcement of national and provincial EE norms and standards. These measures were planned to be demonstrated through the introduction of EE certification of buildings (Output 3.2).

In addition, improvement of EE in the residential buildings is compliant with the national energy and environment policy priorities. For instance, “implementing special measures to improve EE in housing and communal complex, including by introducing a method of return on investments, new mandatory construction norms and regulations for effective use of energy not only for housing properties, but also for public, commercial and industrial buildings” is one of the main priorities of the Energy Strategy of Russia for the Period up to 2030 (approved in 2009).

Based on the above mentioned, it can be concluded that the BEENWR Project objectives were relevant and feasible.

3.1.1 Analysis of Logical Framework (Project logic /strategy; Indicators)

The Logical Framework (LogFrame) is a key basis for planning of detailed activities under the implementation framework that was defined in the ProDoc. The LogFrame shall in principle serve to monitor and evaluate the overall project achievements – based on defined targets and indicators to measure these targets.

The original LogFrame, at the certain level, is lacking internal logic, clarity and consistency; planned activities are not always appropriate and/or adequate towards the identified targets. For instance:

- **Project Objective**: to build local capacities for and demonstrate local solutions to improved EE in construction and maintenance of buildings in the North West of Russia. As correctly stated in the MTR report, the demonstration of local solutions hardly can be considered as the ultimate development objective of the BEENWR Project and the main emphasis in formulation of the Objective should be on the impact on the construction and building sector as a whole, with corresponding GHG reduction, which is addressed by the corresponding indicators, but not by the formulation itself.

- Indicator and targets are inconsistent. Indeed, the indicator refers to the emission levels in new and renovated buildings, i.e. project emissions, while the target – to emission reductions (which is baseline emissions, less project emissions) during the 20-year lifetime of the demo projects.
- Baseline values of the indicators are confusing. According to the LogFrame, 85,000 tCO_2 would be emitted due to space heating in new and renovated buildings during the 5-year project period (2010-2015) and 1.7 $MtCO_2$ emitted due to space heating in new and renovated buildings during their lifetime (assuming a 20-year lifetime). First of all, if 85,000 t would be emitted for 5 years, then annual baseline emissions would 85,000/5 and lifetime baseline emissions – 85,000/5 * 20 = 1,700,000/5, i.e. 5 times less than 1.7 $MtCO_2$. But actually, annual baseline emissions should be much less than 85,000 tCO_2. According to the Notes on Direct Emission Reductions (ProDoc, Tables C2-1 and C2-2 on p.56-59) annual baseline emissions for 6 demo projects in Arkhangelsk and 5 demo projects Vologda Oblasts should be 3,392 tCO_2 due to the heating. Data on the baseline electricity consumption are not presented in Tables C2-1 and C2-2 but considering that the share of the GHG reductions due to the electricity savings is about 0.4% of the totals, annual baseline emissions should be about 3,400 t CO_2 and the lifetime baseline emissions – 68,000 t CO_2. Detailed estimation of the baseline emissions and also emission reductions are presented in Chapter 3.3.1 of this TE report
- Emission reduction quantitative target (48,050 tCO_2e as compared to the baseline) is correctly established but as mentioned above, it refers to the emission reductions while the indicator – to the emission levels, i.e. project emissions

- Activity 1.1.a (to achieve Output 1.1; indicator - Operational oblast-level legal and regulatory framework for enforcing and monitoring building codes in Vologda oblast) considers analysis of enforcement models in other CIS countries. The ProDoc doesn't further provide whether there are any such enforcement models. None of the UNDP-supported GEF-financed projects on energy efficient buildings in the CIS countries (Armenia, Belarus, Kazakhstan, Kyrgyzstan, Uzbekistan, Turkmenistan) was completed before the BEENWR Project start. The earliest project (Promoting Energy Efficiency in Public Buildings in Uzbekistan) started in 2009 and thus, no lessons learned was available while designing this BEENWR Project. Therefore, more logical would be to consider enforcement models in EU states, especially in Eastern European countries.
- Indicator for the output 1.2 "effective implementation of the Pskov Oblast Energy Efficiency Programme", leaves a window for subjective judgment because it is not provided how to measure the effectiveness of the implementation. Besides neither the indicator nor corresponding target includes any provision on the "creation of a standing committee on EE for the North West Federal Region, which will adopt best practice guidelines for the region" (Activity 1.2.d)
- Activity 1.2.b includes clarification of institutional requirements at each level – federal, oblast, and municipal – for implementing the EE programme, including the roles of enforcement agencies and enforcement inspectors at all three levels. In this regard the ProDoc provides that "Experience has shown that despite the existence of standards such as the 2003 Federal level building code on Thermal Protection of Buildings, these standards are not necessarily enforced. Therefore, it is necessary to develop EE enforcement models and tools at all of these levels to ensure that stricter requirements are implemented, particularly secondary legislation

at the provincial and local levels ", and "Despite the existence of this law, discussions with experts and officials indicate that a significant number of new buildings in the housing sector do not adhere to the 2003 standards." The ProDoc could have referenced scholarly discussions or official statements about this or could have highlighted that experience (tests, samples of buildings, results of measurements). Otherwise the need in enforcement is lacking evidenced arguments for that.

- The sites for the demo projects are not specified in the LogFrame. This is appropriate. But on p. 16 the exact location of the demo project is provided: "under the Activity the pilot construction site is located in Nifantov, a settlement in the Shekninskii Municipal District that is not far from Vologda City"
- Indicator for achievement of Output 3.3 is "Energy audit program in place for public and residential buildings when they are commissioned". The corresponding activities among others include the reconstruction of six residential buildings and providing energy performance certificates both for these buildings and for more than 570 buildings that will be audited. The ProDoc doesn't provide why for demonstration of economic benefits of EE measures, auditing of 570 buildings is necessary and whether this can be considered as an effective use of the resources of the BEENWR Project

The original LogFrame has been updated during the inception phase and included into the Inception report. The MTR of the BEENWR Project didn't recommend any changes in the LogFrame.

In the MTR report the LogFrame has been analyzed. It was found that:

- The formulation of the project results framework, does not fully support and highlight the aspects that are most essential for ensuring the impact and sustainability of the project results
- At the outcome level, the selected indicators and stated targets do not really measure the progress towards the desired outcome, but consist of a mix different sub-targets, some of which are more like outputs or results of individual activities
- The stated outcome targets for Outcomes 1 and 2 also include no quality criteria. E.g. a target of "a model system operating in the oblast including an on-site (inspection program) and the program shared with other oblasts" does not place any requirements for the content of that model system in terms of targeted energy savings or enforcement levels or comparison with construction norms used in other countries.
- No reference in the description of any of the project components is made on the eventually required international expert support

The report, "Recommendations for Updated Project Strategy", prepared by the international consultant in December 2014, after the MTR, recommended a number of revisions in the LogFrame. However, not all the recommendations were accepted by the Project Team. Original and updated/revised indicators and their baseline levels are presented in Table 1.

As it is clear from the Table 1, neither the Objective nor Outcomes were changed in substance. As for the indicators, they have been either merged (after the revision Outcome 2 has only one indicator instead of five), or split (emission reductions in Objective were split into the direct and indirect reductions), or additional ones established (No. 1.3; No. 3.2). As a result, the above-mentioned inconsistencies in the LogFrame weren't eliminated.

Table 1: Baseline indicators

Objective/Outcome			Indicator			Baseline level of indicator		
Original	Updated/revised		Original	Updated/revised		Original	Updated/revised	
	Inception phase	After MTR		Inception phase	After MTR		Inception phase	After MTR
Objective								
Build local capacities for and demonstrate local solutions to improved energy efficiency in construction and maintenance of buildings in the North West of Russia: Pskov, Vologda, and Arkhangelsk Oblasts	No change	No change	CO_2 emissions from energy use in new and renovated buildings in the 3 participating oblasts	No change	Direct GHG reduction impact of the EE investments facilitated by the project and calculated in accordance with the GEF guidelines Indirect GHG reduction impact of the EE measures facilitated by the project and calculated in accordance with the GEF guidelines	85,000 tCO_2 emitted due to space heating in new and renovated buildings during the 5-year project period (2010-2015). 1.7 MtCO2 emitted due to space heating in new and renovated buildings during their lifetime (assuming a 20-year lifetime)	No change[4]	No change
Outcome 1								
Provincial and local policies and regulations ensuring enforcement of EE building	Availability of regional and local policies and regulations ensuring enforcement of building EE standards	No change	1.1. Operational oblast-level legal and regulatory framework for enforcing and monitoring building codes in Vologda oblast	No change	No change	Lack of current, comprehensive program for codes enforcement with systematized, regular on-site inspections	No change	No change

[4] Targets by the end of the BEENWR Project also weren't changed

Objective/Outcome			Indicator			Baseline level of indicator		
Original	Updated/revised		Original	Updated/revised		Original	Updated/revised	
	Inception phase	After MTR		Inception phase	After MTR		Inception phase	After MTR
			1.2. Effective implementation of the Pskov Oblast EE Programme	No change	No change	Pskov Oblast EE Programme lacks regulatory framework and institutional capacity for effective operation	No change	No change
			1.3. Effective implementation of an institutional and management model for EE municipalities in the Pskov Oblast	No change	Number of municipalities in the Pskov region having adopted a fully functional energy management and information system (EMIS)	lack of an energy management and information system for EE municipalities in Pskov oblast	No change	No change
					Amount and type of information available from the system			
			1.4 Development of municipal energy efficiency norms in Pskov Oblast	Development of municipal energy efficiency standards in Pskov Oblast	No change	Absence of municipal energy efficiency norms	Absence of municipal energy efficiency standards	No change
Outcome 2								
Improved local capacities to leverage and manage investments into energy efficiency	No change	No change	2.1. Development and introduction of capacity-building and professional training modules (Vologda Oblast)	No change	Number of schools and other educational entities using the EE training programmes developed by the project	Limited exposure to EE-related topics at the post-secondary level; absence of programs at other levels of education	No change	Limited exposure to EE-related topics at the post-secondary level; Absence of programs at other levels of education;

Objective/Outcome			Indicator			Baseline level of indicator		
Original	Updated/revised		Original	Updated/revised		Original	Updated/revised	
	Inception phase	After MTR		Inception phase	After MTR		Inception phase	After MTR
								Lack of specific, focused EE curriculum in educational institutions in the participating oblasts
			2.2. Development and introduction of EE-related curricula in universities and technical colleges in the participating oblasts	No change		Lack of specific, focused EE curriculum in educational institutions in the participating oblasts	No change	
			2.3. Fully-functioning inter-regional professional training center	No change		No professional training center in the NW Federal Region focusing specifically on continuing education in EE and energy management	No change	
			2.4. Access of professionals to a distance learning system for EE topics	No change		No training units specifically focusing on EE	No change	
			2.5. Level of exchange of best practices and lessons learned	No change		No means of capturing or disseminating experiences in EE programs	No change	
Outcome 3								
Reduction of GHG emissions demonstrated: 45-76% reduction in energy consumption in co-	No change	No change	3.1. Reduction in energy consumption in the construction and co-	Reduction in energy consumption in construction and housing & utilities sectors of the Vologda Oblast	Status of the demo buildings and available energy performance data	No architectural or civil engineering approach to new, more-efficient residential developments	No change	No change

Objective/Outcome			Indicator			Baseline level of indicator		
Original	Updated/revised		Original	Updated/revised		Original	Updated/revised	
	Inception phase	After MTR		Inception phase	After MTR		Inception phase	After MTR
nstruction and maintenance sectors; 10-20% reduction in energy losses in energy networks			mmunal services (utilities) sectors of Vologda oblast			exists in the NW federal region		
			3.2. Use of energy performance certificates in the building stock in Arkhangelsk. Building renovations do not capture the full potential of cost-effective energy measures	Use of energy efficiency certificates in the building stock in Arkhangelsk. Building overhauls do not capture the full potential of cost-effective energy measures	Number of building having obtained an energy certificate Number of buildings with EE retrofit measures implemented and the amount of monitored and verified energy savings	Energy performance certificates are not used in the building stock in Arkhangelsk	Energy efficiency certificates are not used in the building stock in Arkhangelsk	No change
			3.3. Reliable and timely information on EE buildings available for decision-making in municipalities in Arkhangelsk Oblast	No change	Number of municipalities in the Arkhangelsk region having adopted a fully functional EMIS, including appointment of energy managers; Amount and type of information available from the system	No coordinated information available for decision-making; lack of a methodology for EE project management in the housing and communal services sector in Arkhangelsk oblast	No change	No change

3.1.2 Assumptions and Risks

Assumptions

Assumptions and risks are outlined in the Project Results Framework for each project indicator and target and built around the continued commitment of all BEENWR Project Partners:

- Oblast-level, okrug-level, and municipal-level support for the project will remain strong, and legislation and supporting regulations will be accepted
- More efficient codes prepared under the BEENWR Project will enter into effect and be enforced
- Municipalities will have sufficient interest and awareness in the EE programs for heat and hot water supply
- Willingness and availability for training by project stakeholders
- Students and practicing professionals will have strong incentives to apply the techniques that they have learned through training

However, assumptions are not always robust. In particular:

- It is assumed that the existing financing model/schemes would ensure the allocations of necessary funds for EE construction and renovation. This might be problematic for the residential buildings owned by the municipalities, especially for the Oblasts with budgetary constraints. This was proved during the BEENWR Project implementation when e.g. in Pskov Oblast, under the Business-as-Usual (BAU) scenario, the priority is being given to the less costly constructions/renovations
- It is assumed that practically all EE measures in buildings are cost-effective and thus attractive for investors. Therefore, no cost-benefit analysis of applied EE measures is foreseen in the ProDoc. During the actual implementation cost effectiveness of all EE measures were analyzed and only financially feasible options were recommended for implementation in the demo projects
- The planned activities among others include establishment of Inter-Regional Professional Training Center with branches across the North West Federal Region, with corresponding staffing and budget allocation. It was assumed that these resources would be available. Actually, the concept of the Inter-Regional Professional Training Center was developed only in October 2015 and the Center itself was established in 2016.

Risks

Initially the risks have been identified in the ProDoc. There were only three political and operational risks identified; all of them were rated as Low (L). Then during the inception phase risks have been analyzed and updated. But these updates are mostly of editorial nature. Before the MTR only one new (political) risk was identified.

During the MTR, the analysis of the risk management has been conducted and it was concluded that the risk analysis in the ProDoc is week (“does not like a serious one”). The MTR report correctly asked a question, how all the risks can be considered as low for this very broad reaching and challenging BEENWR Project in quite a complex institutional and financing environment? MTR concluded that the project management risk should be included as a standard risk element and analyzed adequately, along with prevailing policy, institutional, other capacity and financing risks, which were either analyzed inadequately or not analyzed at all. In December 2014 Risk Assessment was updated by the

International consultant by identification of 8 additional risks (presented in the report "Recommendations for Updated Project Strategy" – "Updated Strategy" hereafter). However, they were not accepted by the BEENWR Project Team and thus, entered ATLAS. The Consultant agrees that not all of recommended risks are actually risks. Some of them are project issues rather than risks (No. 7, 10, 12 in Table 3 below). Nevertheless,

The most recent risk log, dated 12-10-2017, was presented to the TE Team. The summary data on the risks are presented in Table 3; risks identified in the Updated Strategy but not accepted by the BEENWR Project Team (and thus not rated), are in italics.

Table 3: Summary of BEENWR Project risks

BEENWR Project Risks				Rating[5]			
#	Type	Description	Identified (Source and date)	ProDoc	Inception report	Updated strategy	TE
1	Political	Regional Governments do not adopt regional construction norms and enforcement mechanisms	ProDoc	L	L	P[6] = 5; I[7]= 5	N[8]
2	Operational/ Political	Construction companies will not adopt energy efficient technologies and materials	ProDoc	L	L	P = 5; I = 5	N
3	Political	Energy price subsidies in residential and public sectors remain in place, leading to an insufficient incentive for efficient products	ProDoc	L	L	P=3; I=3	N
4	Financial	Considerable USD/Ruble exchange rate change influences on final sale price of EE equipment in Russia, resulting in reduction of interest from the consumers, shifting it to more simple and cheap engineering solutions	Project Team; 21/05/2015				N
5	Financial	Economy/investment slow-down in Russia might result in failures of the planned national co-financing for the demonstration projects (both government and private) and related delays in the project delivery	Project Team; 21/05/2015				N
6	*Political*	*Regional governments and municipalities do not adopt and take effectively into use the proposed energy management and information systems (EMIS)*	*Updated strategy; 04/12/2014*			*P = 5; I = 5*	

[5] R9ating of risks: L – Low, M – Medium, H - High
[6] Probability: from 1 (low) to 5 (high)
[7] Impact from 1 (low) to 5 (high)
[8] In ATLAS risks are either critical or non-critical (N)

7	*Operational*	*The draft regulations, proposed EE solutions and training materials developed by the project do not reflect the state of the art approaches, good practices and international lessons learnt*	*Updated strategy; 04/12/2014*			*P = 3; I = 4*	
8	*Operational*	*No broader scale demand for the educational modules and training materials developed by the project (no replication)*	*Updated strategy; 04/12/2014*			*P = 3; I = 4*	
9	*Financial*	*Required financing for the implementation of the planned demonstration projects cannot be obtained*	*Updated strategy; 04/12/2014*			*P = 5; I = 5*	
10	*Technology*	*Technical failures of the promoted EE technologies and materials*	*Updated strategy; 04/12/2014*			*P = 2; I = 4*	
11	*Operational*	*Inadequate and/or non-capacitated human resources on the supply-side*	*Updated strategy; 04/12/2014*			*P=3; I=5*	
12	*Operational*	*Project management risk and inadequate capacity for adaptive management*	*Updated strategy; 04/12/2014*			*P=5; I=5*	
13	*Environmental*	*Climate change having an adverse impact on the market*	*Updated strategy; 04/12/2014*			*P=2; I=2*	

As it is seen from the table, not all the potential risks were identified in the ProDoc, and the identified ones were underestimated. Unfortunately, risks weren't monitored carefully; risks were updated in ATLAS only three times (19/08/2013; 21/05/2015, 12/10/2017) but not all risks were entered ATLAS. For instance, it is stated in PIR 2013 that there is a critical financial risk (without description), which is not included into the risk log.

Regarding Risk No. 12: Project management risk and inadequate capacity for adaptive management, which was identified by the MTR but not accepted by the Project Team, it must be noted that before the MTR, certain lack of capacities of the BEENWR Project Management, including National Deputy Director, Project Manager and Regional Coordinators, was confirmed during the TE mission by the interviewed stakeholders, including International and national consultants. This inadequate capacity of the BEENWR Project team issue was eventually resolved as the first project manager was removed at the time of the MTR in 2013 and the second project manager was removed some six months after the Russian Energy Agency took over in late 2014.

Based on the abovementioned is the Consultant's opinion that not all the potential risks have been identified in the BEENWR Project design.

3.1.3 Lessons from other relevant projects incorporated into project design

Before the BEENWR Project start certain lessons were learned from the UNDP-supported GEF-financed projects:

- Capacity Building to Reduce Key Barriers to Energy Efficiency in Russian Residential Buildings and Heat Supply (1998-2004), which addressed three key activities for energy efficiency improvement and energy saving in heat supply and consumption in the city of Vladimir:
    - Institutional changes that create incentives for greater EE and energy conservation in existing distribution and end-use infrastructure
    - Greater penetration of autonomous sources of heat; and
    - Capacity to analyze the financial and economic aspects and feasibility of capital investment projects for commercial and multi-lateral financing
- Cost Effective Energy Efficiency Measures in the Russian Educational Sector (2002-2006), the overall objective of which was to contribute to the GHG abatement by improving the EE of Russian educational facilities. This objective was planned to be achieved through awareness raising, training and capacity building, demonstration program and development of schemes and tools including models for sustainable administrative and financial solutions. The North-West Russia (Tver, Arkhangelsk, Karelia) was selected as a pilot region for that project. The project composed of three components including Component 2: Demonstration Program, which was aimed at:
    - Implementation of cost-efficient energy conservation measures to mitigate GHG emissions
    - Demonstration of a sustainable combined program of EE improvements using revolving funds for replication
    - Verification of technical and cost performance of the selected EE measures
    - Identification of major obstacles and lessons learned in order to incorporate these into the management tools and guidelines for planning and implementation of replication projects
    - Awareness and visibility for the EE measures in order to promote their wider replication

The ProDoc doesn't provide how the lessons learned (LL) from those projects were considered in the design of the BEENWR Project; it only mentions that "University networks of the Russian Ministry of Education will be engaged for the replication activities to build upon the lessons and results of the completed UNDP/GEF project on the energy efficiency in educational sector".

The BEENWR Project was submitted for GEF financing under the framework of the Umbrella "Russia Energy Efficiency Programme", which is a partnership of UNDP, EBRD, and UNIDO involving key Russian federal sectoral agencies and regional authorities. Therefore, the projects being developed under this Umbrella programme, were considered in the ProDoc (Annex 4: Overview of GEF Umbrella Programme in Energy Efficiency for the Russian Federation).

Projects implemented in the North-West Federal Okrug under the financing of International and bilateral donors (World Bank, EBRD, NEFCO, TACIS, Norwegian Ministry of Foreign Affairs), aimed at energy metering and energy savings in water supply systems and residential buildings, EE training, technology transfer and local norms in St.Petersburg construction sites, financial support for EE activities in Arkhangelsk Oblast, also are referred to in the ProDoc. It is stated that the BEENWR Project "will analyze, coordinate, and disseminate best practices of these initiatives through the institutional networks of the North West Federal Okrug and Representative of the President of Russia in the North West Federal Okrug". This means, that the LL from those projects were not incorporated into the

BEENWR Project design. Probably the reason was that most of the referred projects were under the implementation by the design of the BEENWR Project and LL were not available.

Since November 2010 the implementation of EBRD/GEF project "Improving Energy Efficiency in Public Buildings in the Russian Federation" started, the objective of which was "To reduce greenhouse gas emissions in Russia by improving efficient use of energy in Public Buildings such as kindergartens, schools, hospitals, and public offices. By combining technical assistance with financing, the EBRD aims to help local authorities overcome common obstacles to financing energy efficiency (EE) improvements such as allocation of resources for energy audits and project preparation, tendering procedures, and management of larger-scale programs that may need additional dedicated resources". This experience and lessons learned of this project, with similar objectives, could be very helpful for the design of the BEENWR Project. However, this was not possible because implementations of these two projects started practically simultaneously.

In general, it is a Consultant's opinion that not all available Lessons Learned from other relevant projects were incorporated into the design, and there was no specific plan to work on a financial support mechanism and the work was confused working on both public and residential buildings at the same time. It must be noted that the same general conclusion is made in the MTR report. Because of this reason the design of the BEENWR is lacking specifics related to the planning, financing and implementation of EE construction/reconstruction/renovation programs. Previously implemented projects were targeted at either public or residential buildings and thus had developed corresponding implementing strategies, which are different for these two types of buildings. Moreover, selected approach might be significantly different also for residential buildings only, depending on whether the buildings are owned by the municipalities or householders (householder organizations). The BEENWR Project considers all types of buildings and is seeking for uniform solutions. Therefore, similar activities were planned for municipal and privately-owned buildings while they should be different due to the following reasons:

- For private investors main incentive for EE measures is cost-effectiveness while for the municipalities there might by other incentives/realities, e.g. approved municipal programmes, financed from the state budget
- Even if the EE constructions/renovations are financially feasible, the incremental costs of EE measures would lead to the increase of the construction/renovation costs and/or energy tariffs. Therefore, issues of pricing and tariff setting has to be addressed adequately, which due to the different institutional and legal/regulatory framework, might be different for private and municipal investors
- For the private investors issue of financing is very important. But the ProDoc doesn't include any consideration about financing mechanisms. It just states that GEF funds will be used to leverage additional private sector investment in EE buildings, mostly in demo ones (There will also be close coordination with the work of two key federal funds … and with other investors, such as Nordic Investment Bank, EBRD, IFC which will leverage additional financing for the demonstration initiatives in order to ensure that they are of a scaleable size).

3.1.4 Planned stakeholder participation

Key stakeholders of the BEENWR Project, including governmental agencies and ministries, and first of all, the Office of Plenipotentiary Representative of the President of the RF in the North-West Federal Okrug as the Executing Agency of the project, have been actively involved during the design phase.

The Office was an executive partner for the BEENWR Project preparation (Project Preparation Grant: US$ 140,000 from GEF; Duration: January 2009 - December 2010).

Planning of the stakeholder participation has started from the early stages of the BEENWR Project development. The planning was based on clear understanding of the features of Russian Federation regarding the housing sector, namely roles played by key institutions. Among them:

- The plenipotentiary of the President of the RF in the North West Federal District (Okrug) – overall coordination
- Line ministries (Ministry of Regional Development; Ministry of Energy; Ministry of Natural Resources and Ecology) – Legal aspects
- Authorities responsible for enforcement of building codes and related legislation at the Oblast level – corresponding legal and regulatory provisions at Oblast level
- Municipalities - legal and regulatory provisions at municipal level
- Educational institutions - training programs, academic plans and curricula
- Building management companies
- Energy producers and utilities

Based on the abovementioned text it is the Consultant's opinion that stakeholder participation has been planned adequately.

3.1.5 Replication approach

The replicability belongs to the key GEF operational principles and thus, it was incorporated in the BEENWR Project design. According to the ProDoc the outputs of demo projects should be further replicated and scaled up to the regional and federal levels through the institutional networks of the North West Federal Okrug. The ProDoc however, doesn't provide what sustainable modality should be used for this purpose, especially financial modality. There are general considerations regarding working with selected financial institutions in order to ensure sustainability and replicability of the demo projects, but without elaborating any plan for that. In other words, the importance of engagement of financial institutions is recognized in the ProDoc, but no guidance is providedon how to do this in practice.

3.1.6 UNDP comparative advantage

In general UNDP comparative advantage lies in its experience in integrated policy development. UNDP's assistance in designing and implementing activities is consistent with both the GEF mandate and national sustainable development plans.

UNDP has implemented a number of EE in buildings projects in Central and Eastern Europe and in the CIS region.

UNDP Russia by the start date of the BEENWR Project had the adequate administrative capacity for implementation of it.

Comparative advantage of UNDP is proven by the fact that UNDP PSO is responsible for the overall communication and coordination between programme partners and projects under the Umbrella Programme in Russia.

3.1.7 Linkages between project and other interventions within the sector

As mentioned above, there are a number of projects in Russia, with the similar objectives, either already implemented or being under the implementation. BEENWR Project design calls for cooperation with similar activities in the sector, to consider their lessons and avoid overlapping/duplication of activities. However, the linkages with them are fragmental. The Consultant agrees with the MTR, according to which the ProDoc "does not really provide many other details about the linkages and co-operation opportunities with other interventions within the sector nor does it explain to what extent the project can build on and how it complements the results of the earlier projects". This looks not logical because the importance of these linkages was recognized in the ProDoc. Indeed, it is stated in Chapter "Design principles and strategic considerations" that "a number of energy saving projects have been implemented in the North Western Federal Okrug … These projects remained mainly uncoordinated". Nevertheless, the ProDoc is shifting the establishment of linkages (and analysis of LL as well) to the implementation phase rather than address co-operation opportunities and elaborate corresponding plans and arrangements.

3.1.8 Management arrangements

The BEENWR Project was designed for national execution by UNDP. The original management arrangements were specified in PIF and ProDoc in a following way:

- National Project Implementing Partner – initially: Office of Plenipotentiary Representative of the President of the RF in the North-West Federal Okrug. The Implementing Partner was identified in the ProDoc. The rationale was that this office was responsible for the coordination of policies in the North West Okrug of Russia which makes this Office ideally suited for the dissemination of information among the different Oblasts, and among others was tasked with oversight, coordination, and monitoring the realization of Federal Law on EE. The implementation of the BEENWR Project showed that this was not the optimal choice. Indeed, this Office was experienced in supervision but according to MTR, a certain lack of capacity was observed to adequately response to the challenges and ambitious targets of the BEENWR Projects, which among others required policy development, creation of financing mechanisms in a sustainable way. In turn, this required relevant experience and creativity, which unfortunately wasn't demonstrated until the changing of the National Implementing Partner in March 2014. And what is also important, the Russian Energy Agency (REA), "an important element of the state system of informational and analytical support aimed at sustainable energy development and greater energy efficiency of the national economy"[9], was already established before the BEENWR Project start. Later, after becoming the Implementing Partner, the REA plaid a crucial role in achieving the planned results (details are provided in below chapters).
- National Project Director (NPD) - planning, coordination, administration and financial management of the project with support by UNDP PSO. The NPD was designated as a responsible person for the achievement of the project objectives, for all projects' reporting; for ensuring the delivery of the project outputs
- National Responsible Party – initially: Closed Stock Company "Energy Forecasting Agency" – was selected for technical support of the project implementation in June 2011 on the basis of an open NIM tender and endorsed by UNDP local procurement committee. The Responsible

[9] http://rosenergo.gov.ru/about_the_organization/obschaya_informatsiya

Party performs the functions of a financial and administrative agent for the project: issues contracts with suppliers, experts, consultants etc. on behalf of the project, receives quarterly advance payments from UNDP, conducts payments and prepares quarter financial reports. NIM Responsible Party is accountable to UNDP and NIM Implementing Partner.

- Project Board / Project Steering Committee (PSC) - overall management of the project by making management decisions and playing critical role in quality assurance of monitoring and evaluation. Permanent secretary of PSC: NPD
- Project Manager (PM) - responsible for day-to-day run the project on behalf of the Implementing Partner to ensure that the project produces the results specified in the ProDoc
- Regional Team Leaders (three regional team leaders in each region) - day-to-day coordination of project activities at the oblast level
- Project Support (Project Assistant) - project administration, management and technical support to the Project Manager
- Unlike similar UNDP/GEF building EE projects in CIS countries, BEENWR Project team was not supported by the long-term International Chief Technical Advisor (CTA). Involvement of short-term International consultants was limited and took place only in the pre-MTR period of implementation where the international advisor on energy management, worked only for a short period for the project. On the other hand, as correctly stated in the MTR report, "the capacity of the project management ultimately determines the success or failure of the project. Several nationally executed GEF funded projects in different countries have also evidenced problems in attracting experienced enough local project managers that can manage the project entirely on their own without external expert support and advice, who can bring state of the art knowledge and experience from similar projects implemented elsewhere and monitor the progress and substantive impact of the project on an ongoing basis starting from the project inception. Therefore, and especially for the project of this size and complexity, close monitoring of the project progress and inclusion of an experienced international project adviser into the project management structure with demonstrated capacity and adequate experience from similar projects implemented in other countries to serve that function together with adaptive management advise should have been considered already at the project design stage". The Consultant fully agrees on this statement.

In course of the implementation of the BEENWR Project, urgent need in strengthening the management capacity, has been several times appeared. Over the course of the entire project, there were three project managers and evaluation of the results shows that only the third project manager was successful in achieving the targets. The PM was replaced twice; to strengthen the management capacity, a position of the Project Implementation Coordinator was introduced for the period June 2013 - November 2014. Among other reasons this might be due to the inadequate formulation of a role of PM. Indeed, according to the draft ToR for the PM, only the required qualifications/Competences were higher education relevant field (while e.g. Master degree was considered as an advantage), work experience in project management of not less than 3-5 years (it is unclear, if 3-year experience was enough, why then 5-year one is mentioned) and fluency in Russian and English, i.e. no work experience related to energy in general, no specific experience in EE, housing, etc. was required. These low requirements made it possible to hire a very young and inexperienced first project manager.

These management arrangements in general, with some exceptions, were followed during the BEENWR Project implementation:

- In June 2013 the Office of Plenipotentiary Representative of the President of the RF in the North-West Federal Okrug informed UNDP PSO that it wouldn't be able to carry out its supervisory and coordinating role for the BEENWR Project after 2013. The second PSC meeting held on 16.12.2013 recommended replacement of the Plenipotentiary Office by the Russian Energy Agency and appointed Deputy Director General of the Russian Energy Agency (REA) as a new NPD. Officially the REA took responsibility of the Executing Agency since March 2014
- National Responsible Party also was changed. Since mid-2014 International Sustainable Energy Development Centre under the auspices of UNESCO is serving as a Responsible Party
- From June 2011 until August 2013 the project has been managed (full-time) by Mr. Grigory Markin, from August 2013 until December 2014 – by Mr. Andrei Karpus, and since January 2015 – by Mr. Vitaly Bekker
- During the inception phase the management structure has been slightly changed by introducing a position of National Deputy Director (NDD). Formally this is acceptable but actually, NDD was playing double role, of: (i) NDD itself; and at the same time of (ii) Director of the North-West branch of the "Energy Forecasting Agency" (Responsible Party). In addition, in some cases she was taking responsibilities of the Project manager. This was a problem because, according to the MTR, there was a "fundamental lack of clarity on who is actually managing the project"[10], NDD, PM or Project Implementation Coordinator (former PM continued his work at this position). NDD was providing all the substantive advice and leadership for project implementation and, among others, was managing all the discussions with the project partners on any financing related matters[11]. The interviews during the TE mission including with the former management team members confirmed the existence of such unofficial arrangements and related problems. This might be considered as a conflict of interest, which is compounded by the fact that most of the decision-making power was in the hands of one person, who was (i) signing off on the ToRs, (ii) authorising payments and (iii) instructing the Responsible Party to make payments. The situation has been changed/improved after the replacement of the NPD and abolishment of the position of NDD. And with the new Implementing Partner, the Russian Energy Agency, this problem was solved
- Nine meetings of PSC were organized in total. At each of PSC meetings the achievements to date were discussed, assessed and agreed, and when needed guidance for the future implementation provided. Over the first half of the BEENWR Project implementation, analysis from the minutes from the PSC meetings shows that stakeholder consultations were poor. Over the second half of the implementation, PSC meetings were held more frequently, and the stakeholder participation improved considerably.

Based on the abovementioned, it is the Consultant's opinion that planned management arrangements were not fully adequate.

3.2 Project Implementation

As recommended by the Guidance for Conducting Terminal Evaluations of UNDP-Supported, GEF-Financed Projects, TE findings in this chapter are based on assessment of implementation approach, whether or not: (i) The logical framework is used during implementation as a management and M&E

[10] MTR report, p.7
[11] MTR report, p.7

tool; (ii) Effective partnerships arrangements are established for implementation of the project with relevant stakeholders involved; (iii) Lessons from other relevant projects are incorporated into project implementation; and (iv) Feedback from M&E activities used for adaptive management.

3.2.1 Adaptive management (changes to the project design and project outputs during implementation)

The implementation of the BEENWR Project can be divided into two periods of engagement of two different executing Agencies, and a short transition period between them.

In the first period (until 2014) the Management Team (i.e. NDD) was in a position that all planned activities of ProDoc are logical and feasible, probably because the Office of Plenipotentiary Representative of the President of the RF in the North-West Federal Okrug was an executive partner during the BEENWR Project design (under the GEF PPG) and was familiar with the arguments for designing the project in that particular way. PMs with irrelevant competence (implicitly stated in the MTR report and confirmed by the TE Team through the interviews) also were not always able to flag the critical issues and apply adaptive management for their adequate addressing. Project Implementation Reviews (PIRs) were not focused on measuring the progress towards the Outcomes and how the achieved results (or in progress) have contributed (or would contribute) to this in practice. In addition, the "PSC has not really been able to fulfil its envisaged role in effectively monitoring and guiding the project implementation" (MTR). Therefore, the application of the adaptive management was negligible. Partly, this can be blamed by inadequate LogFrame with not always right indicators and targets, but the BEENWR Project has done not much to correct the situation during the implementation either.

The only adaptive management practices applied during this period are: the decentralization of the management of the regional activities to regional coordinators (2012); establishment of the regional (technical) working groups to review and discuss the project's technical documentation and deliverables, for which the core project management team felt that they did not have enough capacity to do it themselves (2013); and conducting of economic and investment analysis for EE project in newly constructed and renovated buildings (this was not included into the original LogFrame)

The BEENWR Project extensively applied adaptive management in the second period (after changing of the Executive Agency, NPD and PM) based on the recommendations of MTR as well as results of monitoring & evaluation.

- As a first step undertaken by the new Management of the BEENWR Project, was re-consideration of the implementation strategy, partially due to the administrative reforms carried out in Russia during 2012-2013, which have affected the environment, in which the project was being implemented. For this purpose, the MTR Team Leader was additionally engaged to meet with the new BEENWR Project Team, to discuss the status of the project and to work together with the new team on an updated project implementation strategy and work plan for its remaining implementation period. Despite not accepting all revisions, proposed by the MTR Team Leader, the revised strategy, reflected in the revised LogFrame created a solid base for achievement of the results under each Outcome, that seemed problematic after the first period of implementation. The main changes in the LogFrame are as follows:
    - In accordance with the amended EE Law, it was not possibility for regional administration to introduce any new EE construction Oblast norms in addition to the Federal ones. Therefore, the activities aimed at development of new regional

construction norms (Two international experts in EE municipal norms were involved) were not continued and the already developed materials for Vologda region submitted to the National Housing Refurbishment Fund and Ministry of Construction

  - Indicator 1.3 and corresponding target (see Table 1 above) became more specific; reference is made to the specific software, Energy Management and Information System (EMIS), developed by the UNDP project in Croatia, and its application for municipalities in the Pskov region along with appointment of the first energy managers in Pskov was planned (and actually implemented in Pskov and Vologda oblasts)
  - Five indicators and targets for Outcome 2 were consolidated into one, simple to monitor and verify, indicator and two targets

- After experiencing difficulties related to the financing of potential demo projects by the project owners (BEENWR Project was providing only co-financing of EE measures but not a core investment), in order to have more opportunity for selection of the most feasible demo projects, the spatial borders of the pilot/demo region were extended by including all three participating Oblasts and Novgorod Oblast as well. Both, original and revised LogFrames were considering demo constructions in Vologda Oblast only and reconstruction/renovation – in Arkhangelsk only.
- As mentioned above, the BEENWR Project has conducted economic and investment analysis for EE project in newly constructed and renovated buildings. Before the final selection of the demo projects, a verification model of economic efficiency of EE measures applied in newly constructed or renovated houses, also was developed
- Main challenge for the Project Team while implementing Component 3 of the BEENWR Project was to ensure financing of demo projects. According to the ProDoc, activities under the Output 3.1 included development of plans for the site, including EE designs and construction of demo buildings in Vologda (5 residential buildings with total heated floor area of 1,342 m^2, were identified in the ProDoc and presented in Table C2-2); under the Output 3.2 - realization of a list of specific EE measures in (existing) buildings in the Arkhangelsk Oblast (6 residential buildings with total heated floor area of 63,921 m^2 – presented in Table C2-1 of the ProDoc). Despite the support from the regional, provincial and local authorities, it was not possible to forecast the financing and co-financing of demo projects from the state budgets of different levels in terms of time, as the budget could be used for more urgent, from the state point of view, activities and the allocation of funds for EE demo projects was several times postponed. For instance, the construction of a demo building in Vologda was to begin in December 2013 with co-financing from the regional budget and the reconstruction of a typical building in Arkhangelsk - in March 2014 with funding from the municipal budget. None of the above demo projects were implemented within the timeframe and under the co-financing of the BEENWR Project. Therefore, the Project Team was looking for alternative sources of financing including private investors (in Vologda) and non-governmental Fund (in Arkhangelsk) but these initiatives ended up with the same result. The BEENWR Project management has applied adaptive management and implemented alternative projects:
  - For new constructions: Since 2013, the program for the relocation of Russian citizens (Resettlement Program) from dilapidated and emergency housing is being implemented (https://www.reformagkh.ru/relocation). The program is financed by the Fund to Promote Reform in the Residential and Communal Services Sector and Budgetary Resources of the Regions. As a rule, only those basic EE measures are

supported that are considered by the existing rules. Often only minimum requirements for the thermal protection of buildings do not ensure the achievement of a normative levels of energy consumption. The BEENWR Project used these circumstances and managed to identify two residential buildings in Porkhov (Pskov Oblast) and Parfino (Novgorod Oblast), which were implemented under the above program and the Project has provided co-financing of the EE measures.

  - For renovations (capital repair): in cooperation with Arkhangelsk regional administration BEENWR Project has short-listed 12 buildings that were included in the renovation program of the city of Arkhangelsk for 2015, out of which only one was selected for demo implementation. Therefore, the BEENWR Project looked for the alternative choices in other Oblasts including public buildings. Finally, two renovation projects were implemented in Pskov and Vologda Oblasts (EE retrofit of kindergarten «Raduga» in the Ostrovsky district, Pskov oblast and EE retrofit of the main building of Vologda Health Clinic No. 3). More details are presented in Chapter 3.3.1 below

- Scope of Activity 3.3.d.iv (Measure energy performance of the renovated buildings and provide buildings with energy certificates) was extended and energy savings were calculated based on actual monitoring. For this purpose, energy performance of the reference buildings, also were monitored (in order to calculate baseline energy demand)

The best examples of adaptive management are related to the application of Energy Management Information System (EMIS) in Pskov and Vologda Oblasts. The development of the municipal energy management system wasn't explicitly included into the LogFrame. Indeed, only the established indicator somehow related to the monitoring system was "effective implementation of an institutional and management model for EE municipalities in the Pskov Oblast" (for Output 1.3) and only the target was "applied model of utility services provision in place and functioning for 2 municipal districts" (for Output 1.3) and "power consumption monitored on an ongoing basis" (for Output 3.2). At the same time, Activity 1.3.c considered "Implementation of a continuous data collection system that will provide sufficient information for monitoring results and develop and enact the necessary regional and local regulations to put the data collection and maintenance system into place and ensure that it will have sufficient funding to remain in operation during and following the project implementation period. The management system should also document energy and economic savings due to the use of the model and the recommendations that it generates". However, these provisions weren't reflected in the original LogFrame.

The necessity of the development of EMIS was underlined by the International consultants from very beginning of the BEENWR Project implementation. In the report "Best Practice methodology for Energy Management in Municipalities. Best practice methodology, recommendations and examples", prepared by Mr. Zoran Morvaj in June 2012, the importance of EMIS (to continuously record, archive and analyze energy consumption data and thus, a central tool in establishing Energy Management and introduction of buildings certification scheme) and its detailed description with best practices of its application were presented. EMIS was one of the main focuses also of another report prepared by Mr. Morvaj "Project strategy and adaptive management. For achieving results and sustainability" (November 2012). Unfortunately, these ideas reflected in those reports weren't followed. The related activities were focused on elements of the monitoring system, such as development of a prototype of EMIS for the Arkhangelsk Oblast (under Outcome 3.2); creation of a municipal information system providing quick data collection and coordination of energy consumption in public buildings (objects of municipal education); development of an accounting model of energy by using geographical information systems (GIS) in the Pskov Oblast, etc. However, the progress was insufficient and not

cost-effective (e.g. USD 150,000 for separate studies and software development in the Arkhangelsk region[12]). Therefore, the issue of EMIS was a focus of the third PSC meeting held on December 4, 2014. This PSC meeting was the first one chaired by new NPD representing a new Executing Agency (REA). This PSC meeting took a crucial decision, which largely determined the further implementation strategy of the BEENWR Project and therefore, more details are provided below.

At the meeting, the regional coordinator in the Pskov Oblast presented the status of a prototype of EMIS being under the development in the Ostrovsky and Nevelsky districts. The PSC noted that the creation of an EE management system at the municipal level, based on the information system created, would be one of the most important results of the BEENWR Project. At the same time, there was a high risk that further financing of the EMIS development might not lead to its practical implementation in the municipal management system. RTA proposed alternative solution, the NPD and the Project team to pay attention again to the EMIS developed by UNDP in Croatia, which could be applied in the North-West regions of Russia. He also noted that some other countries have successfully adopted it for the energy management system, at relatively low cost. Finally, the RTA noted that proper application of EMIS is largely depending on the right energy managers. After the discussion then PSC decided: (i) to propose to the administration of the Pskov Oblast to introduce the position of an EE manager and the BEENWR Project would provide necessary financing for one year; (ii) to study the possibility of applying EMIS developed in Croatia and presented in the report of Mr. Morvaj.

Another International Consultant, who prepared Recommendations for Updated Project Strategy, just after the third PSC Meeting, also recommended: (i) to ensure that the necessary backstopping (incl. financing, appointment of energy managers etc.) is provided; (ii) to explore the replication potential of the EMIS developed in the Pskov region in Arkhangelsk and Vologda and to clarify the linkages to the already concluded GEF funded activities on EMIS development in Arkhangelsk; and (iii) to take stock on the UNDP supported EMIS activities in Croatia.

As a result, the BEENWR Project Management Team took a right decision and undertook relevant steps for application of EMIS:

- The LogFrame was revised by introducing a new target for Output 1.3 – municipalities in the Pskov region have in use a fully functional EMIS with appointed energy managers and including annual data on energy performance of all public buildings, public utilities, and all private buildings connected to the municipal DH network
- The geoinformation model developed by the BEENWR Project and tested in practice in Pskov Oblast was merged with the “Croatian” EMIS
- “Croatian” EMIS adapted for application in RF, was applied in Pskov and Vologda Oblasts

Shifting of focus of activities under Outcome 1 to the EMIS led to the revolutionary changes in the attitude of the direct beneficiaries (regional and municipal authorities of Pskov and Vologda Oblasts), as well as key stakeholder in re-vitalizing of planning, followed by the practical activities, aimed at the development and implementation of municipal EE plans in a building sector. The TE Team has got clear evidences on that.

One of the most important of EMIS application is that it greatly contributed to the direct GHG reductions. Indeed, GHG reductions due to the EMIS are tenfold higher the ones due to the construction and renovation of demo building.

[12] Recommendations for Updated Project Strategy, December 2014

Finally, the BEENWR Project Management Team made efforts to extend the spatial borders of EMIS application to the number of developing countries.

More details on the above-mentioned are presented in Chapter 3.3.1 below.

3.2.2 Partnership arrangements (with relevant stakeholders involved in the country/region)

Ensuring the partnership with the stakeholders has a crucial importance for such a complex project as the BEENWR Project is, especially if the activities are either not precisely described in the ProDoc or due to the changing environment of the project implementation, some risks are becoming critical and adaptive management is to be applied. The BEENWR Project from the beginning was trying to establish effective partnership with the key stakeholders by engaging them into the PSC, organizing permanent information exchange meetings and discussions on the matters related to the project planning and implementation. However, these attempts were not always successful and as a result, there were significant delays by the MTR at least, in implementation of two components of the BEENWR Project (aimed at achievement of Outcomes 1 and 3). The risks of further delays related to Outcome 3 remain critical also after the MTR and the BEENWR Project experienced major and repeated delays in its demo projects including due to the unexpected slowness of necessary approvals and authorizations. Therefore, efforts to ensure that all the stakeholders, within their mandate, facilitate the progress of achievement of the planned results, have been intensified.

The efforts for the effective partnership were based on three different approaches:

- Direct arrangements including through the formal agreements between the BEENWR Project (NPD). Signing of the above agreements appeared a useful management tool for planning and implementing activities jointly - works were proceeded essentially without delays afterward and in general, collaboration in key areas, including demonstration projects, became easier and more efficient.
    - An agreement was signed with the Administration of Parfino (Head of Administration of Parfino municipal district Khatuntsev N. V., Head of administration of the urban settlement of Parfino Dementyev V.V.) on joint implementation of the demo project
    - An agreement was signed with the Head of the Porkhov municipal district, etc. It must be noted that not all Agreements were effectively implemented. For instance, an agreement with the Administration of Vologda Oblast (signed well before MTR) was signed on implementation of a demo projects for three apartment buildings. However, these demo projects weren't implemented as no regional co-financing materialized. Instead, a pilot repair in Vologda was implemented based on Protocol of Intention sighed in spring 2016 by the Vice-governor of the oblast.
    - A cooperation agreement on the implementation of the educational component was signed between the Project and one of the largest universities of the country - the Northern (Arctic) Federal University (NARFU)
- Through the representatives of the partners, engaged in the PSC. The PSC, for the purposes of efficient decision-making and work coordination, includes representatives in charge from various ministries and other project partners, including Ministry of Industry and Trade of the Russian Federation, Ministry of Economic Development of the Russian Federation, Ministry of Energy of the Russian Federation, Ministry of Natural Resources and Environment of the

Russian Federation, Ministry of Education and Science of the Russian Federation, UNDP Project Support Office in Russia as well as other Project partners.

- Meetings, discussions followed by the informal agreements at the working level. BEENWR Project web (http://www.undp-eeb.ru/en/news.html), PIRs, technical reports, provide many evidences on that; this was confirmed by the interviewees during the TE mission. Among them:
    - Meetings and Discussions with the senior management of Oblast and municipal administrations including meetings with the Deputy Governors of Pskov and Vologda Oblasts, Deputy Minister of fuel and energy (FE) and housing and communal services (HCS), Arkhangelsk regional government. In particular, a number of meetings were held with the Deputy Governor of the Pskov Oblast Mr. Alexander Kuznetsov and Deputy Governor of Vologda Oblast Mr. Vitaly Tushinov[13]
    - Ministry of Construction, Housing and Utilities
    - Ministry of Education and Science - on dissemination of the modules among Russian schools, colleges and universities
    - Administrations of Pskov, Vologda and Arkhangelsk Oblasts
    - Universities: NARFU, St. Petersburg Polytechnic University of Peter the Great,
    - Federal Funds and International Financial institutions: Federal Fund to Promote Housing Construction, Federal Fund to Promote Reform in the Residential and Communal Services Sector, IFC, etc.

Other general means for establishment of the effective partnership included organization of study tours with participation of representatives of the Oblast Administrations – helped in establishing trust and close relationships.

3.2.3 Feedback from M&E activities used for adaptive management

In accordance with the ProDoc, the BEENWR Project should regularly use feedback from M&E to appropriately and adequately address any new challenges (issues) and thereby ensure the achievement of established targets. The M&E plan includes the LogFrame, Inception Report and Mid-Term Review and thus, changes in the LogFrame, in accordance with the recommendations of the Mid-Term Review, also were used as a basis for adaptive management. Other activities under the M&E plan, which were used for the adaptive management, were decisions of the PSC meetings and findings and recommendations of technical reports prepared by the experts and consultants engaged in the BEENWR Project implementation.

The changes in the LogFrame are already discussed in the Chapter 3.2.1 above. Other feedbacks from M&E activities used for adaptive management are as follows:

- Strengthening the management structure – From the very beginning of the implementation, along with the NPD, a position of NDD was introduced; in the middle of 2013, when the significant delays were observed, the new PM was engaged while former PM continued working as the Project Implementation Coordinator. Nevertheless, these changes haven't been resulted in acceleration progress. The real progress was observed only after the changing

[13] information on meetings held are presented at the BEENWR Project web http://www.undp-eeb.ru/en/news.html

of the Implementing Partner (Executing Agency) followed by the replacement of the (second) PM

- After the evaluation of results of the development of Energy Monitoring System in Arkhangelsk and assessment of accompanied risks, the BEENWR Project has opted EMIS developed under the UNDP/GEF project in Croatia. After the successful adaptation/adjustment of EMIS to the Russian reality, the focus of Component 1 was shifted to the further application of EMIS. Positive experience with application of the EMIS in Pskov Oblast was extended to the Vologda Oblast
- Oblast-level investment plan for EE improvements to buildings. The BEENWR Project has recognized that even with the strongest technical justification, advocacy for EE buildings would likely face a difficult path to implementation. Therefore, the efforts were focused on approval of List of buildings of the budgetary sphere, selected for inclusion in the EMIS and subsequent implementation of measures for EE in the framework of the BEENWR Project in Pskov (18 buildings) and Vologda (5 buildings) Oblasts
- Adaptive management in response to the Recommendations of MTR. It must be noted that the MTR report doesn't contain clearly formulated and numbered recommendations. There are just Corrective actions listed for the design, duration, implementation, monitoring and evaluation of the project, which are related to: (i) Revision of project's strategic results framework; (ii) Project management arrangements; (iii) Financing of demo projects; (iv) Co-operation and effective partnership building with other ongoing projects; and (v) Possible project extension. Actions to strengthen the ownership, manage potential risks and reinforce the benefits from the project with due emphasis on sustainability aspects, are also discussed. Namely: (vi) Improvement of the risk management including the quality related risks; (vii) critically assessing and monitoring the sustainability related aspects and the contribution the different activities make towards the actual greenhouse gas reduction goals.
    - ✓ Recommendation 1 suggested reducing the number and re-establishing of indicators and targets in order to be focused on the main targets to be achieved under each outcome considering qualitative and sustainability aspects. This recommendation was accepted and actually followed during the post-MTR period. This really helped in strengthening the focus on main targets
    - ✓ It was stated in Recommendation 2 that there was a need in serious reorganization and strengthening of the BEENWR Project management. It was recommended to find experienced enough local project managers to run the project entirely on their own, the recruitment of an experienced international project management and technical advisor (with knowledge of the Russian language/Russian speaking staff and previous working experience in the Russian building sector). In response to this recommendation the new PM was recruited and Chief Technical Advisor (Mr. Gorshkov) engaged additionally (Mr. Moskalyov, CTA on implementation of educational component, was already engaged by the MTR)
    - ✓ Recommendation 3 suggested that for leveraging funding for demo projects, the BEENWR Project should intensify its efforts and tie its activities more closely to the already available financing sources instead of performing research work, energy audits, energy certificates and preparation of feasibility studies, which would be useless, if not leading to concrete EE investments. Following this recommendation, the

BEENWR Project has established close relationships with the Regional administrations to identify budget lines that could be attributed to project activities in this direction

- ✓ Recommendation 4 referred to number of ongoing projects, with which the BEENWR Project could (and should) establish effective partnership. After the MTR, the BEENWR project t has established close cooperation with:
    - UNIDO's Centre for International Industrial Cooperation in the Russian Federation, which is implementing a project Market Transformation Programme on Energy Efficiency in GHG-intensive industries in Russia, main partners of which are EBRD and REA, and Component 3 of which involves introduction and implementation of an energy management system in selected Small and Medium Enterprises (SMEs). Cooperation with the UNIDO's Centre assisted the BEENWR Project in better formulation of the exit strategy. In particular, it is supposed that one of the objectives of the forthcoming project of UNIDO's Centre will be continuation and scaling-up of the activities aimed at achievement of Outcomes and Outputs of the BEENWR Project, with high replicability potential
    - Copenhagen Centre on Energy Efficiency (established in September 2013 to serve as the global EE hub of Sustainable Energy for All (SEforAll), which is assisting city of Astrakhan, Russia in developing of strategy and establishing EE targets on example of pilot micro-district No 6.
- ✓ MTR also recommended to keep track of possible risks that need to be managed. In response, the BEENWR Project developed detailed AWPs for the remaining years with month-by-month sequencing of activities and elaboration of risks and alternative scenarios, including timetables and budget adjustments. Unfortunately, risk log hasn't been regularly updated along with these measures

3.2.4 Project Finance

For the evaluation of BEENWR Project finance, the key financial aspects of the actual costs and leveraged and financing have been assessed. Differences between planned and actual expenditures also were assessed and explained. Findings of the financial audits also were considered. The following has been observed:

- In the ProDoc the BEENWR Project total resources were USD 33,340,000, including a GEF grant (USD 5,840,000), co-financing from the Government (USD 11,490,000) and private sector (USD 13,470,000) and in-kind contribution from the Government (USD 2,540,000). The planned and actual co-financing are presented in Table 4.
-

Table 4: Planned and Actual Co-financing (in USD million) *(provided by the BEENWR Project)*

Co-financing (type/source)	UNDP own financing		Government		Partner Agency		Total	
	Planned	Actual	Planned	Actual	Planned	Actual	Planned	Actual
Grants								
Loans/Concessions								

- In-kind support			2.540	2.540			2.540	2.540
- Other			11.490	49.582[14]	13.470	79.181[15]	24.960	128.763
Totals			**14.030**	**52.122**	**13.470**	**79.181**	**27.500**	**131.303**

- According to the ProDoc "Federal and regional co-financing will be invested into design and construction of infrastructure and public buildings. The partner institution or institutions will finance residential, cultural, and commercial buildings". By the date of MTR, no implementation of demo projects was even started. Therefore, it is the Consultants opinion that co-financing confirmed by the MTR (details are presented in Annex 8 of the MTR report) cannot be accounted as an actual co-financing because those costs were spent under the Business-as-Usual scenario and should be deducted from the co-financing. In addition, co-financing for the demo project in Parfino, Novgorod Oblast (RUB 54.5 million or USD 0.97 million), is missing in this table. Revised co-financing data are presented in Table 4.1

Table 4.1: Planned and Actual Co-financing (in USD million) *(revised by the TE Team)*

Co-financing (type/source)	UNDP own financing		Government		Partner Agency		Total	
	Planned	Actual	Planned	Actual	Planned	Actual	Planned	Actual
Grants								
Loans/Concessions								
- In-kind support			2.540	2.540			2.540	2.540
- Other			11.490	13.863[16]	13.470	2.430[17]	24.960	16.293
Totals			**14.030**	**16.403**	**13.470**	**2.430**	**27.500**	**18.833**

- As it is seen from the table, more co-financing was provided by the Government, that demonstrates clear interest of it. The reason for higher co-financing by the Government was that no for demo implementation public buildings (kindergarten, clinic) and municipally owned residential buildings were selected and therefore, no co-financing was provided by the private sector in these demo buildings. Government co-financing was used mainly for design and construction of 2 new buildings in Parfino and Porkhov with costs of about RUB 108 million (USD 1.92 million); design and renovation of 2 buildings in Ostrov and Vologda with total costs of USD RUB 33 million (USD 0.59 million); and installation of EMIS in Pskov and Vologda Oblasts - RUB 5.7 million (USD 0.1 million).
- Financial oversight of the project is provided by UNDP under the National implementation (NIM) arrangements. Combined Delivery Reports (CDRs) have been prepared thoroughly, on a timely basis, and in a manner consistent with regulations on financial reporting. The annual disbursements amounted to:

  - ✓ USD 86,085.97 in 2011
  - ✓ USD 725,903.96 in 2012
  - ✓ USD 798,127.48 in 2013
  - ✓ USD 438,195.58 in 2014

[14] Including USD 9.880 million in Pskov Oblast after the MTR (USD 4.926 million confirmed by the MTR); USD 3.983 million in Vologda Oblast after the MTR (USD 3.075 million confirmed by the MTR); and USD 27.758 million in Arkhangelsk Oblast (confirmed by the MTR)

[15] JSC "Pskov Communal Systems" – USD 0.352 million; Universities – USD 1.127 million; Non-profit organizations – USD 0.951 million; Extra-budgetary resources confirmed by Arkhangelsk Oblast – USD 76.751 million (confirmed by the MTR)

[16] Doesn't include co-financing for demo project in Parfino

[17] Doesn't include co-financing for demo project in Parfino (if any)

- ✓ USD 1,227,675.32 in 2015
- ✓ USD 1,712,239.09 in 2016
- ✓ **Total (as of 31 December 2016): USD 4,988,227.40**
- ✓ **Planned budget for 2017-2018: USD 851,772.60** (USD 790,000 in 2017; USD 61,000 in 2018)

- Annual audits have been conducted according to UNDP regulations. The GEF grant funds and UNDP funds are monitored through UNDP's financial reporting system

3.2.5 Monitoring and evaluation: design at entry and implementation (*)

M&E Design at Entry

The Request for CEO Endorsement/Approval for the BEENWR Project among other includes description of the budgeted Monitoring and Evaluation (M&E) plan with identified responsible parties for M&E activities, allocated indicative budget, and specified time frame for each M&E activity. According to M&E plan, M&E should be conducted in accordance with established UNDP and GEF procedures. Monitoring Framework and Evaluation was further substantiated in the ProDoc. The indicative M&E budget was USD 285,000 or about 4.9% of the total GEF grant.

M&E activities among others include measurement of means of verification for project indicators and measurement of means of verification for project progress and performance (measured on an annual basis), etc.

Standard M&E tools include LogFrame (contains performance and impact indicators as well as means of verification), Inception Report, Mid-Term Review, Terminal Evaluation as well as standard UNDP and GEF project progress reports – Annual Project Reviews (APR) and Project Implementation Reviews (PIR).

At the same time, as mentioned above in Chapter 3.1.1, the original LogFrame, at the certain level, was lacking internal logic and consistency and therefore, some indicators and targets have been redefined to better and more specifically reflect project outputs. Risk analysis was inadequate. Naturally, the M&E design at project start was not very specific towards measurement of means of verification for progress in achieving of those outputs.

Based on the above mentioned the M&E design at project start up is rated as Moderately Satisfactory (MS).

Highly Satisfactory (HS)	Satisfactory (S)	Moderately Satisfactory (MS)	Moderately Unsatisfactory (MU)	Unsatisfactory (U)	Highly Unsatisfactory (HU)
		✓			

Implementation of M&E

In general, the actual implementation of M&E is in compliance with the M&E plan, because:

- The BEENWR Project is subject to regular review of the UNDP PSO and has been supervised regularly
- Before 2014 the NPD (Mr. Sergey Zymin, Deputy of the Plenipotentiary of the President of the Russian Federation in NWFD) was delegating its role to the NDD (Ms. Vera Grishina), who was at the same time a Director of the Responsible Party (Energy Forecasting Agency), and also played a role of the acting PM of the BEENWR Project. Along with the potential conflict of interest, due to such arrangements, unlikely she would devote necessary time to the duties of each of these

positions, including M&E of the BEENWR Project. The situation was sharply changed in a positive way after the replacement of the Executive Agency and appointment of a new NPD (Mr. Igor Kozhukhovsky). Mr Kozhukhovsky played a crucial role in M&E; he was supervising activities on a weekly basis

- Project implementation has been regularly reviewed by the PSC, chaired by the NPD. AWPs have been regularly developed and submitted for approval to the PSC. The PSC plays a critical role in M&E by quality assurance of the activities and outputs. It ensures that required resources are committed and negotiates solutions to any problems with external parties. Nine meetings of the PSC were organized in total (No.1: 21.06.2011; No.2: 16.12.2013; No.3: 04.12.2014; No.4 (on-line): 11.08.2015; No.5: 18.11.2015; No.6 (on-line): 28.04.2016; No.7 (on-line): 30.09.2016; No.8: 22.11.2016; No.9 (on-line): 26.06.2017). At each PSC meeting the achievements to date were discussed, assessed and agreed, and also guidance for the future implementation provided.
- Inception Workshop was held on June 20, 2011 (Inception Report has been finalized in January 2012) with participation of UNDP CO, UNDP RTA, National Implementing Partner and key stakeholders. Among others it recommended revisions to the LogFrame, identified "potential adversary circumstances that may affect project implementation" (but all the risks were rated as low)
- The MTR mission was conducted in November-December 2013, MTR report delivered in January 2014. Overall Project Achievement and Impact was rated as Moderately Unsatisfactory (MU). Rating for project design was Moderately Satisfactory (MS); Project implementation (Efficiency) – MU; Outcome 1 – MU; Outcome 2 – S; Outcome 3 – MU; Relevance – Highly Satisfactory (HS); Country Ownership – Satisfactory (S); Stakeholder Participation – S; Replication Approach – MS; Sustainability – S; Linkages between project and other interventions within the sector – MU; Management Arrangements – MU; Project Implementation – MU (based on: Project implementation and management approach and arrangements – U; Project administration and financial management – MS; Monitoring, evaluation and adaptive management - MU; Contribution of Implementing and Executing Agencies – MU; Stakeholder involvement, outreach and co-ordination with other related initiatives - MU; Identification and management of risks – U).
- The BEENWR Project was also subject to external financial audit. All financial audits had "no comments or observations" and provided overall satisfactory ratings
- The revised LogFrame (after the MTR) and M&E plan in the ProDoc served as a source of annual targets for the project. As for the baselines for the established indicators, some of them were appropriately and adequately based on the actual monitoring, e.g. energy consumptions in reference buildings (newly constructed or renovated without additional EE measures); for some other indicators the Status Quo scenario was used similarly to ProDoc, which is not always appropriate. For instance, baseline emissions for buildings including in EMIS were estimated with high level of uncertainty (see details in Chapter 3.3.1 below).

The Consultant agrees with the rating of M&E in MTR (Moderately Unsatisfactory for the period until 2014, i.e. with significant shortcomings). Then, after appointing a new NPD and renewing a Project Team including recruiting of a new PM, CTA (for Demonstration Components) and other technical experts, both, planning and M&E were significantly improved.

In the second period of the BEENWR Project implementation the quality of M&E is satisfactory; lessons learned from the previous years were successfully applied. At the same time, risks were not appropriately monitored. Risks weren't updated regularly; It is only stated in PIR 2015 and PIR 2017

that “Critical Risk Management Measures Undertaken”, without providing any details; according to PIR 2016 “No critical risks available for this Project during the reporting period”. This seems inappropriate because according to the Project Quarterly Progress Report (from ATLAS) the following financial risk was identified in 21/05/2015: “Economy/investment slow-down in Russia might result in failures of the planned national co-financing for the demonstration projects (both government and private) and related delays in the project delivery”. To address this very important risk (actually, the national financing under the Federal EE Programme addressing regional/provincial investment needs and guarantees has been cut; the overall investment climate in the country has declined) the BEENWR Project has planned to identify new co-financing opportunities for the demo projects; an advisor to work on resource mobilization was hired. But the risk was not further monitored. Indeed, the next record on risk monitoring was entered ATLAS only on 12/10/2017, i.e. 2.5 months before the closure, when unlikely any risk management measure would be possible to implement.

Based on the abovementioned, **implementation of M&E plan, for the whole duration of the BEENWR Project implementation is rated as Moderately Satisfactory (MS)**.

Highly Satisfactory (HS)	Satisfactory (S)	Moderately Satisfactory (MS)	Moderately Unsatisfactory (MU)	Unsatisfactory (U)	Highly Unsatisfactory (HU)
		✓			

3.2.6 UNDP and Implementing Partner implementation / execution coordination, and operational issues (*)

UNDP (Implementing Agency) implementation

This BEENWR Project is being implemented under the National Implementation Modality (NIM) and thus the role in the implementation is not as high as under the Direct Implementation Modality (DIM). Nevertheless, a number of direct responsibilities of the UNDP was described in the ProDoc (the exact roles of UNDP CO in the project organization structure should be assigned at the Inception Workshop). Among them:

- The Implementing Partner and the NPD should be in charge of planning, coordination, administration and financial management of the BEENWR Project with support by the UNDP CO
- PM should work under the direct supervision of the NPD and UNDP CO Head of Environment & Energy Unit
- In case consensus cannot be reached within the PSC, the final decision should rest with the UNDP PM, to ensure UNDP’s ultimate accountability for the BEENWR Project results
- An integrated management model should be designed for a rural residential construction site, that would address institutional, regulatory and information management issues throughout design and construction process focusing on EE, and based on a partnership approach between the UNDP, regional authorities, and investment institutions operating in the region
- UNDP CO and the UNDP Regional Coordination Unit (RCU) would conduct visits to project sites
- In addition, the BEENWR Project was considered under the Umbrella Programme “Improvement of Energy Efficiency in the Russian Federation” implemented jointly by UNDP, EBRD and UNIDO with the participation of key federal branch departments and regional authorities. As suggested

in the Umbrella Programme, UNDP CO should be responsible for the overall communication and coordination between programme partners and projects.

In general, these principles were followed during the implementation, especially in the post-MTR period. The MTR has flagged number of issues and among them need in strengthening of the BEENWR Project management, adequate addressing of which required more attention from the UNDP side in form of effectively monitoring and supervising the project management aimed at ensuring that potential/observed problems are identified and adequately addressed.

The key aspects of the UNDP implementation are as follows:

- UNDP was continuously looking at whether the BEENWR Project is being implemented based on the Results Based Management with appropriate focus on established targets
- The UNDP support to the Executing Agency was appropriate and adequate after the MTR; UNDP support to the project team also was adequate and timely, especially after the MTR:
    - The management team of the BEENWR Project has been changed when and as appropriate
    - Adequate engagement of the CTA and other consultants in the implementation
    - Extension of the BEENWR Project duration in accordance with the recommendation of MTR. In spite of the extension, due to the optimization of the funds and resources no additional funding has been requested
    - Providing necessary guidance for and approval of AWPs and their revisions
    - Encouraging application of the adaptive management

UNDP developed the Management Response to the MTR recommendations and ensured supervision of implementation of responsive activities.

BEENWR Project is in a priority list of the CO, which is applying necessary procedures to ensure that the project implementation is operationally effective.

UNDP was realistically evaluating progress and performance of the BEENWR Project. Rating of UNDP CO in last PIR corresponds to the overall rating of the TE.

At the same time, project management team before the MTR was lacking capacity. As mentioned above, the MTR identified a management risk and inadequate capacity for adaptive management.

In the ProDoc very simple requirements were considered for the Project Manager position (the ToR is included also in the Inception report, which was prepared after the selection of the PM), namely: experience as a project manager of not less than 3-5 years. No other specific experience was required that seems illogical for such complex project and not in line with the established procurement rules. However, during the selection process specific requirements were added (http://www.undp.ru/index.php?iso=RU&lid=2&cmd=vacancies&id=926). Namely:

Higher education in technical sciences or relevant field. An advanced degree is an advantage;

- Work experience in implementing projects on energy savings and energy efficiency
- Work experience in managing large projects at enterprises
- Participation in international projects is an advantage
- Excellent knowledge of peculiarities of pilot sites in project's pilot regions

It must be noted that length of the experience wasn't specified at all. This was resulted in the selection of Mr. Grigory Markin (born 04.05.1988), who would be 23 years old when selected as a project

manager. It is very unlikely that he could meet the requested criteria (even without criteria of 5-year experience).

Insufficient competence of the first PMs, managing the project before the changing of the Implementing Partner, was also mentioned by the consultants interviewed by the TE Team. The TE Team interviewed also former (first and second) PMs and has got an impression that their understanding of the Objective, Outcomes and implementation strategy was not exactly in line with those ones presented in the ProDoc. This might be one of the reasons that NDD was, in some cases, taking responsibilities of the project manager[18]. As stated in the MTR report "project management team is frequently referring to the former NDD as the one, who continues to provide all the substantive advice and leadership for project implementation". In addition, concentration of responsibilities of NPD and Director of the Responsible Party, in one person, might affect the quality of deliverables (Responsible Party was issuing the acceptance certificates for the technical reports, prepared by the contractors/consultants, although after the consideration of the BEENWR Project experts) and can be perceived as a potential conflict of interest. UNDP CO and UNDP RTA repeatedly were discussing these issues (strengthening of the Management Team by replacing the unexperienced PM, who would be able to actually manage the project implementation) but the situation was resolved only in 2014-2015.

As stated in PIR 2014, in the process of Executive agency change, the BEENWR Project could not perform many planned activities, and a significant part of the AWP remained not implemented. Probably, UNDP could play more active role in resolving this problem.

It must be noted that situation was greatly improved after the changing the Project Management Team in 2015. Since the BEENWR Project was implemented under the NIM modality, the UNDP didn't play a leading role in achievement of the planned results. Nevertheless, UNDP probably could be more active in monitoring the established indicators, especially related to the Objective (CO_2 emissions from energy use in new and renovated buildings in the 3 participating oblasts). According to the ProDoc, in achieving of a target of direct GHG reductions of 48,050 tCO_2e, main role was given to the demo projects in Arkhangelsk and their exclusion from the final list led to the sharp decrease of the emission reduction. Fortunately, due to the implementation of EMIS, additional (not foreseen in the ProDoc) GHG reductions were achieved, and overall target was achieved at the level of 50.23%.

Based on the abovementioned the UNDP implementation is rated as Moderately Satisfactory (MS)

Rating for UNDP implementation:

Highly Satisfactory (HS)	Satisfactory (S)	Moderately Satisfactory (MS)	Moderately Unsatisfactory (MU)	Unsatisfactory (U)	Highly Unsatisfactory (HU)
		✓			

Executing Agency implementation

As mentioned above, Executive Agency was changed in 2014. Initially the BEENWR Project was executed by the Office of Plenipotentiary of the President of the Russian Federation in the North West Okrug, and since 2014 - the Russian Energy Agency (REA) under the Ministry of Energy. The TE Team agrees with the MTR, in which the BEENWR Project implementation is rated as Moderately Unsatisfactory (MU). Before the MTR the Executing Agency (and Project Team as well) couldn't identify main/strategic objectives of the implementation and corresponding step-by-step approach. Because

[18] For instance, on 28.02.2012 Ms. Grishina in her message to the RTA stated that "for saving the status of the project taking into consideration changes in RF connected with presidential elections, think that it would be better to save me as a deputy national project director, project manager".

of this a significant time and funds were spent on activities, which not always were continued after the MTR (more details are presented in Chapter 3.3.3).

The situation was improved after the REA became an Executive Agency. The newly appointed NPD personally conducted various meetings and discussions with all parties involved and formulated realistic implementation strategy, which among others included replacement of the Project Team with more experienced and energetic one, engagement of CTA and other consultants as it was appropriate, and establishment of closer cooperation with the UNDP PSO and UNDP RTA. The REA was effectively implementing its both roles, aimed at providing management inputs as well as ensuring the high level of country ownership.

The REA also undertook significant steps in introducing energy management practices in Pskov and Vologda oblasts through the installation and practical use of EMIS. Activities aimed at the introduction of EMIS at national and international levels will be continued beyond the BEENWR Project duration. The REA is making corresponding practical steps in this direction.

Despite very active implementation strategy and continuous monitoring of its actual status, not all planned activities were implemented as planned. Moreover, the BEENWR Project was continuing its activities in Arkhangelsk Oblast to identify and implement demo projects and allocated significant resources for that, but nevertheless, no demo project was implemented in Arkhangelsk (the details are presented below in Chapters 3.3.1 and 3.3.3). This can be considered as a failure of the BEENWR Project.

More cooperation could be established with the UNDP/GEF project “Improving Energy Efficiency in Public Buildings in the Russian Federation”, which had the similar objectives.

Based on the abovementioned the Implementing Partner’s execution for the whole duration of the BEENWR Project is rated as Moderately Satisfactory (MS)

Rating for Executive Agency execution:

Highly Satisfactory (HS)	Satisfactory (S)	Moderately Satisfactory (MS)	Moderately Unsatisfactory (MU)	Unsatisfactory (U)	Highly Unsatisfactory (HU)
		✓			

Thus, Rating for IA/EA Implementation/Execution is rated as Moderately Satisfactory (MS).

3.3 Project Results

In this chapter BEENWR Project results including direct project outputs, short- to medium-term outcomes, and longer-term impact including global environmental benefits, replication effects and other local effects are evaluated. For better understanding of the logic of evaluation the detailed milestones (actions) as well as list of publications and video materials prepared by the EERRB Project, are presented in below tables.

Table 5: Key actions implemented

2011	
ACTIVITY 1	
June	Inception Workshop
	First meeting of the Project Steering Committee
ACTIVITY 3	
December	Publication of the brochure "Modern aspects of building energy efficiency in Russia”
2012	
ACTIVITY 1	

August	Development of municipal program in the field of energy saving and energy efficiency of Ostrovsky municipal district of the Pskov region
	Development of municipal programs in the field of energy saving and energy efficiency of Nevelsky municipal district of the Pskov region
September	Collection of information, analyze, data classification on current energy costs, and the development of alternatives to reduce energy consumption in buildings and improve the quality of utility services
November	Development of municipal programs in the field of energy saving and energy efficiency in the communal services of the Pskov region
December	Energy audits of residential buildings, located on the territory of Ostrovsky district of the Pskov region
	Establishment of institutional mechanisms for effective implementation of the program on energy saving and increasing energy efficiency of the Pskov region
	Development of typical layout of heat supply, water supply and wastewater schemes of municipalities of the Pskov region
	Development of a regional guidance document on construction "Guidelines for energy efficiency of residential and public buildings" in the Vologda region
ACTIVITY 2	
October	BEENWR Project organized a seminar in Vologda State Technical University
	BEENWR Project organized a seminar «Prospects for the development of model of professional personal training in the Energy Efficiency at designing construction and exploitation of buildings and environmental system»
December	Development of educational modules on EE in primary, secondary, specialized secondary, higher and professional educational institutions
	Development and implementation of educational module on research, modeling and technology, databases and computer programs in the field of EE
	Development and implementation of training modules on EE in the framework of the additional education of students in secondary educational institutions
ACTIVITY 3	
December	Development of a cost-benefit model to carry out the economic and financial analysis of investments in EE projects of capital construction
	Development and the formation of an electronic database on the building area and construction projects in Arkhangelsk
	Development and a pilot implementation of the program of energy certification of residential (of typical series) and public buildings in Arkhangelsk. Formation of catalogue of typical EE solutions for the serial residential and public buildings in Arkhangelsk, including the recommendations on capital repair: monitoring methodology and calculation of economic efficiency
December	Development of a model for the interaction of participants of resources market and consumers in order to improve the transparency of accounting of energy use. Creating an electronic monitoring program of energy consumption in public and residential buildings in Arkhangelsk
2013	
ACTIVITY 1	
January	Creating of scalable geographic information system (GIS) for the region displaying the actual energy flows, the possibility of obtaining statistics and designations of problem areas or individual components
	Energy audits of residential buildings, located on the territory of Nevelskiy district of the Pskov region
August	Development of model of management decisions in the housing sector and the development of requirements for automatized workstations
October	Development of a model for monitoring and management of resources
December	Implementation of information system of monitoring and support of acceptance of managerial decisions in housing and utility sector

	Development and creation of geospatial databases for center of management and monitoring for EE of municipalities in the context of the State Information System of EE
	Development of standards for consumption of utilities by institutions financed from the municipal budget in Ostrovsky and Nevelsky districts
	Second meeting of the PSC
ACTIVITY 2	
July	Development of training program for Master's programs of higher education on energy saving
October	Study tour to Belarus: training modules on EE
	BEENWR Project's specialists participated in the International Energy Forum "Energy efficient technologies in the modern institution"
November	The second Study tour to Belarus
December	Two seminars for teachers organized in Pskov region: "Energy efficiency in the content of school education" and "Standards and Labels for Promoting EE in Russia"
ACTIVITY 3	
March	Development of the concept of EE design bureau in Arkhangelsk
June	Support in organization of the Russian-Danish conference on energy savings and energy efficiency
August	Development of the documentation (design, budget) on implementation of integrated projects on improving EE of serial apartment buildings in Arkhangelsk
December	Development of software (and purchase of hardware) "Information analytical system of the municipality" City of Arkhangelsk "in the field of energy saving and energy efficiency"
	Development of list of non-typical measures aimed at improving EE of apartment buildings in Arkhangelsk, formed on the basis of the results of energy audits and reconstruction of pilot apartment buildings in Arkhangelsk
	Establishment of integrated energy management system of the municipality "City of Arkhangelsk" taking into account the geographic, climatic, technological, budgetary and administrative features of the territories
2014	
ACTIVITY 1	
March	Russian Energy Agency (REA) has become a new National Executive Agency of the BEENWR Project
April	Geospatial database developed in the Pskov region
December	Analytical review of Federal, Regional and Municipal legislation of the Russian Federation in the field of EE, energy saving and implementation of contracts on objects of residential, public and administrative building
	Third meeting of PSC
ACTIVITY 2	
April	Educational materials, developed within the BEENWR Project, presented in the frames of 5th Forum "Energy Saving and Energy Efficiency Management" in Rostov on Don
September	Administration of the Pskov Region commended educational materials on energy efficiency for schools, developed within the framework of the Project
November	Educational materials, developed within the BEENWR Project, presented in the frames of 6th Forum "Energy Saving and Energy Efficiency Management" in Yakutsk
December	"Modern aspects of staffing of EE buildings in the Russian Federation" was published
ACTIVITY 3	
December	The video on BEENWR Project interim results released by one of TV channels in Arkhangelsk
	Adjustment of design documents, in order to introduce a series of EE measures in new residential building located in Vologda, Fryazinovskaya street
2015	
ACTIVITY 1	
March	Negotiations with Administration of the Pskov region on: state of EE of the housing stock and budgetary institutions; creation of urban energy management system

May	A meeting on attracting extra-budgetary funds in pilot projects, was held at the UNDP Project Support Office in Moscow
June	Discussions with the Administration of the Pskov region on commencement of works on creation of urban energy management system
July	Selection of 18 public buildings (in cooperation with the Pskov region Administration), for inclusion in the system of urban energy management, with subsequent raising of extra budgetary resources through the mechanisms of energy service
	Study tour to Croatia: Best practices for implementation of energy management information system (EMIS)
August	Pre-feasibility studies completed for the potential EE projects in the Pskov region
	Development of the organizational model of energy service agreements (contracts) for the implementation of regional programs of retrofits of common property in apartment buildings and guidelines for its implementation
	Discussions on the implementation of EMIS in the Pskov region
	Fourth meeting (on-line) of PSC
October	Discussion of prepared drafts of legal acts on improving EE by the established Ad-hoc working group
November	Fifth meeting of PSC
	International Seminar "Croatia experience on energy management in a public sector and use of an information programme on energy monitoring- EMIS" was organized in Pskov
	Practical course on the implementation of the EMIS at public buildings was held in Pskov (in collaboration with the Committee on Tariffs and Energy of the Pskov region)
	Development of a plan on improvement of state regulation in the field of energy resources measurement to improve the EE of buildings in the North-West of Russia
	The analysis of the legal and sub-legal acts in the field of energy service in the residential housing for the purposes of further improvements
December	Preparation of feasibility studies for pilot projects in the Pskov region
	Development of Methods for assessment of economic efficiency of application of energy-saving measures during capital repairs of apartment buildings
	Discussion of the BEENWR Project implementation with the Deputy Governor of the Vologda region
ACTIVITY 2	
July	Educational modules on energy efficiency implemented in schools and colleges of Arkhangelsk, Pskov and Vologda regions
September	First students joined Master's program "Energy Management" (developed within the BEENWR Project) at the Saint-Petersburg state university
	An agreement has been reached to establish a laboratory on energy management at Northern (Arctic) Federal University (NARFU)
	The Ministry of Education and Science of the Russian Federation jointly with the BEENWR Project announced a competition in the field of energy saving and energy efficiency for students, postgraduates and schoolchildren
November	Preparing of educational plans and programmes for bachelor's and master's degrees in the field of energy efficiency and energy saving
	Implementation of training modules on EE in schools, vocational schools and colleges
	More than 50 9th graders from all areas of the Arkhangelsk region played the online game «ZHEKA» with the BEENWR Project support
	Presentation and award ceremony for the best project in the field of energy saving and energy efficiency
	Educational materials "How to save energy at home?" published and distributed
	More than 300 specialists participated in energy saving webinars organized by the BEENWR Project
December	Award ceremony of the winners of the competition for the best energy saving project among school students and students of technical schools and junior colleges - in St. Petersburg
ACTIVITY 3	

June	Signing of a tripartite Agreement on a joint implementation of demonstration project in Parfino, the Novgorod region
July	Signing of an Agreement on the implementation of demo project on EE construction in Porkhov, Pskov region
August	Russian version of the IAE publication “Modernizing building energy codes” was published with the BEENWR Project assistance
	Selection of potential demo sites for the introduction of energy saving technologies in the Arkhangelsk region started
	Starting the implementation of energy saving measures to increase EE in demo building in Parfino
September	Selection of demo projects (retrofit) in the Pskov region
October	The construction work of the first floor of the pilot EE residential building has been completed in the town of Porkhov in the Pskov region
	The selection of potential demo projects (retrofit) in the Arkhangelsk region
December	The final stage of the demo-project implementation of a new energy-efficient construction in Parfino
	Video on results of the BEENWR Project
2016	
ACTIVITY 1	
March	The Roadmap for the EMIS implementation was presented to the Deputy Governor of the Pskov region
April	A working group of Russian and Croatian experts was created in the Pskov region for the installation of EMIS
	Sixth meeting (on-line) of PSC
May	The road map for establishing a municipal energy management system was discussed in Vologda
July	The EMIS launched in Russian Federation
	The first energy manager in the Vologda region started her job
August	The concept for the future Center for EE was discussed in Vologda
September	Analysis of the current state of the building stock in the Russian Federation (including residential buildings, apartment buildings) and its changes over the past 10 and 20 years in terms of energy efficiency, prepared
	Seventh meeting (on-line) of PSC
October	A seminar on energy management was held in Pskov
November	Developing of the concept of Regional energy saving center in Vologda
	BEENWR Project on EE participated in ENES 2016
	All-Russian Conference for energy managers was held in Moscow with support of the BEENWR Project
	Eighth meeting of PSC
December	Web site банкжкх.рф - a modern instrument for EE, has been launched
	Development of recommendations for investments in EE in public and multi-apartment buildings
	Developing of concept of expert group, functioning for support the financing of energy efficiency and energy saving in housing
ACTIVITY 2	
March	The solemn opening of the Interregional Center for professional training in EE, created with the support of the BEENWR Project, was held in the NARFU
April	Beyond the North-West: pedagogues from all over the country participated in the national seminar for teachers, organized within the Project
May	The event for energy conservation was organized for elementary school students in Pskov
June	The opening ceremony of the energy management laboratory was held in NARFU
July	A week of international energy management was held in Pskov
August	Training modules have been prepared for the Interregional Center of Distance Learning for Energy Efficiency (ICEE)

	International delegations from UNDP Armenia, Kazakhstan and Turkmenistan visited Russia in order to study BEENWR Project`s experience
September	The BEENWR Project supported the festival “Together is brighter” organized by the Ministry of Energy of Russian Federation
	Educational materials for primary and secondary schools published
October	Tenth session of the Joint educational program of UNESCO/ISEDC and BEENWR Project
November	Preparing for publishing educational materials for Masters’ degree "Energy management"
	Online educational programme launched on ICEE web
	Results of the 2nd International Competition in EE, organized by the BEENWR Project, announced at the ENES 2016 Youth Day
December	A Day of energy efficiency organized for schools in Vologda
ACTIVITY 3	
January	Catalogues of standard and non-standard solutions for energy saving in residential buildings were prepared
	An international consulting company is conducting the monitoring of the energy consumption in the EE building in Parfino
June	EE building commissioned in Parfino
	Installation of server for EMIS in the Pskov region
	Installation of controllers on energy consumption meters in the Pskov region
October	EE retrofit of a kindergarten in the town of Ostrov started
December	EE retrofit of a Health Clinic in Vologda started
	An "intelligent house" was built in Porkhov
	A video on BEENWR Project results
2017	
ACTIVITY 1	
February	EMIS was presented at the meeting of the Housing Committee of Saint-Petersburg
March	Decision made on establishment of the Regional Energy Saving Center in the Vologda region
April	The Executive bodies of the Pskov region assigned responsible parties for the monitoring of energy consumption
May	Technical support service for the EMIS started its work in Russia
June	Ninth meeting (on-line) of PSC
September	International exchange of experience: the delegations from Serbia and India visited Russia
October	The final meeting of PSC
ACTIVITY 2	
April	National seminar for teachers of primary and secondary schools, "Energy efficiency in the content of primary and secondary education," was held in Pskov
April	National seminar for university lecturers in the field of EE was held
May	Educational material "Fundamentals of energy saving" for the students of 5th–9th grades: workbook and teacher's guide published
September	Festival of energy savings held in Parfino
September	BEENWR Project supported the Festival of energy savings #Together is brighter” in St. Petersburg
October	11th session of the Joint educational program of the UNESCO/ISEDC and BEENWR Project
ACTIVITY 3	
July	Kindergarten "Raduga" in the town of Ostrov opened its doors after EE retrofit
September	EE retrofit of the health clinic in Vologda completed
October	Video on BEENWR Project`s activities during 2011-2017 prepared

Table 6: Publications and video materials

Year	Publication / video material
2012	Modern aspects of building energy efficiency in Russia. Regional authorities’ guidance
2013	Modern aspects of staffing of buildings energy efficiency in the Russian Federation
	Video about interim Project`s results

2014	Teaching material for the higher degree: - The legal framework of energy efficiency in the Russian Federation - The importance of energy saving. State policy in the field of improving the efficiency of energy use - Energy efficiency and greenhouse gases (CO_2) - Methods of energy saving, technology, facilities and construction - Systems and metering of energy consumption - Fundamentals of energy audit objects. Energy passport of the enterprise - Energy management system. ISO 50001 - Methods and criteria for evaluating the energy efficiency
2015	Russian version of the IAE publication “Modernizing building energy codes” was published with the Project assistance
	The review of the Project's activity is presented in Moscow in a short video
	Video about results in 2015 of UNDP-GEF Project "Building energy efficiency in the North-West of Russia"
	Methodological materials for teachers "How to save energy at home" (primary school)
	Workbook for elementary school students "How to save electricity at home" (primary school)
	Catalogue of non-standard solutions for energy saving in residential buildings
	Catalogue of standard solutions for energy saving in residential buildings
2016	Methodical instructions "Practical steps of city energy management implementation"
	Methodological materials for teachers of the course, "Foundations of sustainable energy use" (middle school, 4^{th}-9^{th} grades)
	A workbook for secondary school students: "Fundamentals of sustainable energy use" (middle school, 4^{th}-9^{th} grades)
	Video: Continuing education in the field of energy saving
2017	Video about Project activities 2011-2017
	Video: Energy efficient technologies in new construction and capital repairs
	Video: City energy management system implementation
	Information and methodological materials for conducting homerooms on the subject "Fundamentals of energy saving" for the students of 5th-7th grades
	A workbook for conducting homerooms on the subject "Fundamentals of energy saving" for the students of the 5th–9th grades
	News digest 2011-2017: History of the BEENWR Project
	Energy efficient technologies for new construction and capital repairs
	The system of continuous education in the field of energy efficiency
	The establishment of an urban energy resource management system
	User’s manual: utilization of Russian version of EMIS

3.3.1 Overall results (attainment of objectives) (*)

In this Chapter, the achievements of expected results are evaluated in terms of attainment of overall objective as well as identified outcomes and outputs. For this the performance by components is analyzed by looking at: (i) general progress towards the established baseline level of the indicators; (ii) actual values of indicators by the end of the BEENWR Project vs. designed ones; (iii) evidences of relevance, effectiveness and efficiency of the results as well as how these evidences were documented.

Overall results of the BEENWR Project are rated as Moderately Satisfactory (MS)

Highly Satisfactory (HS)	Satisfactory (S)	Moderately Satisfactory (MS)	Moderately Unsatisfactory (MU)	Unsatisfactory (U)	Highly Unsatisfactory (HU)
		✓			

The summary of evaluation of attainment of Objective and Outcomes of the BEENWR Project are presented in Table 7.

Table 7: Matrix for rating the Achievement of Outcomes

Objective/ Outcome	Performance Indicator[19]	2011 Baseline	2017 End of BEENWR Project Target	2017 End of BEENWR Project Status	TE Comments	Rating
Build local capacities for and demonstrate local solutions to improved energy efficiency in construction and maintenance of buildings in the North West of Russia: Pskov, Vologda, and Arkhangelsk Oblasts	CO_2 emissions from energy use in new and renovated buildings in the 3 participating oblasts	85,000 tCO_2 emitted due to space heating in new and renovated buildings during the 5-year project period (2010-2015) 1.7 $MtCO_2$ emitted due to space heating in new and renovated buildings during their lifetime (assuming a 20-year lifetime)	Direct reductions of 48,050 tCO_2e as compared to the baseline	Reported[20]: 24,135 t CO_2 over 20 years, out of which 2,919 tCO_2 due to implementation of demo projects (1,261 in Pskov; 1,162 in Vologda; and 496 in Novgorod Oblasts); 21,216 t CO_2 - due to the EMIS application (18,702 in Pskov; 2,514 in Vologda Oblasts)	No indicator was established for assessment of the local capacities (the built capacity is an essential part of the Outcome 2) The TE Team has verified achieved GHG reductions through: - Analysis of the report prepared by the contractor, which among others included description of methodology - Analysis of excel sheets with input data and calculations - Interview followed by the working meeting with the contractor The TE Team verified Direct Project emission reduction in amount of 24,135 t CO_2 over 20 years, which is 50.23% of the target. However, the actual reduction might be higher if the reductions are calculated by the end of the BEENWR Project. Indeed, the emission reduction due to EMIS, depends number of buildings monitored	**MS**

[19] Performance indicators and targets are sourced from the Annex 1 (Draft Updated Strategic Results Framework) to the report "Effective implementation of the Pskov Oblast Energy Efficiency Programme". They differ from those ones presented in Annex A (Project Logical Framework) to the ToR for the International Consultant to conduct TE of BEENWR Project

[20] Report: Monitoring of energy consumption of demonstration buildings, calculation of energy saving and carbon dioxide emissions (in Russian: Отчет: Мониторинг энергопотребления Демонстрационных объектов, расчет сокращения потребления энергоресурсов и размера выбросов углекислого газа)

Objective/ Outcome	Performance Indicator[19]	2011 Baseline	2017 End of BEENWR Project Target	2017 End of BEENWR Project Status	TE Comments	Rating
					by it. And this number is permanently increasing (especially in Vologda, where not all the public buildings are entered and thus monitored by the EMIS system; this process is ongoing	
			Indirect reductions of 599,000 tCO_2 emitted due to space heating in new and renovated buildings during their lifetime (assuming a 20-year lifetime)	Reported by the BEENWR Project and verified by the TE Team: 167,053 t CO_2 consequential reductions	Consequential emissions are underestimated. They are estimated considering replication effects of demo projects of residential buildings only but not public buildings. Replication effects of EMIS are also not considered in consequential emission reduction calculations	
Outcome 1: ProDoc body text: Enabling environment and strengthened enforcement capacities for improved EE at the provincial and local levels Logframe: Provincial and local policies and regulations ensuring enforcement of EE building norms	Operational oblast-level legal and regulatory framework for enforcing and monitoring building codes in Vologda oblast	Lack of current, comprehensive program for codes enforcement with systematized, regular on-site inspections	Model system operating in the oblast including an on-site (inspection program) and the program shared with other oblasts	in 2012-2013 the BEENRW Project has developed an outline of legal and regulatory framework and related institutional arrangements for Vologda oblast and submitted to the National Housing Refurbishment Fund and Ministry of Construction for consideration	After the MTR the new Implementing Partner and Project Team understood that the updated EE Law does not allow introduction of any regional EE legislation including construction norms. Therefore, these works were stopped, and focus was shifted to the development of federal level legal and regulatory framework **Target not achieved**	**MS**
	Effective implementation of the Pskov Oblast EE Programme	Pskov Oblast EE Programme lacks regulatory framework and institutional capacity for effective operation	Oblast-level system of results-based monitoring operating in Pskov Capacity of the EE Programme increased in at least 3 key areas as stated in the	EE programme of Ostrovsky and Nevelsky districts, and communal services of Pskov oblast developed; institutional arrangements/mechanisms for their	Implementation of the mentioned programme was not monitored and thus, its effectiveness not assessed **Target not achieved**	

Objective/ Outcome	Performance Indicator[19]	2011 Baseline	2017 End of BEENWR Project Target	2017 End of BEENWR Project Status	TE Comments	Rating
			capacity development plan	implementation established		
	Number of municipalities in the Pskov region having adopted a fully functional energy management and information system (EMIS) Amount and type of information available from the system	Lack of a model for EE municipalities in Pskov oblast	Applied model of utility services provision in place and functioning for 2 municipal districts	The EMIS system developed by the UNDP/GEF project in Croatia, was successfully adapted to the Russian conditions and put in operation first in Pskov oblats, and then in Vologda oblast as well. The information and data (both, input and processed values) are available for oblast and munikcipal energy authorities	The installation and putting into the operation of EMIS is the biggest achievement of the BEENWR Project **Target achieved**	
	Development of municipal energy efficiency norms in Pskov Oblast Number of regions/municipalities outside of Pskov adopting similar EMS system and EE norms	Absence of municipal EE norms	Municipal EE norms adopted in 2 municipalities in Pskov oblast; norms disseminated to other oblasts EMIS and EE norms similar to the Pskov oblast adopted in at least two oblasts or municipalities outside Pskov		**Target not achieved**	
Outcome 2: Improved local capacities to leverage and manage investments into EE	Number of schools and other educational entities using the EE training programmes developed by the project	Limited exposure to EE-related topics at the post-secondary level; absence of programs at other levels of education Lack of specific, focused EE curriculum in educational institutions in the participating oblasts; no professional	At least 97 primary/secondary schools, 12 vocational/professional schools and 5 universities have integrated the EE training programmes and modules developed by the project into their curricula and educational programs	System of continuous education in EE was created Scientific-educational energy management laboratory established at the Educational and Scientific Center for Energy Innovation of the Nordic (Arctic) Federal Lomonosow University (NARFU) Interregional Center for Vocational Training in Energy	**Target has been achieved**	**S**

Objective/ Outcome	Performance Indicator[19]	2011 Baseline	2017 End of BEENWR Project Target	2017 End of BEENWR Project Status	TE Comments	Rating
		training center in the NW Federal Region focusing specifically on continuing education in EE and energy management; no training units specifically focusing on EE No means of capturing or disseminating experiences in EE programs	Formal recognition/recommendation of the Ministry of Education and Science (and/or their regional affiliates) sent to all schools to include the training modules developed by the project into the schools' curricula and educational programs	Saving and its Regional branches are established System of distance learning and dissemination of knowledge on EE, created Interregional exchange of experience and best practices is ensured		
Outcome 3: Reduction of GHG emissions demonstrated: 45-76% reduction in energy consumption in construction and maintenance sectors; 10-20% reduction in energy losses in energy networks	Status of the demo buildings and available energy performance data	No architectural or civil engineering approach to new, more-efficient residential developments exists in the NW federal region .	At least one EE demonstration building constructed and its performance monitored for at least one year showing 45-76% reduction of heat demand compared to a similar building constructed in accordance with current (2014-2015) construction norms in force (Optional depending on what is concluded by the PSC about the continuation with this subcomponent)	Two residential buildings, were constructed in Porkhov, Pskov Oblasts and Parfino, Novgorod Oblast Overall heat energy saving in new residential buildings equals to 46% Kindergarten Raduga in Ostrov, Pskov Oblast (energy sacing: 29%) and Vologda health clinic No. 3 were renovated.	**Target partially achieved** because the number of demo projects, and correspondingly, GHG reductions, were decreased (ProDoc considered implementation of 11 demo projects)	**MS**
	Number of building having obtained an energy certificate Number of buildings with EE retrofit measures implemented and the amount of monitored and	Energy performance certificates are not used in the building stock in Arkhangelsk	At least 579 buildings can present an energy performance certificate (energy passport) At least six buildings have implemented agreed EE retrofit	Around 600 energy audits were conducted in Archangelsk oblast A model of energy certification was developed for residential and public houses in Arkhangelsk	**Target partially achieved**, because system of energy passports was not introduced (energy audits and technical inventories were conducted instead)	

Objective/ Outcome	Performance Indicator[19]	2011 Baseline	2017 End of BEENWR Project Target	2017 End of BEENWR Project Status	TE Comments	Rating
	verified energy savings		measures financed by other than GEF project resources and showing energy savings of at least 40% compared to the situation before the investments	Technical inventory of about 860 public and municipal buildings have been implemented in Pskov Oblast		
	Number of municipalities in the Arkhangelsk region having adopted a fully functional Energy Management and Information System (EMIS), including appointment of energy managers Amount and type of information available from the system	No coordinated information available for decision-making; lack of a methodology for EE project management in the housing and communal services sector in Arkhangelsk oblast	At least 1 municipality in the Arkhangelsk region has taken into use a fully functional EMIS, including annual data on the energy performance of all public buildings, all private buildings connected to the municipal DH network and all public utilities	TA for development of EMIS in Arkhangelsk Oblast provided but works were not completed EMIS was introduced in Pskov and Vologda oblasts but not in Arkhangelsk Formally the target was not achieved. On the other hand, "Croatian" EMIS, adapted to the Russian conditions, is successfully operating in Pskov and Vologda oblasts. Therefore, target is partially achieved	**Target partially achieved**	

Color coding:
Green: completed, indicator shows successful achievement
Yellow: indicator shows expected completion by the end of the project
Red: indicator shows poor achievement – unlikely to be completed by project closure

In the below text the justifications of the ratings, presented in Table 7, are presented.

Objective: Build local capacities for and demonstrate local solutions to improved energy efficiency in construction and maintenance of buildings in the North West of Russia: Pskov, Vologda, and Arkhangelsk Oblasts

Target 1: Direct reductions of 48,050 tCO_2e as compared to the baseline

The Consultants checked and verified the monitoring data as well as calculations of direct project reductions of GHG emissions, on the basis of the review of the monitoring methodology, and also how the monitoring has been actually implemented.

- Monitoring methodology - It is Consultants' opinion that the monitoring methodology is in line with the best international practice as well as ProDoc. The methodology considers monitoring of both, baseline scenario and project scenario parameters; in some cases, the parameters are not directly monitored but estimated.
- Actual monitoring - It is Consultant's opinion that the monitoring has been implemented in accordance with the methodology. All parameters were metered, recorded and processed appropriately. Parameters, which were not directly measured/metered, were correctly calculated by using monitoring data and default or designed values of parameters

The results of the monitoring as well as GHG reductions are presented in Table 8.

Table 8: Direct Project Emission Reductions

a) Demo Project: Construction of Residential Building in Porkhov, Pskov Oblast

Monthly average heat consumption (as per norms), Gcal/m	Monitored monthly average heat consumption, Gcal/m	Annual heat savings, Gcal/a	Annual heat savings, MWh/a	Annual electricity savings, MWh/a	Annual GHG reductions, t CO_2/a	**Direct life-time GHG reductions, t CO_2**
51.53	27.70	166.81	194.00	21.40	43.51	**870.216**

b) Demo Project: Construction of Residential Building in Parfino, Novgorod Oblast

Monitored monthly average heat consumption (baseline), Gcal/m	Monitored monthly average heat consumption (demo buiolding), Gcal/m	Annual heat savings, Gcal/a	Annual heat savings, MWh/a	Monthly average electricity consumption (baseline), MWh/m	Monthly average electricity consumption (demo building), MWh/m	Annual electricity savings, MWh/a	Annual GHG reductions, t CO_2/a	**Direct life-time GHG reductions, t CO_2**
26.67	14.27	86.78	100.92	2.67	0.83	22.02	24.83	**496.677**

c) Demo Project: Kindergarten Raduga in Ostrov, Pskov Oblast

Monthly average heat consumption (before the renovation), Gcal/m	Monthly average heat consumption (after the renovation), Gcal/m	Annual heat savings, Gcal/a	Annual heat savings, MWh/a	Monthly average electricity consumption (before the renovation), MWh/m	Monthly average electricity consumption (after the renovation), MWh/m	Annual electricity savings, MWh/a	Annual GHG reductions, t CO_2/a	**Direct life-time GHG reductions, t CO2**
36.54	26	73.78	85.81	3.9	3	10.8	19.51	**390.289**

d) Demo Project: Health Clinic No. 3 in Vologda

Annual heat savings, Gcal/a	Annual heat savings, MWh/a	Annual electricity savings, MWh/a	Annual GHG reductions, t CO_2/a	**Direct life-time GHG reductions, t CO_2**
233.45	271.50	16	58.08	**1,161.510**

e) GHG reductions due to EMIS usage for the public buildings

Oblast	Annual energy savings, MWh/a	Annual GHG reductions, t CO_2/a	**Direct life-time GHG reductions, t CO_2**
Pskov	4,629.28	935.114	**18,702.271**
Vologda	622.26	125.696	**2,513.9102**

f) Summary

	Direct life-time GHG reductions, t CO_2
EMIS	
Pskov oblast	18,702.271
Vologda oblast	2,513.910
Demo projects	
Kindergarten Raduga, Ostrov, Pskov oblast	390.289
Residential building, Parfino, Novgorod	496.677
Health clinic No. 3, Vologda	1,161.510
Residential building, Porkhov, Pskov oblast	870.216
TOTAL	**24,134.873**

In calculations AF Consult used the same values for emission factors of natural gas (is used for heat production) and electricity grid, namely 0.202 t CO_2/MWh. It must be noted that in the ProDoc higher value of power grid emission factor is used, namely 0.725 t CO_2/MWh. In the EBRD report "Dynamics of the development of carbon emission factors from production of Electricity in Russia" (2010), combined margin emission factor for North-West power grid for 2017 is predicted to equal to EFcm = 0.392 t CO_2/MWh. This means that the emission reductions are calculated conservatively.

Emission reductions due to the application of EMIS in Pskow and Vologda oblasts are calculated on the basis of data provided by the regional energy managers. Energy savings were achieved due to the responsive actions when the EMIS was showing either the inconsistency between the supplied (by the utility) and consumed (metered by EMIS) heat energies (e.g. due to leakage) or overheating of the buildings. Energy savings due to the EMIS were estimated based on the 3-year data (covering the period of EMIS usage) with corresponding adjustments (by Heating Degree Days Index). It must be noted, that (i) the accuracy of such calculations cannot be very high; and (ii) application of static baseline is questionable (unlikely the energy consumption would remain as high as now, for the next 20 years). Nevertheless, the calculated emission reductions due to the EMIS can be verified because likely the number of public and residential buildings entered in EMIS, will be increased in the future and correspondingly, the post-project emission reductions due to the EMIS will be higher than calculated.

Based on the abovementioned it is the TE Team opinion that the energy savings and GHG reductions achieved due to the implementation of demo projects – construction of new and renovation of existing buildings, as well as putting in operation of EMIS, are reliable and can be verified.

The established target, direct reductions of 48,050 tCO_2e as compared to the baseline, has been achieved by 50.23%.

Objective. Target 2: Indirect reductions of 599,000 tCO2 emitted due to space heating in new and renovated buildings during their lifetime (assuming a 20-year lifetime)

This target was established based on the following considerations:

The direct emission reductions (48,050 tCO_2eq) would be achieved through the implementation of demo projects in Arkhangelsk (renovation of six multi-family buildings) and Vologda (construction of: three single-family, one double-family, and one triple-family residential buildings). The replication

factors were assumed to equal to: 60 for existing block multi-family residential buildings; and 600 for new constructed single-family residential buildings. These values correspond to the assumption that a quarter of residential and public buildings planned for construction and capital reconstruction in the regions can directly replicate the project methodology and corresponding emission reductions during the four years immediately following the completion of the project demonstration sites. Using the GEF bottom-up methodology, indirect emission reductions attributable to the project was estimated at 599,000 tCO_2e over the 20-year lifetime of the investments.

The selection of demo projects of residential buildings, actually implemented by the BEENWR Project, was largely delayed mostly due to the problems in the financing. Finally, the core financing (without EE measures) of the demo projects in Parfino and Porkhov, was provided by the Resettlement Program. In the report "Monitoring of energy consumption, calculation of energy consumption savings and carbon dioxide emissions reductions of demonstration facilities", prepared by the contractor company AF Consult, top-down consequential emission reductions were estimated as 167,053 t CO_2. Bottom-up reductions were not estimated at all. The TE Team has estimated those reductions by applying the same assumptions as in ProDoc (but only for Resettlement program) and using the data presented in the above-mentioned report by AF Consult.

Table 9: Bottom-up consequential GHG reductions, estimated by the TE Team

No	Oblast	Annual floor area (under the Resettlement Program), m^2	Floor area of residential demo projects (Parfino, Ostrov)	Life-time emission reductions, t CO_2	Length of construction period, y	Influence period, y	Replication factor	**Bottom-up emission reductions, t CO_2**
		A	B	C	D	E	F=A/B*25%/D*E	G=C*F
1	Arkhangelsk	266,422						
2	Vologda	170,499						
3	Novgorod	51,448	1,129	497				
4	Pskov	60,743	1,909	870				
	Total	**549,112**	**3,038**	**1,367**	**2.5**	**10**	**181**	**247,071**

The Table 9 clearly shows that consequential emission reductions were underestimated by the BEENWR Project.

Another reason for underestimation of consequential emission reductions is that replication effects of EMIS were not considered at all. On the other hand, scaling-up of use of EMIS in Pskov and Vologda oblasts is observed and considering that Russian Energy Agency plans extension of the EMIS use in other oblasts and that in the future not only public buildings can be entered into the system, but residential buildings as well, the replicability factor might reach high value.

In 2016 an analysis of the current state of the building stock in the Russian Federation and its changes over the past 10 and 20 years in terms of energy efficiency was conducted, according to which:

- The policy of revitalization activities in the field of energy efficiency in buildings has produced results
- The share of buildings after capital repairs in Russia is significantly lower than in the EU, i.e. there is a need in more renovations
- Buildings in Russia is the sector with the largest potential for energy savings.

- In 2016, a "road map" was introduced to improve the energy efficiency of buildings. According to the roadmap, the share of apartment buildings, as well as public and administrative buildings of the highest energy efficiency class, should reach 10% by 2018; 20% by 2020; and 30% by 2030.

The above-mentioned could be also considered in estimations of consequential emission reductions because the BEENWR Project facilitated the penetration of EE principles, designs and technologies in the building sector. If the consequential emission reductions are estimated in this way, they might be doubled-tripled and if so, even reach the established target.

Finally, consequential emission reductions associated with the BEENWR Project's contribution to the creation of regulatory framework (if any) were not assessed at all.

Based on the abovementioned achievement of the Objective is rated as Moderately Satisfactory (MS).

Highly Satisfactory (HS)	Satisfactory (S)	Moderately Satisfactory (MS)	Moderately Unsatisfactory (MU)	Unsatisfactory (U)	Highly Unsatisfactory (HU)
		✓			

Outcome 1: Enabling environment and strengthened enforcement capacities for improved EE at the provincial and local levels

The MTR recommended the revision of indicators and targets for Outputs of Outcome 1, but most of these revisions have not been accepted by the BEENWR Project Team. In particular:

- Output 1.1. It was recommended: (a) To have three new indicators: (a.i) Status of adoption of the new construction norms for Vologda oblast; (a.ii) Adequacy of the legal and regulatory framework and related institutional arrangements and capacity to enable effective enforcement; and (a.iii) Optional (subject to the duration of the project): Verified energy consumption (kWh/m^2) of at least 3 randomly selected new buildings constructed in accordance with the new norms; and (b) To have three new targets: (b.i) Formal adoption of the new construction norms; (b.ii) Adequate legal and regulatory framework and related institutional arrangements and capacity in place to enable effective enforcement; and (b.iii) Optional: Verified energy demand for heat (incl. ventilation) equal or less than XX kWh/m^2 per year (adjusted to reflect the climatic data of a "standard year" of 3 randomly selected new buildings constructed in accordance with the new norms. These recommendations haven't been accepted by the BEENWR Project Team because "according to results of Federal and regional level consultations it was confirmed that updated EE Law doesn't give a possibility for regional administration to introduce any kind of new EE construction norms in addition to the confirmed federal ones". Nevertheless, in 2012-2013 the BEENRW Project has developed an outline of legal and regulatory framework and related institutional arrangements for Vologda oblast and submitted to the National Housing Refurbishment Fund and Ministry of Construction for consideration.
- Output 1.2. Recommendation to establish a new target "Concrete targets for new regulations / capacity building still to be defined: who, how many, for what?" hasn't been accepted because of the same reason as stated above.
- Output 1.3. The BEENWR Project Team has partially accepted the recommendation and revised an indicator but not target ("All municipalities in the Pskov region have in use a fully functional EMIS with appointed energy managers and including annual data on energy

performance of all public buildings, public utilities and all private buildings connected to the municipal DH network“ instead of original one “Applied model of utility services provision in place and functioning for 2 municipal districts”). The reason for not accepting revision of the target was that the Project Team found definition “all municipalities … all public buildings” to be very strict.

In the pre-MTR period of implementation, the efforts were focused at improving legal framework at the federal level through the participation in various working groups and among them:

- Scientific advisory council of the Federation Council Working Group for monitoring of implementation of Federal Law No. 261-FZ "On energy saving and energy efficiency improvements ..." (2009)
- State Duma Energy Committee Work Group on energy savings and EE
- Expert council of the National Energy Savings Union
- Expert council of the Russian Energy Agency

At those meetings suggestions on regulatory framework improving, adopting of new regulations and requirements in construction, maintenance and metering in buildings, were being discussed. Nevertheless, the BEENWR Project impact on improving Federal legislation during the first half of the implementation was negligible.

Main activities under this output included:

- Development of regional methodic instructions for application in Vologda Oblast in order to implement a new monitoring model on EE buildings at the regional level.
- Analysis of the best practices of legal and regulatory frameworks on energy saving and energy efficiency at regional and municipal levels. As a result, a plan for establishment of regional and local regulations in Pskov Oblast for 2012-2013, was developed.
- Development of Regional methodical instructions for: (i) implementation of a new model of monitoring of building EE at the regional level; (ii) collection, analysis, and systematization of data on current energy expenditures; (iii) energy surveys in Pskov Oblast (108 apartment buildings and public houses in Ostrov and Nevel Districts). In implementation of these activities, two international experts in EE and development of EE municipal norms, were involved.
- The development of a GIS-based model for accounting of energy resources to enable data collection for calculation of economic effects from the implementation of EE measures in Pskov Oblast.
- Preparation of a catalogue of EE solutions for reconstruction of typical buildings In Arkhangelsk - passed to the Department of Housing and Communal Services of Arkhangelsk Oblast

The new construction norms for the Vologda region has been drafted by the BEENWR Project, but not adopted by the regional administration. The reason was that such norms should be first adopted at the federal level (the updated EE Law does not allow introduction of any regional EE construction norms besides the adopted federal ones). However, new regional norms were adopted in other regions such as in Saint Petersburg[21]. After the changing of the Implementing Partner and BEENWR Project Team, consultations were held at federal and regional levels, which confirmed that the EE construction norms should be adopted only at federal level. Therefore, the BEENWR Project has stopped activities under this Output (and Output 1.4 as well), as mentioned above, submitted the already developed documents for Vologda Oblast to the National Housing Fund and the Ministry of Construction, Housing

[21] Sourced from Recommendations for Updated Project Strategy

and Utilities, and concentrated on the development of federal level legislation and regulatory framework instead in cooperation with the Ministry. As a result, the Long-term Plan on Changing the Norms of Energy Consumption for All Types of Buildings was adopted in 2016. According to PIR 2016, approval of norms was expected in late 2016 but the norms haven't been adopted yet.

It must be noted that the BEENWR Project did not work on federal legislation prior to 2015. For instance, a new Building Code was adopted in 2012 with more stringent thermal insulation requirements to go into force in 2015, and the Project didn't take a part in its development. Moreover, none of the reports (PIRs, technical reports) includes any provisions on the new Building Code.

In response to the request of the Ministry of Construction and Housing (2015), the BEENWR Project has developed a model for economic assessment of the efficiency of EE measures in newly constructed and renovated buildings.

Achievements

- Conducted analysis of energy consumption in the Russian Federation (by entities) -
- Analysis of energy saving potential in the Russian Federation (by subjects)
- Analysis of the current state of the building stock in the Russian Federation (including residential buildings, apartment buildings) in terms of energy efficiency
- Analysis of the legislation of the Russian Federation and the subjects of the Russian Federation in the field of energy conservation
- Analysis of existing incentives/mechanisms aimed at attraction of non-budgetary investments (including loan financing) for the implementation of EE projects
- Recommendations for attracting investments for the implementation of EE measures (projects) in buildings (construction, renovation) by entities financed from the budgets (federal, regional, municipal) and at the expense of owners

These achievements were welcomed by the Ministry of Construction, Housing and Utilities of the Russian Federation. Nevertheless, it must be noted that they are not fully relevant and adequate to the targets

The greatest progress has been observed in implementation of activities aimed at adoption and operationalization of energy management and information system (EMIS). The introduction of EMIS in Arkhangelsk oblast was included in the initial project design as an Output 3.3. The BEENWR Project was carrying out studies and developing software in 2012-2013 but after two years of the BEENWR Project implementation, works were not completed, and as stated in Chapter 3.2.1 above, the PSC took decision to opt another system, namely the EMIS developed by the UNDP/GEF project in Croatia. The following results were achieved in this direction:

- Installation and deployment of the EMIS system (a server with software) in Pskov oblast (at Pskov Communal Systems):
    - Development of a list of public buildings of the Pskov oblast (485 buildings).
    - Primary technical inventory of buildings
    - The basic energy profiles of 28 buildings: the required (standardized) specific energy consumptions calculated, the analysis of the obtained data on consumption of fuel and energy resources
    - Proposals for updating EMIS in relation to the conditions of Russia
    - Detailed
    - Detailed information on demo buildings entered
    - Training conducted

EMIS allows the municipal administrations to meet the following targets:

- Comprehensive accounting and monitoring of consumed energy resources; scheduling of individual consumption data and control of buildings engineering systems
- Automation of monitoring process for implementation of regional and municipal energy efficiency programs
- Automation of creation and processing of housing facilities energy passports; savings of all types of energy
- Identification of excessive energy losses and prevention of accidents
- Monitoring compliance with the quality parameters
- Development of investment programs for energy supply organizations

Very important co-benefit of EMIS is that for the functioning the system, the positions of regional energy managers, first ones in Russian Federation, were introduced in Pskov and Vologda oblasts. The BEENWR Project has provided corresponding financial resources and capacity building activities. Both appointed regional energy managers fully demonstrated benefits due to the EMIS use and the Administrations of both oblasts took decisions to keep these positions within the Regional Centres for Energy savings and Energy efficiency (RCEE), after the completion of the BEENWR Project and provide necessary resources for EMIS operation.

In principle, the achievement of the Outcome 1 could be rated as Moderately Satisfactory, because the targets were achieved only for one Output out of four in total. However, considering that further application of EMIS became a key focus of the BEENWR Project exit strategy and that the GHG emission direct reductions were achieved greatly due to the EMIS, it is the TE Team opinion that the "weight" of this Output is greater than of other Outputs and the rating for the whole Outcome can be calculated as the "weighted average".

Based on the abovementioned the achievement of the Outcome 1 is rated as Moderately Satisfactory (MS).

Highly Satisfactory (HS)	Satisfactory (S)	Moderately Satisfactory (MS)	Moderately Unsatisfactory (MU)	Unsatisfactory (U)	Highly Unsatisfactory (HU)
		✓			

Outcome 2: Improved local capacities to leverage and manage investments into EE

The BEENWR Project successfully has implemented activities under the Component 2 and expected Outcome 2 has been achieved. First of all, it must be noted that after the revision of LogFrame, the Outcome 2 became more clear and focused, compared with the original one. The revised Component 2 consists of only one output with targets, which are easy to monitor.

The successful implementation of activities under the Component 2 was greatly conditioned by the fact that CTA on educational component was engaged in the implementation from the very early stages.

The following has been achieved:

- Creation and implementation of the system of continuous education in the field of EE
    - Implementation of the module, for the elementary school program on electricity saving. For pupils of primary grades 3000 copies of workbook "How to save electricity in the house" as well as a manual for the teacher was published. Published 3,500

copies of workbook "Sustainable energy use" (grades 5-9), methodical materials for project activities (grade 10)
    - Introduction of the optional module on the topic of industrial and household energy efficiency for secondary schools and institutions of secondary vocational education
    - A set of manuals "Fundamentals of energy saving and energy efficiency" for secondary vocational education and higher education (bachelor's degree).
    - The complex of work programs "Energy management" in the direction "Management" (23 programs) was developed

- Creation of the scientific-educational energy management laboratory at the Educational and Scientific Center for Energy Innovation of the Nordic (Arctic) Federal Lomonosow University (NARFU)

- Effective work of the Interregional Center for Vocational Training in Energy Saving (established at NARFU) and its Regional branches:
    - Vologda - based in Vologda State University
    - Pskov – based in Pskov State University
    - St. Petersburg – based in St. Petersburg State University of Industrial Technologies and Design

  The Council of the Interregional Center for Vocational Training and Retraining of Personnel on Energy Conservation from the representatives of universities is working. 4 meetings were held. Representatives of the center participated in the development of training programs. Training started under the distance learning system.

- Creation of a system of distance learning and dissemination of knowledge on EE
    - Development of the software for the online educational portal and its web design
    - Development of 13 training modules, 11 modular training programs and 9 training programs for various target groups with their teaching and methodological materials
    - Training on the basis of the Interregional Center for Vocational Training and Retraining of Personnel for Energy Saving in accordance with the developed programs. Approximately 800 people, specialists and the population are being trained.
    - Equipping for distance learning of the universities included in the Interregional Center for Vocational Training and Retraining of Personnel for Energy Saving

- Ensuring the Interregional exchange of experience and best practices
    - Organization of energy saving holidays for primary school students in Pskov, Arkhangelsk, Vologda
    - Organization (on the basis of the secondary school No. 11 in Pskov) of All-Russian Seminar for Primary School Teachers "Teaching primary school students energy saving”
    - Participation in the All-Russian festival "Together brighter" in the cities of Arkhangelsk, Pskov, Vologda, St. Petersburg
    - Conducting the International competition for the best project in the field of energy saving and energy efficiency among postgraduate students and students of higher education organizations of the Russian Federation, the CIS countries and EU countries

Based on the abovementioned the achievement of the Outcome 2 is rated as Satisfactory (S).

Highly Satisfactory (HS)	Satisfactory (S)	Moderately Satisfactory (MS)	Moderately Unsatisfactory (MU)	Unsatisfactory (U)	Highly Unsatisfactory (HU)
	✓				

Outcome 3: Reduction of GHG emissions demonstrated: 45-76% reduction in energy consumption in construction and maintenance sectors; 10-20% reduction in energy losses in energy networks

Achievement of this Outcome was one of the main challenges of the BEENWR Project. In total 11 projects demonstrating EE design and technologies were planned in the ProDoc including construction of 4 cottages and 1 residential house in Vologda and renovation of 6 residential buildings in Arkhangelsk. Unfortunately, none of them have been implemented despite the significant resources allocated (especially in Arkhangelsk) before the adaptive management applied and new demonstration projects were chosen.

Before the MTR the detailed design documents of demo buildings in Vologda municipality had been finalized and reviewed by an international expert. However, it appeared that despite the signing of an agreement with Vologda Oblast Administration on construction of three apartment buildings with total footage of 21,500 m^2, the Administration was not able to finance and construct the buildings by covering their baseline costs. To cope with the situation, the Project Team "considered an option to abandon the previous site and design and restart the work by a tender requesting offers from private construction companies for the integration of specific EE measures and technologies into the construction and thereby avoid the risk of investing more resources into the design of a building that might never be constructed"[22]. Detailed design documents for renovation of 6 demo buildings in Arkhangelsk also were finalized before the MTR. However, no practical steps were undertaken to secure financing. Therefore, based on the recommendations of MTR and "Recommendations for Updated Project Strategy" the targets for Outcome 3 were revised in the following way:

- Target for Output 3.1: At least one EE demonstration building constructed and its performance monitored for at least one year showing 10-30%[23] reduction of heat demand compared to a similar building constructed in accordance with current (2014-2015) construction norms in force
- Target for Output 3.2: At least 579 buildings can present an energy performance certificate (energy passport); At least six buildings have implemented agreed EE retrofit measures financed by other than GEF project resources and showing energy savings of at least 40% compared to the situation before the investments
- Target for Output 3.3: At least 1 municipality in the Arkhangelsk region has taken into use a fully functional EMIS, including annual data on the energy performance of all public buildings, all private buildings, connected to the municipal DH network and all public utilities

Construction of demo buildings

A) New construction

Initially, due to the technical constraints (?) the construction site for the implementation of a demo-project in Vologda was changed. The designs were revised and supplemented with recommendations of the international experts. The designs envisaged 50% reduction of energy consumption and 15% decrease in network losses. However, because the financing of those demo projects wasn't secured, the BEENWR Project was looking for other options.

Since 2013, the Russian Federation is implementing a Resettlement Program from obsolete and dilapidated housing. The program is financed by the State Corporative Fund for the Reform of Housing

[22] Recommendations for Updated Project Strategy

[23] The energy savings of 45-76% set as an original target in the ProDoc was replaced with 10-30% a more realistic in the country context

and Communal Services as well as the regional budgetary funds. Subject to the allocated financing, as a rule, a set of mandatory energy-saving measures is limited to the minimum requirements for thermal protection.

About 40 buildings, included in the Resettlement Program, were pre-selected in Pskov, Arkhangelsk, and Vologda Oblasts. One of the main criteria for selection was the completion of construction works latest in early 2016 in order the perform at least, one-year monitoring on energy performance and GHG reductions during 2016-2017. In the end, two buildings, presented on Figure 1, were selected for the implementation in Pskov and Novgorod Oblasts. Cooperation Agreement with the authorized representatives of those oblasts were signed in 2015.

The EE measures, additional to those ones involved in the baseline design, included:

- Additional insulation of facades, attic floor; insulation of the basement
- Replacement of windows with more efficient ones
- Installation of an automated Individual Thermal Points (ITP) with weather-adjusted control
- Installation of balancing valves on the risers of the heating system
- Installation of radiator meters on the heating devices with the transmission of the radio signal to the network node and the house concentrator
- Installation of heat regulators on radiators
- Installation in places of general use of energy-saving LED lamps with optical and acoustic sensors

A. 5, Mebelnaja str., Porkhov, Pskov oblast

B. 14 B, Mira str., Parfino, Novgorod oblast

Figure 1: Newly constricted demo residential buildings

International consulting company AF Consult has estimated the energy savings in the implemented demo buildings.

Demo building in Parfino (total costs of EE measures 12,520,000 RUB or about USD 220,000; payback period: 24 years): the following savings were achieved, compared with the baseline (baseline data were obtained through the monitoring of similar building, but without additional EE measures, constructed very close to the demo building):

- Due to the installation of energy-saving windows - 29%
- Due to the installation of external walls - 58%
- Due to the insulation of attic floors - 22%

- Due to installation and connection of the heating system to the block ITP - 4.57%
- Due to the installation of thermostats on heating appliances - 4%
- Due to installation of supply and exhaust ventilation devices with utilization (recovery) of exhaust air heat - 18.76%

Demo building in Porkhov (total costs of EE measures 11,980,000 RUB or about USD 210,000; payback period: 22 years): the following savings were achieved, compared with the baseline (standard heat consumption for residential buildings in Porkhov, Pskov oblast were used as the baseline data):

- Due to the installation of energy-saving windows – 38.4%
- Due to the installation of external walls - 41%
- Due to the insulation of attic floors – 26.6%
- Due to installation and connection of the heating system to the block ITP - 4.65%
- Due to the installation of thermostats on heating appliances - 4%
- Due to installation of supply and exhaust ventilation devices with utilization (recovery) of exhaust air heat – 19.7%

Overall heat energy saving in new residential buildings equals to 46%. Thus, the target was achieved.

B) Renovation

Similarly to the new constructions, renovation demo sites also were changed for the same reason of non-financing.

At the first stage, based on the assessment of availability of financing, the list of potential demo projects in Arkhangelsk oblast (ProDoc considered implementation of demo retrofits only in Arkhangelsk oblast) has been limited by municipal buildings. Then potential demo renovation projects were identified also in other oblasts. The feasibility studies were carried out for four municipal objects (one in Arkhangelsk and three in Pskov oblasts) were short-listed for demo renovation (EE retrofit) after detailed screening. Later the demo projects in Arkhangelsk oblast became unfeasible to implement (according to PIR 2017 the Arkhangelsk Oblast could not guarantee the financing of heat insulation of building sides that was the most expensive part of the retrofit design). Finally, two demo retrofits were implemented in the kindergarten "Raduga" in Ostrov town of Pskov Oblast and Vologda Health Clinic No. 3; they are presented on Figure 2. The selected buildings were connected to the Energy Management Information Systems for future analysis of energy consumption.

In short, the BEENWR Project couldn’t succeed with the demo projects in Arkhangelsk, main pilot oblast for renovations.

A. Kindergarten “Raduga”, Ostrov, Pskov oblast

B. Vologda health clinic No. 3

Figure 2: Renovated demo buildings

International consulting company AF Consult has estimated the energy savings in the implemented demo buildings.

Kindergarten Raduga (total costs of EE measures 8,478,233 RUB or about USD 150,000; payback period: 8 years): the following additional EE measures were implemented:

- Replacement of wooden windows with EE double-glazed windows
- Installing supply valves
- Warming of extensions to the main building
- Restoring ITP
- Insulation of the main building facades
- Insulation of the roofing of extensions
- Insulation of the attic floor of the main building
- Insulation of the basement of the building
- Installation of EE lighting devices

Healt clinic No. 3 (total costs of EE measures 21,860,950 RUB or about USD 380,000; payback period: 13 years): the following additional EE measures were implemented:

- Replacement of wooden windows with EE double-glazed windows
- Replacement of doors
- Restoring ITP
- Insulation of facades
- Installation of EE lighting devices

Energy saving in kindergarten Raduga equals to 29%; corresponding figure is not included in the report prepared by AF Consult.

Energy passports

- Around 600 energy audits were conducted by Archangelsk Regional Center for Energy Efficiency in cooperation with project experts
- A model of energy certification for residential and public houses in Arkhangelsk has been developed

- Technical inventory of about 860 public and municipal buildings have been implemented in Pskov Oblast

Target partially achieved, because system of energy passports was not introduced (energy audits and technical inventories were conducted instead)

EMIS in Arkhangelsk oblast

As mentioned above, the BEENWR Project provided TA for development of EMIS in Arkhangelsk Oblast. The works were not completed by 2014 and the PSC took decision on introducing of "Croatian" EMIS. However, it was introduced in Pskov and Vologda oblasts but not in Arkhangelsk. Operation of EMIS developed for Arkhangelsk were not monitored and evaluated by the BEENWR Project. Therefore, formally the target was not achieved. On the other hand, "Croatian" EMIS, adapted to the Russian conditions, is successfully operating in Pskov and Vologda oblasts.

Based on the above-mentioned the achievement of the Outcome 3 is rated as Moderately Satisfactory (MS).

Highly Satisfactory (HS)	Satisfactory (S)	Moderately Satisfactory (MS)	Moderately Unsatisfactory (MU)	Unsatisfactory (U)	Highly Unsatisfactory (HU)
		✓			

3.3.2 Relevance (*)

Relevance of the problem addressed by the BEENWR Project is already demonstrated above in introduction to Chapter 2 and Chapter 3.1. During the TE mission the Consultants obtained evidence that achieved results are also relevant to the priorities of both, the Government of Russian Federation and UNDP.

Interviewed stakeholders underlined that the BEENWR Project was highly relevant to the country. In fact, one of the changes attributed to the BEENWR Project was the treatment of energy efficiency more broadly as a "hot topic" at the highest levels of government. Achieved results, especially improvements in energy management, are fully relevant to the country's climate change strategy priorities.

The project has also been highly relevant to UNDP activities in Russia.

Based on the abovementioned the Relevance is rated as Relevant (R).

Relevant (R)	Not Relevant (NR)
✓	

3.3.3 Effectiveness & Efficiency (*)

Effectiveness

The BEENWR Project has reached its overall Objective to reduce direct GHG emissions through the implementation of demo projects and EMIS by 50%. It has contributed to the creation of necessary framework: elaborated recommendations for legal and regulatory improvements towards the EE in buildings. In parallel, necessary local capacity has been created and relevant tools developed. The BEENWR Project also created the prerequisites for reducing of energy consumption and thus GHG

emissions, beyond the implementation period. BEENWR Project has implemented activities, and first of all, put in operation EMIS system developed by the UNDP/GEF project in Croatia, not planned in the original ProDoc but results of which greatly contributed to the scaling-up of the application of EE practices in the housing in a sustainable way. BEENWR Project Objective and Outcomes have been achieved. The most of established targets have been achieved with some shortages.

Based on the above mentioned the Effectiveness is rated as Moderately Satisfactory (MS).

Highly Satisfactory (HS)	Satisfactory (S)	Moderately Satisfactory (MS)	Moderately Unsatisfactory (MU)	Unsatisfactory (U)	Highly Unsatisfactory (HU)
		✓			

Efficiency

The BEENWR Project leveraged necessary financial resources and support (from BEENWR Project Partners) for implementation of planned activities. From one hand, the efficiency of the financial management of the BEENWR Project was evidenced by its ability to meet all of the procurement needs not only for initially planned activities (original ProDoc) but also additional ones within the original budget (GEF resources were used as planned). The breakdown on the spending of the GEF resources are presented in Table 10.

Table 10: Breakdown on the expenditures of the GEF resources

Project Component	**Planned in Project Document**	**Actual expenditures**
Outcome 1		
2011-2014, USD; (%)	***1,276,000***	600,230 (37%)
2015-2017, USD; (%)		1,007,789 (63%)
Sub-total, USD		***1,608,020***
% of total expenditures	***22%***	***28%***
Outcome 2		
2011-2014, USD; (%)	***768,000***	284,137 (32%)
2015-2017, USD; (%)		614,608 (68%)
Sub-total, USD		***898,745***
% of total expenditures	***13%***	***15%***
Outcome 3		
2011-2014, USD; (%)	***3,274,000***	880,082 (31%)
2015-2017, USD; (%)		1,926,877 (69%)
Sub-total, USD		***2,806,959***
% of total expenditures	***56%***	***48%***
Project Management		
2011-2014, USD; (%)	***522,000***	**283,864** (54%)
2015-2017, USD; (%)		**242,413** (46%)
Sub-total, USD		***526,277***

% of total expenditures	*9%*	*9%*
Total		
2011-2014, USD; (%)		2,048,313 (35%)
2015-2017, USD; (%)		3,791,687 (65%)
Total	**5,840,000**	**5,840,000**

The analysis of Table 10 shows that in the first half of the project (2011-2014), the significant funds were inefficiently spent. For instance, USD 600,000 was spent for Outcome 1 and USD 880,000 for Outcome 3 (mostly for the preparation of technical reports, which haven't been used during the implementation of demo projects). It must be noted that in the second half of the implementation 65% of the total budget was spent with less (compared with the first half) management costs. This clearly indicates on the inefficiency during the first half of the BEENWR Project.

On the other hand, the BEENWR Project has been implemented within the initially planned budget. This shows that decision on extension of the duration of BEENWR Project without cost extension, was appropriate. However, not all the planned activities were completed (e.g. development of EMIS in Arkhangelsk oblast) despite the resources spent by the BEENWR Project.

As mentioned above, before the MTR, a number of studies, including feasibility studies, were carried out for demo projects, which later haven't been implemented due to the different reasons.

There are other examples of inefficient use of the resources too. For instance, according to PIR 2014, an expert was hired for calculation of GHG reductions. After the expert presented the methodology, the Project Team suspended the work of the expert, because it understood that GHG reductions could be achieved only after the implementation of demo projects, which were even not started by that time. At the later stages of implementation another consultant was engaged for the GHG reduction calculations. This example shows not only the inefficient use of the resources but also lack of competence of the Project Team and first of all, PM.

In overall, the level of efficiency was very low during the first period of implementation, i.e. before the changing of the Implementing Partner. No tangible legal and regulatory improvements took place, demonstration projects were not realized and the only area where the project had some success during the first half of the implementation, was on the development and launching of educational training materials.

As mentioned above, relatively modest results (compared with ProDoc) have been achieved. However, it took even longer time due to the several reasons and the duration of BEENWR Project has been extended.

The level of efficiency was very low during the first period of implementation, i.e. before the changing of the Implementing Partner.

Based on the above mentioned the Efficiency is rated as Moderately Unsatisfactory (US).

Highly Satisfactory (HS)	Satisfactory (S)	Moderately Satisfactory (MS)	Moderately Unsatisfactory (MU)	Unsatisfactory (U)	Highly Unsatisfactory (HU)
			✓		

3.3.4 Country ownership

Country Ownership was modest during the first half of the project implementation, while was much stronger during the second half, when the Russian Energy Agency took over.

In the ProDoc a main role for the implementation was given to the Implementing Partner. Although REA was successful as an Executing Agency of the BEENWR Project, the state policy in the building sector is the responsibility of the Ministry of Construction, Housing and Utilities. Therefore, the success of the BEENWR Project was depending on support from this ministry.

Country ownership for this BEENWR Project was largely dependent on whether or not the project concept was in line with country priorities.

Country ownership was actually confirmed by adoption of more stringent building codes (in 2012), support in obtaining permits for implementation of demo projects, etc.

3.3.5 Mainstreaming

The BEENWR Project is successfully mainstreaming other UNDP priorities. In particular:

- The BEENWR Project helped in job creation (Energy managers were appointed, EE measures were implemented by the local contractors by using local materials)
- The policy framework has been improved
- BEENWR Project delivered education and raised capacity of aspiring and practicing professionals, as well as decision makers, with regard to EE improvement in the building sector
- Impact on environment has been released (less GHG, less air pollutants due to the energy savings)
- Gender issues - while gender issues were not taken directly into account in ProDoc, BEENWR Project staffing was balanced; trainings involved representative numbers of women and men

3.3.6 Sustainability (*)

The BEENWR Project has been designed to deliver sustainable impact in North West of Russia. As stated in the UNDP-GEF guideline for TE, sustainability is generally considered to be the likelihood of continued benefits after the project ends. Consequently, the assessment of sustainability considers the risks that are likely to affect the continuation of project outcomes.

Financial risks

Question[24]: Are there financial risks that may jeopardize the sustainability of project outcomes?

Answer: There are two types of such risks. First one is related to the scale of investments in EE buildings by the State and the second one - to the lack of financial incentives in investing in EE measures.

Question: What is the likelihood of financial and economic resources not being available once GEF grant assistance ends? (This might include funding through government - in the form of direct

[24] Questions are taken from the Guidance for Conducting Terminal Evaluations of UNDP-Supported, GEF-Financed Projects

subsidies, or tax incentives, it may involve support from other donors, and also the private sector. The analysis could also point to macroeconomic factors.)?

Answer: The first risk mentioned above, is conditioned by two factors, whether the EE will remain in the future as a priority, and whether there will be available budgetary resources for construction and renovation of residential buildings. The likelihood of the first factor is high while the second one depends on overall economic situation in the country. There is a low risk that constructions and renovations will not include EE measures prescribed in the existing building codes because in the reality of Russia, the implementation of legal and regulatory requirements are, as a rule, enforced. As for the willingness of municipalities, private companies (if any), condominiums or individual residents to invest in EE measures in their apartments/houses, it will depend on financial feasibility of such measure, which will be questionable considering the paybacks of implemented demo projects.

Based on the above-mentioned the Financial Risks are low and the sustainability is rated as Moderately Likely (ML)

Likely (L)	Moderately Likely (ML)	Moderately Unlikely (MS)	Unlikely (U)
	✓		

Socio-economic risks

Question: Are there social or political risks that may threaten the sustainability of project outcomes? What is the risk for instance that the level of stakeholder ownership (including ownership by governments and other key stakeholders) will be insufficient to allow for the project outcomes/benefits to be sustained?

Answer: The social risk is identified neither by the BEENWR Project nor the Consultant. Only the political risk identified in the beginning of the BEENWR Project, was related to energy price subsidies in residential and public sectors, leading to an insufficient incentive for efficient products. This risk is not critical at present.

Question: Do the various key stakeholders see that it is in their interest that the project benefits continue to flow? Is there sufficient public/stakeholder awareness in support of the project's long-term objectives?

Answer: Certainly yes, stakeholders are interested in EE in public and residential sectors.

Based on the above-mentioned the Socio-economic Risks are negligible and the sustainability is rated as Likely (L)

Likely (L)	Moderately Likely (ML)	Moderately Unlikely (MS)	Unlikely (U)
✓			

Institutional framework and governance risks

Question: Do the legal frameworks, policies and governance structures and processes, within which the project operates, pose risks that may jeopardize sustenance of project benefits?

Answer: There are no such risks existing at present.

Question: Are requisite systems for accountability and transparency, and required technical knowhow, in place?

Answer: Certainly yes

Based on the above-mentioned the Institutional framework and governance risks are negligible and the sustainability is rated as Likely (L)

Likely (L)	Moderately Likely (ML)	Moderately Unlikely (MS)	Unlikely (U)
✓			

Environmental risks to sustainability

Question: Are there ongoing activities that may pose an environmental threat to the sustainability of project outcomes? For example, biodiversity-related gains or water quality-related gains at risk due to frequent severe storms?

Answer: No, there are no such activities.

Based on the above-mentioned the Environmental risks are negligible and the sustainability is rated as Likely (L)

Likely (L)	Moderately Likely (ML)	Moderately Unlikely (MS)	Unlikely (U)
✓			

Overall rating: All the associated risks are negligible and thus, the overall rating for Sustainability is Likely (L)

Likely (L)	Moderately Likely (ML)	Moderately Unlikely (MS)	Unlikely (U)
✓			

3.3.7 Impact

The BEENWR project has made certain advances in promoting EE in the public and residential building sectors of the North West of Russia, especially considering the starting point and the baseline scenario, in which EE was minimally reflected in national policy, investment, educational curricula, and design practice.

Some outputs of the BEENWR Project were achieved in Russia for the first time – the first regional energy managers appointed; EMIS put in operation in Pskov and Vologda oblasts. These outcomes along with created local capacity created a foundation for real changes in practice in the country and the most important change is the increased national-level and agency-level ownership of energy efficiency as an issue. The BEENWR Project managed to change people's thinking and perception of energy savings.

4. Conclusions, Recommendations & Lessons

Conclusions

Overall, this BEENWR Project has had a substantial, sustainable effect on improvement of energy efficiency in residential buildings sector in North West of Russia. Through the implementation of demo projects, it demonstrated the best practices of design, energy performance and energy management in new/renovated residential and public buildings; and through the capacity building activities and outreach program created a local capacity and capabilities of local dedicated institutions and professionals for replication and scaling up of these activities in the sustainable way. In addition to progress against the targets established in the LogFrame, the most significant changes due to the BEENWR Project activities, include putting of EE and energy management in high political agenda and creation of tools and capacities for the development of Oblast-level strategies and action plans.

The BEENWR Project has demonstrated adaptive management in a very complex operating environment. The project t implementation can be divided in two halves – a first half, which really struggled and a second half, which showed considerable improvement. Indeed, after the MTR, the BEENWR Project team has effectively addressed and managed identified issues and risks. Here it must be also noted that selection of the Office of Plenipotentiary Representative of the President of the RF in the North West Okrug as the Executing Partner seems to be not appropriate when the Russian Energy Agency (established in 2010) could have been selected instead.

The second half of the project got better because starting in late 2014 with the PSC meeting, which agreed to have a major focus on EMIS the project, under the leadership of Russian Energy Agency, did an excellent job in undertaking adaptive management to focus on the introduction of EMIS – energy management information system, as a main pillar of the project, expanding from what was in the project document (with simple energy management software just for Pskov) to EMIS in Pskov and Vologda and a plan for scale up and roll out across the entire country. The revised project strategy changed the focus on developing new regional construction norms, introducing new demo projects that highlighted state of the art international best practice and, introducing EMIS – an energy management information system.

BEENWR Project used the extension of its duration to finalize all the activities, implement comprehensive monitoring and evaluation of the results and thereby achieve the expected Outcomes.

The BEENWR Project has delivered most of planned results, although not all of them on time.

In summary, the project did a really good job on training and awareness and with regards to the introduction of EMIS into Russia for further replication and scaling up. These can be seen, as the two major achievements of the project which struggled during the first half and got much better in the second half.

In conclusion, this BEENWR Project which rated as MU or marginally unsatisfactory at the time of mid-term review in January 2014, has been improved to MS or marginally satisfactory by the end of the project at the end of 2017.

The overall rating of the project is Moderately Satisfactory.

4.1 Corrective actions for the design, implementation, monitoring and evaluation of the project

Design

No Corrective Action Request (CAR) is raised

Monitoring and Evaluation

CAR 1: Develop a Final Project Report with lessons learned

One of the target to be achieved under the Outcome 3 is that "Best practices and lessons learned (should be) shared across the NW federal region". Neither the final report nor lessons learned was provided to the TE team. Therefore, the project manager is requested to develop, prepare and release a final report including lessons learned study, which outlines the main lessons learned from this project.

4.2 Actions to follow up or reinforce initial benefits from the project

Recommendation 1: To update estimation of GHG reductions due to the application of the EMIS in Pskov and Vologda oblasts.

In November 2017, international company AF Consult revised GHG emissions reduction calculations, and presented updated figures to the TE Team. However, new data on energy consumptions in buildings, which might be entered after November 2017, would lead to additional GHG reductions, because it is obvious that as many buildings are entered as higher reduction is achieved due to the management of the energy consumption in the buildings.

4.3 Proposals for future directions underlining main objectives

Recommendation 2: To launch the process of certification of EMIS in accordance with the existing procedures and to launch EMIS for the entire Russian Federation, coordinated by the Russian Energy Agency, including securing funds from the Federal Budget for EMIS scale up and roll out.

One of the possibilities for scaling up EMIS could be a development of a proposal for the UNDP Russia Trust Fund to implement and roll out EMIS in countries in Central Asia and in Belarus.

4.4 Best and worst practices in addressing issues relating to relevance, performance and success

It was expected that the implementation of demo projects will take long (early warnings were presented in the first PIRs). Nevertheless, it took even longer. Best and worst practices are directly related to the level of communication with the decision maker Partners to resolve timely the issues. It has been learned that continuous communication on a regular basis is necessary to keep key partners engaged.

Other practices include:

- Best practices:
    - Implementation and scale up of EMIS
    - Hiring of regional energy managers

    - Training materials
- Worst practices:
    - Not working at Federal Level on groundbreaking legislation
    - Not working with financial institutions or leveraging non-grant financing or private sector investment

In a view of the BEENWR Project Management, worst practice was related to multiple changes in the Project team as well as of focal points with the local administrations that resulted in number of “re-starts”

5. Annexes

Annex 1: ToR

TERMINAL EVALUATION TERMS OF REFERENCE

International Consultant for the Evaluation of UNDP-GEF Project "Building Energy Efficiency in the North West of Russia"

Reference:	PIMS 4131
Country:	Russia
Type of Contract **Description of the Assignment:**	Individual Contract (IC) International Consultant to conduct the Terminal Evaluation
Project:	Building Energy Efficiency in the North West of Russia
Period of Assignment/Services:	25 working days over the period October - December 2017
Duty Station:	Home Based (15 working days) with one mission (10 working days) Russian Federation (Moscow, Saint Petersburg, Pskov, Archangelsk Vologda, Novgorod oblasts)

Introduction

Building energy efficiency is a priority direction in the development of construction sector. Market transformatior towards energy efficient products and technologies was restricted by low internal energy prices: while domestic construction costs in Russia were only 20-30% lower than those in international markets, domestic energy costs were 6-7 times lower. However, as Russia targeted integration into international markets, internal energy costs began to increase rapidly. The communal housing sector was among the first to recognize the changes, as it consumes up to 20% of electric energy and 45% of heat produced in Russia. Currently, price trends constitute direct economic incentives for energy efficiency investments in the building sector.

The project strategy is to reduce existing institutional, management, information, technological, investment, and knowledge barriers that hamper wide penetration of energy efficient technologies and practices in the construction and building maintenance sectors. GEF financing will not be invested directly into renovation or energy efficiency improvements in existing/old buildings. However, GEF funds will be used to leverage additional private sector investment in EE buildings. GEF funds will also be utilized to build local capacities, regulations and information for effective decision-making and management systems.

The implementation of the full-scale project «Building Energy Efficiency in the North West of Russia» supported by UNDP and Russian Energy Agency» (REA) of the Ministry of Energy of the Russian Federation with GEF financing started in 2010. Initially the project had been planned for 5 years but later received a no-cost extension for two more years. The project closure is expected by December 2017.

Objective and scope

This terminal evaluation will be conducted according to the guidance, rules and procedures established by UNDP and GEF as reflected in the UNDP evaluation guidance for GEF financed projects. The objectives of the evaluation are to assess the achievement of project results, and to draw lessons that can both improve the sustainability of benefits from this project, and aid in the overall enhancement of UNDP programming.

Mid-term review

The project mid-term evaluation (MTE) took place in late 2013 (final report submitted in early 2014) and its main concerns regarding the achievement of project's outcomes. The final evaluation should assess the extent to which the recommendations of the mid-term review have been taken into account by the project.

Final review – terminal evaluation
The terminal evaluation will explore in detail five major criteria:

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

The project was designed to build local capacities for and demonstrate local solutions to improved energy efficiency in buildings in the three regions of the North West Russia: Pskov, Vologda, Arkhangelsk and Novgorod oblasts.
The project was designed with three outcomes, as follows:

- Enabling environment and enforcement capacities for improved energy efficiency at the provincial and local levels. By creating effective enabling environment and institutional capacities at the local and regional levels, the project will help create incentives for energy efficient investments and the reduction of end-use energy consumption;
- Capacity building and know-how. It will establish a means of disseminating new technologies in design and maintenance of energy efficient buildings and housing networks. Project will: develop recommendations and programmes for professional education and training on energy efficiency in construction and building maintenance; integrate energy efficiency units into the curricula of provincial universities and technical schools; and establish an interregional network of vocational training centers;
- Demonstration of local energy-efficient solutions and management models. The project will support initiatives to demonstrate energy saving potential of proposed technical and management solutions and provide models for replication.

Evaluation approach and method

An overall approach and method for conducting project terminal evaluations of UNDP supported GEF financed projects has developed over time. The evaluator is expected to frame the evaluation effort using the criteria of relevance, effectiveness, efficiency, sustainability, and impact, as defined and explained in the UNDP guidance for conducting terminal evaluations of UNDP-supported, GEF-financed projects. A set of questions covering each of these criteria have been drafted and the evaluator is expected to amend, complete and submit this matrix as part of the evaluation inception report, and shall include it as an annex to the final report.
The evaluation must provide evidence-based information that is credible, reliable and useful. The evaluator is expected to follow a participatory and consultative approach ensuring close engagement with government counterparts, in particular the GEF operational focal point, UNDP Project Support Office in Russia, project team, UNDP GEF Technical Adviser based in the region and key stakeholders. The evaluator is expected to conduct a field mission to Pskov, Vologda, Arkhangelsk and Novgorod oblasts, including the following project sites: 1) Energy efficient repairs in the main building and outbuildings of MBDOU kindergarten «Raduga» in municipality «Ostrovsky district», Pskov oblast; 2) Implementation of energy management system of public buildings in Pskov oblast, AO «Pskovskiye Kommunalnye Sistemy», Pskov; 3) Energy efficient new construction of apartment house in Porkhov, Pskov oblast; 4) Energy efficient new construction of apartment house in Parfino, Novgorod oblast;

5) Energy efficient repairs in the building for outpatient care of the Vologda city polyclinic #3, Vologda; 6) Re-equipment of Energy management laboratory of the Northern (Arctic) Federal University, Arkhangelsk. Interviews will be held with the following organizations at a minimum: UNDP Istanbul Regional Hub; UNDP-Russia Projects Support Office; Ministry of Construction, Housing and Utilities of the Russian Federation; Regional and Municipal Administrations of the Arkhangelsk, Pskov, Vologda and Novgorod Oblasts; Federal State Organization «Russian Energy Agency» (REA) by the Ministry of Energy of the Russian Federation; Russian Association of Energy Service Companies RAESCO; International Sustainable Energy Development Centre under the auspices of UNESCO; Northern (Arctic) Federal University; Saint-Petersburg State University of plant polymers; International Finance Corporation (IFC), World Bank Group; UNDP supported projects of improving energy efficiency in buildings in Armenia, Kazakhstan, Turkmenistan and other UNDP GEF EE buildings project, as appropriate. In addition, the evaluator will speak to the former project managers and staff, international consultants hired previously by the project, the former National Project Director, the mid-term evaluator and to all sub-contractors hired by the project (both national and international).

The evaluator will review all relevant sources of information, such as the project document, project reports – including annual APR/PIR, project budget revisions, mid-term review, progress reports, GEF focal area tracking tools, project files, national strategic and legal documents, and any other materials that the evaluator considers useful for this evidence-based assessment.

Evaluation criteria and ratings

An assessment of project performance will be carried out against expectations set out in the Project Logical Framework/Results Framework, which provides performance and impact indicators for project implementation along with their corresponding means of verification. The evaluation will at a minimum cover the criteria of relevance, effectiveness, efficiency, sustainability and impact**.** Ratings must be provided on the following performance criteria:

- Monitoring and Evaluation (M&E design at entry, M&E plan implementation, overall quality of M&E);
- IA&EA Execution (quality of UNDP implementation, quality of execution - executing agency, overall quality of implementation and execution);
- Assessment of Outcomes (relevance, effectiveness, efficiency, overall project outcome rating);
- Sustainability (financial resources, socio-political, institutional framework and governance, environmental, overall likelihood of sustainability).

Project finance/co-finance

The evaluation will assess the key financial aspects of the project, including the extent of co-financing planned and realized. Project cost and funding data will be required, including annual expenditures. Variances between planned and actual expenditures will need to be assessed and explained. Results from recent financial audits, as available, should be taken into consideration. The evaluator(s) will receive assistance from the Project Support Office and the project team to obtain financial data in order to complete the co-financing table, which will be included in the terminal evaluation report.

Mainstreaming

UNDP supported GEF financed projects are key components in UNDP PSO programming, as well as regional and global programmes. The evaluation will assess the extent to which the project was successfully mainstreamed with other UNDP priorities, including poverty alleviation, improved governance, the prevention and recovery from natural disasters, and gender.

Impact

The evaluator will assess the extent to which the project is achieving impacts or progressing towards the achievement of impacts. Key findings that should be brought out in the evaluations include whether the project has demonstrated: verifiable improvements in ecological status, verifiable reductions in stress on ecological systems, and/or demonstrated progress towards these impact achievements.

Conclusions, recommendations & lessons

The evaluation report must include a chapter providing a set of conclusions, recommendations and lessons. Conclusions should build on findings and be based on evidence. Recommendations should be prioritized, specific, relevant, and targeted, with suggested implementers. Lessons should have wider applicability to other initiatives across the region, the area of intervention, and for the future.

Implementation arrangements

The principal responsibility for managing this evaluation resides with the UNDP Project Support Office in Russia. The UNDP PSO will contract the evaluator and ensure the timely provision of the local travel arrangements. The project team will be responsible for liaising with the evaluation team to set up stakeholder interviews, arrange field visits, etc.

Evaluation timeframe

The total duration of the evaluation will be 25 working days during October – December 2017.
Field mission

The international evaluator is expected to conduct a field mission of at least 10 working days to project pilot sites jointly identified with the project manager. The 10 working days mission will include 3 working days based in Moscow, 1 working day in Saint Petersburg, 1 working day in Archangelsk, 1 working day in Vologda, 3 working days in Pskov oblast (Pskov, Ostrov, Porkhov) and 1 working day in Novgorod oblast (Parfino). The national consultant will accompany the international evaluator to all meetings in Moscow and other cities.

The evaluation timetable is planned as follows:

- Preparation – 3 working days;
- Evaluation Mission – 10 working days in October 2017;
- Draft Evaluation Report – 10 working days in November 2017;
- Final Report - 2 working days, completed early December 2017.

Evaluation deliverables

The evaluation team is expected to deliver the following:

- Inception report – the evaluator provides clarifications on timing and method no later than 2 weeks before the evaluation mission and submits the report to the UNDP PSO;
- Presentation - initial findings at the end of the evaluation mission are presented to the UNDP PSO, UNDP Regional Technical Advisor and the project manager;
- Draft final report - full report with annexes is expected within 2 weeks from the evaluation mission and provided to UNDP PSO, Regional Technical Advisor and project manager;
- Final report - revised report is provided within 1 week from receiving UNDP PSO comments on the draft. When submitting the final evaluation report, the evaluator is required also to provide an 'audit trail', detailing how all received comments have (and have not) been addressed in the final evaluation report.

Team composition

The evaluation team will be composed of 1 international evaluator and 1 national evaluation support consultant. An international evaluator will be designated as the team leader and will be responsible for finalizing the report. The evaluator should not have participated in the project preparation and/or implementation and should not have conflict of interest with project related activities.

Evaluation ethics

Evaluation consultants will be held to the highest ethical standards and are required to sign a Code of Conduct upon acceptance of the assignment. UNDP evaluations are conducted in accordance with the principles outlined in the UNEG 'Ethical Guidelines for Evaluations'.

Payment modalities and specifications

10% Following submission of a detailed workplan/inception report prior to the field mission;
40% Following submission and approval of the 1st draft terminal evaluation report;
50% Following submission and approval (UNDP PSO and RTA) of the final terminal evaluation report.

Qualification requirements:

- A Master's degree in environmental sciences, energy efficiency, climate change mitigation or other closely related field; PhD will be considered as an advantage;
- Minimum 10 years of relevant professional experience in energy efficiency and housing infrastructure, design and development of energy projects;
- Experience in results-based monitoring and evaluation methodologies;
- Knowledge of UNDP and of GEF evaluation procedures is an advantage;
- Work experience in Europe & CIS region and/or Russian Federation is an advantage;
- Excellent English; Russian language will be considered as an advantage.

Competencies:

Corporate competencies:

- Demonstrates integrity by modeling the UN's values and ethical standards;
- Promotes the vision, mission, and strategic goals of UNDP;
- Displays cultural, gender, religion, race, nationality and age sensitivity and adaptability.

Functional competencies:

- Strong interpersonal skills, communication skills and ability to work in a team;
- Ability to plan and organize work, efficiency in meeting commitments, observing deadlines and achieving results;
- Openness to change and ability to receive/integrate feedback;
- Ability to work under pressure and stressful situations;
- Strong analytical, research, reporting and writing abilities.

Evaluation procedure

Individual consultants will be evaluated based on a cumulative analysis taking into consideration the combination of the applicants' qualifications and financial proposal. The award of the contract shall be made to the individual consultant whose offer has been evaluated and determined as:

- Responsive, compliant, acceptable;
- Having received the highest score out of a pre-determined set of technical and financial criteria specific to the solicitation.

Technical criteria - 70% of total evaluation (max 70 points):

- A Master's degree in environmental sciences, energy efficiency, climate change mitigation or other closely related field; PhD will be considered as an advantage (max 5 points);

- Minimum 10 years of relevant professional experience in energy efficiency and housing infrastructure, design and development of energy projects (max 5 points);
- Experience in results-based monitoring and evaluation methodologies (max 10 points);
- Knowledge of UNDP and of GEF evaluation procedures is an advantage (max 15 points);
- Work experience in Europe & CIS region and/or Russian Federation is an advantage (max 10 points);
- Excellent English; Russian language will be considered as an advantage (max 5 points);
- Interview (max 20 points).

Financial criteria - 30% of total evaluation (max 30 points). Only candidates passing the 70% threshold for the technical proposal will be considered for the financial evaluation.

The candidate with the highest score from technical criteria + financial criteria will be selected with the maximum score possible being 100 points.

Application process

Recommended presentation of offer:

- Completed letter of confirmation of interest and availability. Please paste the letter into the "Resume and Motivation" section of the electronic application;

- CV or a UNDP Personal History form (P11) available at http://www.eurasia.undp.org/content/dam/rbec/docs/P11_modified_for_SCs_and_ICs.doc , indicating all past experience, as well as the contact details (email and telephone number) of the candidate and three professional references;

- Financial proposal that indicates the all-inclusive fixed total contract price, supported by the breakdown of costs. The breakdown should contain: professional fee for home-based work (number of working days), professional fee for work on mission (number of working days), travel costs (international travel to/from Moscow and per diems for all locations). Tickets for local travel to project sites within Russia will be arranged by the project. Per diems cannot exceed maximum UN daily allowance rates (http://icsc.un.org) and consultants are encouraged to bid lower amount to make their offers more competitive.

Please note that the professional fee is all-inclusive and shall take into account various expenses incurred by the consultant/contractor during the contract period (e.g. fee, health insurance, vaccination and any other relevant expenses related to the performance of service, etc.). All envisaged international travel costs must be included in the financial proposal.

If an applicant is employed by an organization/company/institution, and he/she expects his/her employer to charge a management fee in the process of releasing him/her to UNDP under reimbursable loan agreement (RLA), the applicant must indicate at this point, and ensure that all such costs are duly incorporated in the financial proposal submitted to UNDP.

Incomplete applications will not be considered. Please make sure you have provided all requested materials.

Payments will be made only upon confirmation of UNDP on delivering on the contract obligations in a satisfactory manner.

Individual consultants are responsible for ensuring they have vaccinations/inoculations when travelling to certain countries, as designated by the UN Medical Director. Consultants are also required to comply with the UN security directives set forth under dss.un.org

General terms and conditions as well as other related documents can be found under: http://on.undp.org/t7fJs

Qualified women and members of minorities are encouraged to apply.

Due to large number of applications we receive, we are able to inform only the successful candidates about the outcome or status of the selection process.

ANNEX A: PROJECT LOGICAL FRAMEWORK

Project Strategy	Objectively verifiable indicators
Goal	Build local capacities for and demonstrate local solutions to improved energy efficiency in buildings in three regions in North West Russia: Pskov, Vologda and Arkhangelsk Oblasts

	Indicator	Baseline	End of project Target	Sources of verification	Risks and Assumptions
Objective of the project: Build local capacities for and demonstrate local solutions to improved energy efficiency in construction and maintenance of buildings in the North West of Russia: Pskov, Vologda, and Arkhangelsk Oblasts.	CO_2 emissions from energy use in new and renovated buildings in the 3 participating oblasts.	85,000 tCO_2 emitted due to space heating in new and renovated buildings during the 5-year project period (2010-2015) 1.7 $MtCO_2$ emitted due to space heating in new and renovated buildings during their lifetime (assuming a 20-year lifetime)	Direct reductions of 48,050 tCO2e as compared to the baseline. Indirect reductions of 599,000 tCO_2 emitted due to space heating in new and renovated buildings during their lifetime (assuming a 20-year lifetime)	Calculations based on the quantitative measurements of energy use in space heating and fuel mix described above based on standard practice.	Assumption: building trends will continue as projected (conservatively) by the project. Assumption: More efficient codes prepared under the project will enter into effect and be enforced.

	Indicator	Baseline	End of project Target	Sources of verification	Risks and Assumptions
Outcome 1: **Enabling environment and strengthened enforcement capacities for improved energy efficiency at the provincial and local levels** Provincial and local policies and regulations ensuring enforcement of energy efficient building norms.	Operational oblast-level legal and regulatory framework for enforcing and monitoring building codes in Vologda oblast; effective implementation of the Pskov Oblast Energy Efficiency Programme; effective implementation of an institutional and management model for EE municipalities in the Pskov Oblast; development of municipal energy efficiency norms in Pskov Oblast	Lack of current, comprehensive program for codes enforcement with systematized, regular on-site inspections; Pskov Oblast Energy Efficiency Programme lacks regulatory framework and institutional capacity for effective operation; lack of a model for EE municipalities in Pskov oblast; absence of municipal energy efficiency norms.	Model system operating in the oblast including an on-site (inspection program) and the program shared with other oblasts; oblast-level system of results-based monitoring operating in Pskov; capacity of the EE Programme increased in at least 3 key areas as stated in the capacity development plan; and good practice disseminated in Russia and abroad; applied model of utility services provision in place and functioning for 2 municipal districts; Municipal EE norms adopted in 2 municipalities in Pskov oblast; norms disseminated to other oblasts.	*Project documentation. *Regional regulations. *Enforcement program documentation. *One-on-one interviews *Comparison with other oblast-level Energy Efficiency Programmes *Documentation from 2 municipal districts *Documentation from municipalities *Independent review	Assumption: Oblast-level, okrug-level, and municipal-level support for the project will remain strong, and legislation and supporting regulations will be accepted.

	Indicator	Baseline	End of project Target	Sources of verification	Risks and Assumptions
Outcome 2: Capacity building and know-how Improved local capacities to leverage and manage investments into energy efficiency.	Development and introduction of capacity-building and professional training modules (Vologda Oblast); development and introduction of EE-related curricula in universities and technical colleges in the three participating oblasts; fully-functioning inter-regional professional training center; access of professionals to a distance learning system for EE topics; level of exchange of best practices and lessons learned	Limited exposure to energy- efficiency-related topics at the post-secondary level; absence of programs at other levels of education Lack of specific, focused EE curriculum in educational institutions in the participating oblasts; no professional training center in the NW Federal Region focusing specifically on continuing education in energy efficiency and energy management; no training units specifically focusing on energy efficiency No means of capturing or disseminating experiences in EE programs	Modules introduced in additional schools in each category and disseminated to other oblasts; "know-how," including software, developed and distributed by VSTU; and two kits (curriculum, lecture outlines, exams, texts and workbooks) are produced and in use; branches of a university-based training center established across the NW Federal Region; 22 training units developed and in use at the inter-regional training center and in the Center for Distance Learning; Project lessons/best practices are produced and distributed to target groups and influence target group practices; replication partners are identified and a relationship with them is formalized.	• Modules. • Project documentation. • Independent review. • Educational materials and course guides for educational institutions. • Interviews. • University documentation. • Center for Distance Learning documentation. • Project materials and publications/presen-tations. • Interviews with a sample of target group members. • MOUs with replication partners.	Assumption: Students and practicing professionals will have a strong incentive to apply the techniques that they have learned through training because of reduced operating costs and because the buildings they design will have to meet with increasingly stringent energy performance regulations

	Indicator	Baseline	End of project Target	Sources of verification	Risks and Assumptions
Outcome 3: Demonstration of local energy efficient solutions and management models Reduction of GHG emissions demonstrated: 45-76% reduction in energy consumption in construction and maintenance sectors; 10-20% reduction in energy losses in energy networks.	Reduction in energy consumption in the construction and communal services (utilities) sectors of Vologda oblast. Use of energy performance certificates in the building stock in Arkhangelsk. Building renovations do not capture the full potential of cost-effective energy measures. Reliable and timely information on EE buildings available for decision-making in municipalities in Arkhangelsk Oblast.	No architectural or civil engineering approach to new, more-efficient residential developments exists in the NW federal region. Energy performance certificates are not used in the building stock in Arkhangelsk. No coordinated information available for decision-making; lack of a methodology for EE project management in the housing and communal services sector in Arkhangelsk oblast	Necessary legislation adopted and applicable permits are obtained for a model site in Vologda oblast; Construction is completed, with buildings demonstrating savings of 45-76% over the regional average for thermal performance of buildings and network losses that are lower by 10-20%. The prototype residential development is finalized and replicated. At least 579 buildings will receive audits and the corresponding energy performance certificate ("energy passport"), and specific EE measures will be undertaken in six existing buildings in response to information generated from the certification process; results disseminated. Municipal-level programs for heat supply and water delivery created; energy-efficient design office created at AOEEC, the regional energy efficiency center. Certification system introduced for public and residential buildings based on an electronic database and data management system; power consumption monitored on an ongoing basis. Energy audit program in place for public and residential	• Project documentation. • Construction permits and land titles. • Site visits. • Oblast regulatory documents. • Review of energy performance certificates. • Survey of selected buildings in Arkhangelsk. • Electronic database and data management system. • Documentation from audits and review of energy performance certificates. • Project outreach materials. • AOEEC documentation. • Independent review.	Assumption: Building-level and network-level savings will be similar to savings achieved in similar buildings in similar climatic conditions. Assumption: Municipalities will have sufficient interest and awareness in the energy efficiency programs for heat supply and water delivery.

	Indicator	Baseline	End of project Target	Sources of verification	Risks and Assumptions
			buildings when they are commissioned; inspections of public and residential buildings carried out. Best practices and lessons learned shared across the NW federal region.		

ANNEX B: LIST OF DOCUMENTS TO BE REVIEWED BY THE EVALUATOR

General documentation

- UNDP Programme and Operations Policies and Procedures
- UNDP Handbook for Monitoring and Evaluating for Results
- GEF Monitoring and Evaluation Policy
- GEF focal area strategic program objectives

Project documentation

- GEF approved project document and Request for CEO Endorsement
- Project Inception Report
- Project Mid-Term Evaluation Report
- Annual work plans
- Annual GEF Project Implementation Reports
- CDRs
- Financial audit reports
- GEF Quarterly Reports
- Project Steering Committee minutes
- Updated risk log

Other relevant documentation

- Federal Law of the Russian Federation No. 261 «About Energy Savings and Increasing Energy Efficiency and about the Entry into Force of Changes to Distinct Legislative Acts of the Russian Federation» of 11.11.2009.
- Federal Law of the Russian Federation No. 184 «About technical regulation» of 27.12.2002.
- Federal Law of the Russian Federation No. 384 «Technical regulation on safety of buildings and constructions» of 30.12.2009.
- Decree of the Russian Federation No. 275 «Priority mandatory energy performance requirements for buildings, structures and constructions, developed by the Ministry of Energy» of 07.03.2017.
- Building Code SP 50.13330.2012 «Thermal performance of the buildings » (revised edition of SNiP No. 23-02-2003).
- Building Code SP 23-101-2004 «Thermal performance design of buildings».
- Building Code SP 55.13330.2016 «Single-family houses» (revised edition of SNiP No. 31-02-2001).
- Building Code SP 54.13330.2016 «Multicompartment residential buildings» (revised edition of SNiP No. 31-01-2003).
- Building Code SP 118.13330.2012 «Public buildings and works» (revised edition of SNiP No. 31-06-2009).
- Building Code SP 44.13330.2011 «Office and social buildings» (revised edition of SNiP No. 2.09.04-87).
- Building Code SP 52.13330.2016 «Daylighting and artificial lighting» (revised edition of SNiP No. 23-05-95).
- Building Code SP 60.13330.2016 «Heating, ventilation and conditioning» (revised edition of SNiP No. 41-01-2003).
- Building Code SP 61.13330.2012 «Designing of thermal insulation of equipment and pipe lines» (revised edition of SNiP No. 41-03-2003).
- Building Code SP 131.13330.2012 «Construction climatology» (revised edition of SNiP 23-01-99).
- GOST R 56623-2015 «Non-destructive evaluation. Methods of determination of thermal resistance of enclosing structures» from 01.06.2016. Before GOST 26254-84 «Buildings and structures. Methods of determination of thermal resistance of enclosing structures».
- GOST 30494-2011 «Residential and public buildings. Microclimate parameters for indoor enclosures» from 01.01.2013.
- GOST R 54954-2012 «Conformity assessment. Ecological requirements for estate properties» from 01.03.2013.
- Russian Federation State Programme «Energy Conservation and Energy Efficiency Improvement for the Period till 2020» (approved by Government Decree No. 2446-R on 27.12.2010).
- Methodological recommendations on ranking of buildings under energy efficiency level (2016).

- Territorial budget specification 12-323-2003 Arkhangelsk Region. Acceptance and commissioning of completed construction projects. Main provisions.
- Territorial budget specification 23-348-2003 Pskov region. Energy efficiency of residential and public buildings. Standards for energy and heat.
- Territorial budget specification 23-350-2004 Vologda region. Energy efficiency of residential and public buildings. Standards for energy and heat.
- Results of surveys.
- Textbooks for specialists.
- Promotion materials.
- Press articles.

ANNEX C: EVALUATION QUESTIONS

Evaluative Criteria Questions	Indicators	Sources	Methodology
Relevance: How does the project relate to the main objectives of the GEF focal area, and to the environment and development priorities at the local, regional and national levels?			
A. How did the project support the GEF focal area and strategic priorities? Please, fill out the GEF Climate Change Mitigation Tracking Tool below.	•	•	•
B. How did the project support the energy efficiency/energy saving and climate objectives of the Russian Federation?	•	•	•
C. How did the project support the needs of relevant stakeholders and has the implementation of the project been inclusive of all relevant stakeholders?	•	•	•
D. Are there logical linkages between expected results of the project (log frame) and the project design (in terms of project components, choice of partners, structure, delivery mechanism, scope, budget, use of resources, etc.)?	•	•	•
Effectiveness: To what extent have the expected outcomes and objectives of the project been achieved?			
A. Has the project been effective in achieving its expected outcomes: • **Outcome 1:** Enabling environment and strengthened enforcement capacities for improved energy efficiency at the provincial and local levels; • **Outcome 2:** Capacity building and know-how; • **Outcome 3:** Demonstration of local energy efficient solutions and management models.	•	•	•

B. What lessons have been learned from the project regarding achievement of outcomes?	•	•	•
C. What changes could have been made (if any) to the design of the project in order to improve the achievement of the project's expected results?	•	•	•
Efficiency: Was the project implemented efficiently, in-line with international and national norms and standards?			
A. Were progress reports produced accurately, timely and responded to reporting requirements?	•	•	•
B. Were the accounting and financial systems in place adequate for project management and producing accurate and timely financial information?	•	•	•
C. Did the leveraging of funds (co-financing) happen as planned? Were financial resources utilized efficiently? Could financial resources have been used more efficiently?	•	•	•
D. Was procurement carried out in a manner making efficient use of project resources?	•	•	•
E. To what extent partnerships/linkages between institutions/organizations were encouraged and supported? What was the level of efficiency of cooperation and collaboration arrangements?	•	•	•
F. Was an appropriate balance struck between utilization of international expertise as well as local capacity?	•	•	•
Sustainability: To what extent are there financial, institutional, social-economic, and/or environmental risks to sustaining long-term project results?			
A. How well were risks, assumptions and impact drivers for financial, institutional, social and economic changes managed?	•	•	•

B. Has the experience of the project provided relevant lessons for other future projects targeted at similar objectives?	•	•	•
C. What lessons can be learnt from the project regarding efficiency?	•	•	•
D. What changes could have been made (if any) to the project in order to improve its efficiency?	•	•	•
Impact: Are there indications that the project has contributed to, or enabled progress toward, reduced environmental stress and/or improved ecological status?			
A. Has the project adequately taken into account the national/international realities, both in terms of institutional and policy framework towards the realization of project's components?	•	•	•
B. Are there any indicators that the project has contributed towards the realization of project's components ?	•	•	•

GEF Climate Change Mitigation Tracking Tool

Please complete the cells with white background colour only.

Is this the mid-term APR/PIR or the FINAL APR/PIR? Please refer to CCM tracking tool instruction tab for details	

Special Notes: reporting on lifetime emissions avoided

Lifetime direct GHG emissions avoided: Lifetime direct GHG emissions avoided are the emissions reductions attributable to the investments made during the project's supervised implementation period, totaled over the respective lifetime of the investments.
Lifetime direct post-project emissions avoided: Lifetime direct post-project emissions avoided are the emissions reductions attributable to the investments made outside the project's supervised implementation period, but supported by financial facilities put in place by the GEF project, totaled over the respective lifetime of the investments. These financial facilities will still be operational after the project ends, such as partial credit guarantee facilities, risk mitigation facilities, or revolving funds.
Lifetime indirect GHG emissions avoided (top-down and bottom-up): indirect emissions reductions are those attributable to the long-term outcomes of the GEF activities that remove barriers, such as capacity building, innovation, catalytic action for replication.
Please refer to the previous CCM instruction tab for special notes.

Please use the following GEF manual and calculator for EE and RE projects:

Manual for Energy Efficiency and Renewable Energy Projects

Please use the following GEF manual and calculator for transport projects:

Manual for Transportation Projects

For LULUCF projects, the definitions of "lifetime direct and indirect" apply. Lifetime length is defined to be 20 years, unless a different number of years are deemed appropriate. For emission or removal factors (tonnes of CO2eq per hectare per year), use IPCC defaults or country specific factors.

General Data	Results at mid-point, or result at project closing depending at whether this is the mid-term APR/PIR or final APR/PIR
Project Title	
GEF ID	
Agency Project ID	
Country	
Region	
GEF Agency	
Date of Council/CEO Approval	
GEF Grant (US$)	

Date of submission of the tracking tool	
Is the project consistent with the priorities identified in National Communications, Technology Needs Assessment, or other Enabling Activities under the UNFCCC?	
Is the project linked to carbon finance?	
Cofinancing expected (US$)	
Objective 1: Transfer of Innovative Technologies (Please refer to the CCM instruction tab for important guidance) **Please specify the type of enabling environment created for technology transfer through this project**	Yes =1, No =0
National innovation and technology transfer policy	
Innovation and technology centre and network	
Applied R&D support	
South-South technology cooperation	
North-South technology cooperation	
Intellectual property rights (IPR)	
Information dissemination	
Institutional and technical capacity building	
Other (please specify)	
Number of innovative technologies demonstrated or deployed	
Please specify three key technologies for demonstration or deployment	
Area of technology 1	
Type of technology 1	
Area of technology 2	
Type of technology 2	
Area of technology 3	
Type of technology 3	
Status of technology demonstration/deployment	
Lifetime direct GHG emissions avoided (Tonnes of CO2 eq). Please see special notes in the CCM instruction tab	

Lifetime direct post-project GHG emissions avoided (Tonnes of CO2 eq). Please see special notes in the CCM instruction tab	
Lifetime indirect GHG emissions avoided (bottom-up) (Tonnes of CO2 eq). Please see special in the CCM instruction tab	
Lifetime indirect GHG emissions avoided (top-down)) (Tonnes of CO2 eq). Please see special notes in the CCM instruction tab	
Objective 2: Energy Efficiency **Please specify if the project targets any of the following areas**	
Lighting	
Appliances (white goods)	
Equipment	
Cook stoves	
Existing building	
New building	
Industrial processes	
Synergy with phase-out of ozone depleting substances	
Other (please specify)	
Policy and regulatory framework	
Establishment of financial facilities (e.g., credit lines, risk guarantees, revolving funds)	
Capacity building	
Lifetime energy saved (to be reported in MJ, Million Joule). Please use IEA unit converter (Link bellow). Please see special notes on calculating energy saved in the CCM instruction tab	
http://www.iea.org/stats/unit.asp	
Lifetime direct GHG emissions avoided (Tonnes of CO2 eq). Please see special notes in the CCM instruction tab	
Lifetime direct post-project GHG emissions avoided (Tonnes of CO2 eq). Please see special notes in the CCM instruction tab	
Lifetime indirect GHG emissions avoided (bottom-up) (Tonnes of CO2 eq). Please see special notes in the CCM instruction tab	

Lifetime indirect GHG emissions avoided (top-down)) (Tonnes of CO2 eq). Please see special notes in the CCM instruction tab	
Objective 3: Renewable Energy **Please specify if the project includes any of the following areas**	
Heat/thermal energy production	
On-grid electricity production	
Off-grid electricity production	
Policy and regulatory framework	
Establishment of financial facilities (e.g., credit lines, risk guarantees, revolving funds)	
Capacity building	
Installed capacity per technology directly resulting from the project	
Wind	
Biomass	
Biomass	
Geothermal	
Geothermal	
Hydro	
Photovoltaic (solar lighting included)	
Solar thermal heat (heating, water, cooling, process)	
Solar thermal power	
Marine power (wave, tidal, marine current, osmotic, ocean thermal)	
Lifetime energy production per technology directly resulting from the project (IEA unit converter: http://www.iea.org/stats/unit.asp)	
Wind	
Biomass	
Biomass	
Geothermal	
Geothermal	
Hydro	
Photovoltaic (solar lighting included)	

Solar thermal heat (heating, water, cooling, process)	
Solar thermal power	
Marine energy (wave, tidal, marine current, osmotic, ocean thermal)	
Lifetime direct GHG emissions avoided (Tonnes of CO2)	
Lifetime direct post-project GHG emissions avoided (Tonnes of CO2)	
Lifetime indirect GHG emissions avoided (bottom-up) (Tonnes of CO2)	
Lifetime indirect GHG emissions avoided (top-down) (Tonnes of CO2)	
Objective 4: Transport and Urban Systems **Please specify if the project targets any of the following areas**	
Bus rapid transit	
Other mass transit (e.g., light rail, heavy rail, water or other mass transit; excluding regular bus or minibus)	
Logistics management	
Transport efficiency (e.g., vehicle, fuel, network efficiency)	
Non-motorized transport (NMT)	
Travel demand management	
Comprehensive transport initiatives (Involving the coordination of multiple strategies from different transportation sub-sectors)	
Sustainable urban initiatives	
Policy and regulatory framework	
Establishment of financial facilities (e.g., credit lines, risk guarantees, revolving funds)	
Capacity building	
Length of public rapid transit (PRT)	
Length of non-motorized transport (NMT)	
Number of lower GHG emission vehicles	
Number of people benefiting from the improved transport and urban systems	
Lifetime direct GHG emissions avoided (Tonnes of CO2 eq). Please see special notes in the CCM instruction tab	

Lifetime direct post-project GHG emissions avoided (Tonnes of CO2 eq). Please see special notes in the CCM instruction tab	
Lifetime indirect GHG emissions avoided (bottom-up) (Tonnes of CO2 eq). Please see special notes in the CCM instruction tab	
Lifetime indirect GHG emissions avoided (top-down)) (Tonnes of CO2 eq). Please see special notes in the CCM instruction tab	
Objective 5: LULUCF **Area of activity directly resulting from the project**	
Conservation and enhancement of carbon in forests, including agroforestry	
Conservation and enhancement of carbon in nonforest lands, including peat land	
Avoided deforestation and forest degradation	
Afforestation/reforestation	
Good management practices developed and adopted	
Carbon stock monitoring system established	
Lifetime direct GHG emission avoided (Tonnes of CO2)	
Lifetime indirect GHG emission avoided (Tonnes of CO2)	
Lifetime direct carbon sequestered (Tonnes of CO2 eq). Please see special notes in the CCM instruction tab	
Lifetime indirect carbon sequestered (Tonnes of CO2 eq). Please see special notes in CCM instruction tab	
Objective 6: Enabling Activities **Please specify the number of Enabling Activities for the project (for a multiple country project, please put the number of countries/assessments)**	
National Communication	
Technology Needs Assessment	
Nationally Appropriate Mitigation Actions	
Other	
Does the project include Measurement, Reporting and Verification (MRV) activities?	

ANNEX D: RATING SCALES

Ratings for Outcomes, Effectiveness, Efficiency, M&E, I&E Execution	***Sustainability ratings:***	***Relevance ratings***
6: Highly Satisfactory (HS): no shortcomings 5: Satisfactory (S): minor shortcomings 4: Moderately Satisfactory (MS) 3. Moderately Unsatisfactory (MU): significant shortcomings 2. Unsatisfactory (U): major problems 1. Highly Unsatisfactory (HU): severe problems	4. Likely (L): negligible risks to sustainability 3. Moderately Likely (ML):moderate risks 2. Moderately Unlikely (MU): significant risks 1. Unlikely (U): severe risks	2. Relevant (R) 1. Not relevant (NR) ***Impact Ratings:*** 3. Significant (S) 2. Minimal (M) 1. Negligible (N)
Additional ratings where relevant: Not Applicable (N/A) Unable to Assess (U/A		

ANNEX E: EVALUATION CONSULTANT CODE OF CONDUCT AND AGREEMENT FORM

Evaluators:

1. Must present information that is complete and fair in its assessment of strengths and weaknesses so that decisions or actions taken are well founded.
2. Must disclose the full set of evaluation findings along with information on their limitations and have this accessible to all affected by the evaluation with expressed legal rights to receive results.
3. Should protect the anonymity and confidentiality of individual informants. They should provide maximum notice, minimize demands on time, and respect people's right not to engage. Evaluators must respect people's right to provide information in confidence, and must ensure that sensitive information cannot be traced to its source. Evaluators are not expected to evaluate individuals, and must balance an evaluation of management functions with this general principle.
4. Sometimes uncover evidence of wrong doing while conducting evaluations. Such cases must be reported discreetly to the appropriate investigative body. Evaluators should consult with other relevant oversight entities when there is any doubt about if and how issues should be reported.
5. Should be sensitive to beliefs, manners and customs and act with integrity and honesty in their relations with all stakeholders. In line with the UN Universal Declaration of Human Rights, evaluators must be sensitive to and address issues of discrimination and gender equality. They should avoid offending the dignity and self-respect of those persons with whom they come in contact in the course of the evaluation. Knowing that evaluation might negatively affect the interests of some stakeholders, evaluators should conduct the evaluation and communicate its purpose and results in a way that clearly respects the stakeholders' dignity and self-worth.
6. Are responsible for their performance and their product(s). They are responsible for the clear, accurate and fair written and/or oral presentation of study imitations, findings and recommendations.
7. Should reflect sound accounting procedures and be prudent in using the resources of the evaluation.

Evaluation Consultant Agreement Form[25]

Agreement to abide by the Code of Conduct for Evaluation in the UN System

Name of Consultant: _____

Name of Consultancy Organization (where relevant)**:** _____

I confirm that I have received and understood and will abide by the United Nations Code of Conduct for Evaluation.

Signed at *place* on *date*

Signature: _____

[25] www.unevaluation.org/unegcodeofconduct

ANNEX F: EVALUATION REPORT OUTLINE[26]

i. Opening page:
- Title of UNDP supported GEF financed project
- UNDP and GEF project ID#s.
- Evaluation time frame and date of evaluation report
- Region and countries included in the project
- GEF Operational Program/Strategic Program
- Implementing Partner and other project partners
- Evaluation team members
- Acknowledgements

ii. Executive Summary
- Project Summary Table
- Project Description (brief)
- Evaluation Rating Table
- Summary of conclusions, recommendations and lessons

iii. Acronyms and Abbreviations
(See: UNDP Editorial Manual[27])

1. Introduction
- Purpose of the evaluation
- Scope & Methodology
- Structure of the evaluation report

2. Project description and development context
- Project start and duration
- Problems that the project sought to address
- Immediate and development objectives of the project
- Baseline Indicators established
- Main stakeholders
- Expected Results

3. Findings
(In addition to a descriptive assessment, all criteria marked with (*) must be rated[28])

3.1 Project Design / Formulation
- Analysis of LFA/Results Framework (Project logic /strategy; Indicators)
- Assumptions and Risks
- Lessons from other relevant projects (e.g., same focal area) incorporated into project design
- Planned stakeholder participation
- Replication approach
- UNDP comparative advantage
- Linkages between project and other interventions within the sector
- Management arrangements

3.2 Project Implementation
- Adaptive management (changes to the project design and project outputs during implementation)
- Partnership arrangements (with relevant stakeholders involved in the country/region)
- Feedback from M&E activities used for adaptive management
- Project Finance:
- Monitoring and evaluation: design at entry and implementation (*)
- UNDP and Implementing Partner implementation / execution (*) coordination, and operational issues

3.3 Project Results

[26]The Report length should not exceed *40* pages in total (not including annexes).
[27] UNDP Style Manual, Office of Communications, Partnerships Bureau, updated November 2008
[28] Using a six-point rating scale: 6: Highly Satisfactory, 5: Satisfactory, 4: Marginally Satisfactory, 3: Marginally Unsatisfactory, 2: Unsatisfactory and 1: Highly Unsatisfactory, see section 3.5, page 37 for ratings explanations.

- Overall results (attainment of objectives) (*)
- Relevance(*)
- Effectiveness & Efficiency (*)
- Country ownership
- Mainstreaming
- Sustainability (*)
- Impact

4. Conclusions, Recommendations & Lessons

- Corrective actions for the design, implementation, monitoring and evaluation of the project
- Actions to follow up or reinforce initial benefits from the project
- Proposals for future directions underlining main objectives
- Best and worst practices in addressing issues relating to relevance, performance and success

5. Annexes

- ToR
- Itinerary
- List of persons interviewed
- Summary of field visits
- List of documents reviewed
- Evaluation Question Matrix
- Questionnaire used and summary of results
- Evaluation Consultant Agreement Form

ANNEX G: EVALUATION REPORT CLEARANCE FORM

(to be completed by PSO and UNDP GEF Technical Adviser based in the region and included in the final document)

Evaluation Report Reviewed and Cleared by
UNDP PSOuntry Office
Name: _____
Signature: _____ Date: _____
UNDP GEF RTA
Name: _____
Signature: _____ Date: _____

Annex 2: Itinerary

The TE mission included meetings with UNDP CO Senior Management (Deputy Resident Representative); meetings and discussions with the Environment & Energy Programme Analyst, representative of UNDP/GEF Istanbul Regional Hub; meetings/interviews with the project staff (Project Manager, project Energy Audit expert) and project International consultants/experts (CTA, International sectoral experts); meetings/interviews with the key stakeholders; visits of pilot projects' sites. Details are presented in the below table.

Initial TE mission	
Time	**Activity**
Monday, 2 October 2017	
10.30	Arrival of International Consultant to Moscow
13.00-16.00	Internal meeting of the TE Team
16.00-17.30	Meeting with the Project Manager
17.30-19.00	Meeting with RTA
Tuesday, 3 October 2017	
10.00-12.00	Attendance of the Meeting of the Regional Energy Managers
13.00-17.00	- Participation in the Round Table Discussion on the replication of the Project results; - Interviews with the participants
Wednesday, 4 October 2017	
10.00-13.00	Attendance of the PSC meeting
14.00-17.00	Attendance of the Project Closing Event
	Departure to Pskov by train
Thursday, 5 October 2017	
9.00-17.00	- Visit of Pilot Project in Porkhov - Visit of Pilot Project in Ostrov
Friday, 6 October 2017	
10.00-18.00	Meetings with stakeholders in Pskov
Saturday, 7 October 2017	
9.00-14.30	Travel to St. Petersburg by car
15.30-02.20 (+1)	Travel to Vologda by train
Sunday, 8 October 2017	
17.00-19.00	Meeting with the Project expert Mr. Tsakunov
Monday, 9 October 2017	
9.00-18.00	- Meetings with stakeholders - Visit of Pilot Project site
Tuesday, 10 October 2017	
	Travel to Moscow by train
18.00-19.30	Meeting with the Project Manager
Wednesday, 11 October 2017	
9.00-10.30	Internal meeting of TE Team
	Departure from Moscow

Additional TE mission	
Time	**Activity**
Wednesday, 22 November 2017	
10.30	Arrival of International Consultant to Moscow
14.00-16.00	Internal meeting of the TE Team
16.00-17.30	Meeting with the Project Manager (PM)
Thursday, 23 November 2017	
11.00-12.30	Meeting with the NPD, Mr. Igor Kozhukhovskiy
12.30-13.215	Meeting with the Acting Head of the UNDP CO, Ms. Irina Bredneva
14.00-15.00	Meeting with the PM, Mr. Vitaly Bekker
17.00-17.30	Interview of Mr. Alexander Fadeev, Department of Construction, Ministry of Construction
17.30-18.00	Interview of Ms. Olga Bulgakova, Chairperson, Association of Energy Service Companies of Russian Federation (РАЭСКО)
Friday, 24 November 2017	
14.00-16.00	Meeting with AF Consult - Sergey Katorgin, Deputy CEO - Andrey Tarakin, Leading expert, Technical department
Saturday, 25 November 2017	
	Departure from Moscow

Annex 3: List of persons interviewed

Project Team	- Vitaly Bekker, Project Manager - Grigory Markin, former Project Manager (2011-2012) - Andrey Karpus, former Project Manager (2013-2014) - Maria Lukina-Lebedeva, Project assistant - Alexander Moskalyov, Chief Technical Advisor (Education Component) - Sergey Tsakunov, Fundraising Advisor - Anna Krasnova, Regional Energy Manager in the Pskov region - Natalia Bekryasheva, Regional Energy Manager in the Vologda region - Pavel Muravjev, Pskov Pilot Project Coordinator - Andrey Dodonov, consultant on the EMIS implementation - Andrey Martynychev, energy manager
UNDP Project Support Office Russia	- Nataly Olofinskaya, Head of UNDP Project Support Office - Irina Bredneva, Acting Head of Office - Olga Martynenko, Projects Associate
UNDP Regional Hub	- John O'Brien, Regional Technical Advisor on Climate Change Mitigation
National Project Director	- Igor Kozhukhovsky
Ministry of Construction, Housing and Utilities	- Fadeev
Ministry of Economy	- Vakhrukov
Association of Energy Service Companies	- Bulgakova, Chairperson
Stakeholders in Vologda oblast	- Vitaly Tushinov, Deputy Governor - Anton Strizhov, Head, Department of Fuel and Energy Complex and Tariff Regulation - Yevgenia Mazanova, Head, Energy Efficiency and Engineering Infrastructure Department of the Department of Fuel and Energy Complex and Tariff Regulation - Galina Generalova, Consultant on EE and Engineering Infrastructure Department of the Department of Fuel and Energy Complex and Tariff Regulation

Stakeholders in Pskov oblast	- Valeri Petrov, Acting Director, Pskov Communal Systems - Elena Pilipenko, Head of Dept. of Energy, Energy Savings and Gasification, Pskov oblast State Committee on Energy and Tariffs - Raisa A. Sirosh, Deputy Head of Ostrov District
Representatives of demo projects	- Nikolay Sokolov, Chief Physician, Health clinic No. 3 of Vologda
UNIDO, Russia	- Boris Melnichuk, Deputy Director - Izmail Petrov, Expert
AF Consult	- Sergey Katorgin, Deputy CEO - Andrey Tarakin, Leading expert

In addition, Skype conferences were held with:

- Susan Legro	-	International consultant for preparation of Project Document
- Vesa Rutanen	-	International consultant for MTR
- Zoran Morvaj	-	BEENWR Project International consultant
- Adil Lari	-	BEENWR Project International consultant
- Goran Cacic	-	Developer of EMIS
- Vitaly Kovalchuk	-	Government of Russia

Annex 4: List of documents reviewed

Project documentation

- Project Identification Form (PIF)
- Request for Project Preparation Grant (PPG)
- Request for CEO Endorsement
- Project document
- Project Inception Report
- Project Mid-Term Evaluation Report, 2014
- UNDP Management Response to the Mid-Term Evaluation
- Recommendations for updated project strategy, 2014
- Annual work plans (2012-2017)
- Annual GEF Project Implementation Reports (PIRs) for 2012-2017
- CDRs (2011-2016)
- Financial audit reports
    - ✓ Management letter (report) on the results of audit of UNDP/GEF project 00074315 “Building Energy Efficiency in the North West of Russia” for the period 01.01.2013-31.12.2013
    - ✓ Management letter (report) on the results of audit of UNDP/GEF project 00074315 “Building Energy Efficiency in the North West of Russia” for the period 01.01.2015-31.12.2015
    - ✓ Management letter (report) on the results of audit of UNDP/GEF project 00074315 “Building Energy Efficiency in the North West of Russia” for the period from 01.01.2016-31.12.2016
- Project Quarterly Progress Report, 2017
- Project Steering Committee minutes: No.1: 21.06.2011; No.2: 16.12.2013; No.3: 04.12.2014; No.4 (on-line): 11.08.2015; No.5: 18.11.2015; No.6 (on-line): 28.04.2016; No.7 (on-line): 30.09.2016; No.8: 22.11.2016; No.9 (on-line): 26.06.2017
- Updated Project Risks, 2017
- Review of the results of the UNDP-GEF Project "Building Energy Efficiency in the North-West Russia", 2017 (in Russian: Обзор результатов работы Проекта ПРООН-ГЭФ “Энерго-эффективность зданий на Северо-Западе России”), 2017
- GEF Tracking Tool for Climate Change Mitigation Projects

Technical reports

- Best Practice methodology for Energy Management in Municipalities, 2012
- Best Practice Elements for Energy Management in Buildings, 2012
- Methodology of informational and propaganda system in municipal services, 2012
- Project strategy and adaptive management, 2012

- Evaluation of Technical Solutions for Pilot Buildings. Analysis and Recommendations of the Planned Pilot Sites in Vologda and Arkhangelsk, 2013
- Models and Strategies for the Integration of Energy Efficiency Technologies in Residential Buildings for Vologda and Arkhangelsk Oblasts, 2014
- Feasibility study for projects in energy saving and energy efficiency of budgetary buildings in Vologda region (in Russian: Подготовка технико-экономических обоснований проектов в области энергосбережения и повышения энергетической эффективности бюджетных объектов Вологодской области), 2016
- Monitoring of energy consumption, calculation of energy consumption savings and carbon dioxide emissions reductions of demonstration facilities (In Russian: Мониторинг энергопотребления Демонстрационных объектов, расчет сокращения потребления энергоресурсов и размера выбросов углекислого газа), 2017

Documentation related to the demo projects in Arkhangelsk, Pskov and Vologda Regions

TE Team has reviewed tens of documents. Among them, the documents explaining why the demo projects haven't been implemented in Arkhangelsk oblast:

- Reference "On exclusion from the approved list of demonstration sites for the energy-efficient retrofit under component 3.3, dormitory of the JSC Arkhangelsk Music College, Arkhangelsk, Dzerzhinsky Ave., 23" (in Russian: Справка "Об исключении из одобренного списка демонстрационных объектов по проведению работ по энергоэффективному капитальному ремонту в рамках реализации компоненты 3.3. Проекта ГБОУ СПО АО «Архангельский музыкальный колледж», здание общежития, г. Архангельск, пр. Дзержинского, д. 23")
- Reference "On exclusion from the approved list of demonstration sites for the energy-efficient retrofit under component 3.3, kindergarten No. 56 "Tuesok", Arkhangelsk, 50, Gagarin St., building 1" (in Russian: Справка "Об исключении из одобренного списка демонстрационных объектов по проведению работ по энергоэффективному капитальному ремонту в рамках реализации компоненты 3.3. Проекта МБДОУ муниципального образования «Город Архангельск» детский сад развивающего вида № 56 «Туесок»: г. Архангельск, ул. Гагарина, д. 50, корп. 1")

Project publications

- System of continuous education in the field of energy efficiency (in Russian: Система непрерывного образования в области энергоэффективности), 2017
- Energy-efficient technologies in new construction and major repairs (in Russian: Энергоэффективные технологии при новом строительстве и капитальном ремонте), 2017
- Creation of a system energy resources management of cities (in Russian: Создание системы городского управления энергетическими ресурсами), 2017
- News Digest (2011-2017) (in Russian: Дайджест Новостей), 2017

Other relevant documentation

- Federal Law of the Russian Federation No. 261 «About Energy Savings and Increasing Energy Efficiency and about the Entry into Force of Changes to Distinct Legislative Acts of the Russian Federation» of 11.11.2009.
- Federal Law of the Russian Federation No. 184 «About technical regulation» of 27.12.2002.
- Federal Law of the Russian Federation No. 384 «Technical regulation on safety of buildings and constructions» of 30.12.2009.

- Decree of the Russian Federation No. 275 «Priority mandatory energy performance requirements for buildings, structures and constructions, developed by the Ministry of Energy» of 07.03.2017.
- Building Code SP 50.13330.2012 «Thermal performance of the buildings » (revised edition of SNiP No. 23-02-2003).
- Building Code SP 23-101-2004 «Thermal performance design of buildings».
- Building Code SP 55.13330.2016 «Single-family houses» (revised edition of SNiP No. 31-02-2001).
- Building Code SP 54.13330.2016 «Multicompartment residential buildings» (revised edition of SNiP No. 31-01-2003).
- Building Code SP 118.13330.2012 «Public buildings and works» (revised edition of SNiP No. 31-06-2009).
- Building Code SP 44.13330.2011 «Office and social buildings» (revised edition of SNiP No. 2.09.04-87).
- Building Code SP 52.13330.2016 «Daylighting and artificial lighting» (revised edition of SNiP No. 23-05-95).
- Building Code SP 60.13330.2016 «Heating, ventilation and conditioning» (revised edition of SNiP No. 41-01-2003).
- Building Code SP 61.13330.2012 «Designing of thermal insulation of equipment and pipe lines» (revised edition of SNiP No. 41-03-2003).
- Building Code SP 131.13330.2012 «Construction climatology» (revised edition of SNiP 23-01-99).
- GOST R 56623-2015 «Non-destructive evaluation. Methods of determination of thermal resistance of enclosing structures» from 01.06.2016. Before GOST 26254-84 «Buildings and structures. Methods of determination of thermal resistance of enclosing structures».
- Methodological recommendations on ranking of buildings under energy efficiency level (2016).
- Territorial budget specification 23-348-2003 Pskov region. Energy efficiency of residential and public buildings. Standards for energy and heat.
- Territorial budget specification 23-350-2004 Vologda region. Energy efficiency of residential and public buildings. Standards for energy and heat.

In addition, for better understanding of the sustainable energy policy of Russian Federation, the following documents have been studied:

- Energy Strategy of Russia for the Period up to 2030, 2010
- Intended Nationally-Determined Contribution (INDC) of Russian Federation in accordance with decision 1/CP. 20 UNFCCC, 2015

Annex 5: Evaluative Question Matrix

Evaluative Criteria Questions	Indicators	Sources	Methodology
Relevance: How does the project relate to the main objectives of the GEF focal area, and to the environment and development priorities at the local, regional and national levels?			
• How did the project support the GEF focal area and strategic priorities?	• Compliance with GEF strategic priorities	• GEF-5 Focal Area Strategy, Project Document	• Comparative analysis of documents
• How did the project support the energy efficiency/energy saving and climate objectives of the Russian Federation?	• Stated objectives of Project Document and national policies and strategies on climate change mitigation	• Project Document, national policies and strategies on climate change mitigation	• Comparative analysis of PSC meetings, BEENWR Project reports, interviews
• How did the project support the needs of relevant stakeholders and has the implementation of the project been inclusive of all relevant stakeholders?	• Stated objectives, stakeholder analysis of Project Document	• Project Document, project reports, PSC meetings	• Analysis of BEENWR Project reports, PSC meetings, interviews, own observations
• Are there logical linkages between expected results of the project (log frame) and the project design (in terms of project components, choice of partners, structure, delivery mechanism, scope, budget, use of resources, etc.)?	• Consistency between the LogFrame and general design	• Project document, Inception report, MTR report, interviews	• Analysis of ProDoc, LogFrame, Interviews, own observations
Effectiveness: To what extent have the expected outcomes and objectives of the project been achieved?			
• Has the project been effective in achieving its expected Outcomes? - Outcome 1: Enabling environment and strengthened enforcement capacities for improved energy efficiency at the provincial and local levels; - Outcome 2: Capacity building and know-how; - Outcome 3: Demonstration of local energy efficient solutions and management models.	• Achieved Objective, Outcomes, and Outputs	• Project Document (LogFrame), PIRs, other reports, PSC meetings	• Analysis, own observations
• What lessons have been learned from the project regarding achievement of outcomes?	• Lessons Learned	• PIRs, other project documentation, interviews	• Analysis of Project reports and publications, presentations at the International Workshop, interviews, pilot project site visits, own observations

• What changes could have been made (if any) to the design of the project in order to improve the achievement of the project's expected results?	• Need in adaptive management	• Annual Work Plans, Project Implementation Reviews, other project documentation, interviews	• Analysis of PIRs, other reports, interviews
Efficiency: Was the project implemented efficiently, in-line with international and national norms and standards?			
• To what extent did the Project Manager, staff, consultants, national partners, and the UNDP Country Office carry out the work of the project with efficiency, in terms of time and project funds?	• Content and timing of reported outputs, as compared with targets of Project Document and Annual Work Plans	• Interviews, Project Implementation Reviews, other project documentation	• Analysis of PIRs, CDRs, interviews
• Were the accounting and financial systems in place adequate for project management and producing accurate and timely financial information?	• Qualitative accounting	• Audit reports, interviews, Project Implementation Reviews, other project documentation	• Analysis of documents, interviews
• Did the leveraging of funds (co-financing) happen as planned? Were financial resources utilized efficiently? Could financial resources have been used more efficiently?	• Actual co-financing	• Co-financing table, Project Implementation Reviews, other project documentation	• Analysis of reports, interviews
• Was procurement carried out in a manner making efficient use of project resources?	• Efficient procurements in line with the UNDP rules	• CDRs, PIRs, other reports, interviews	• Analysis of documentation, own assessment
• To what extent partnerships/linkages between institutions/organizations were encouraged and supported? What was the level of efficiency of cooperation and collaboration arrangements?	• Existing cooperation with the stakeholders	• PIRs, other reports, official documents, interviews	• Analysis of documentation, interviews
• Was an appropriate balance struck between utilization of international expertise as well as local capacity?	• State of balance International expertise vs. local expertise	• AWPs, CDRs, interviews	• Analysis of CDRs, interviews
Sustainability: To what extent are there financial, institutional, social-economic, and/or environmental risks to sustaining long-term project results?			
• How well were risks, assumptions and impact drivers for financial, institutional, social and economic changes managed?	• Status of risks	• PIRs, risk logs, PSC meetings, interviews	• Review of risk logs, interviews, own assessment
• Has the experience of the project provided relevant lessons for other future	• Lessons Learned	• PIRs, other project documentation, interviews	• Analysis of Project reports and publications, interviews

projects targeted at similar objectives?			
• What lessons can be learnt from the project regarding sustainability?	• Lessons learned	• Interviews, PIRs	• Interviews and analysis
• What changes could have been made (if any) to the project in order to improve its sustainability?	• Need in adaptive management	• Interviews, PIRs	• Analysis of PIRs, interviews, own assessment
Impact: Are there indications that the project has contributed to, or enabled progress toward, reduced environmental stress and/or improved ecological status?			
• Has the project adequately taken into account the national/international realities, both in terms of institutional and policy framework towards the realization of project's components?	• Relevance of the achieved results	• Policy documents; project reports, interviews	• Analysis of existing institutional and policy framework, interviews
• Are there any indicators that the project has contributed towards the realization of project's components?	•	•	•

Annex 6: Questionnaire used and summary of results

Interviews with the Project Team, Project Experts and Consultants, key stakeholders were focused on standard questions including:

- What would you say has been the most significant change you have seen due to the BEENWR Project?
- In your opinion, which activities were been the most effective? less effective?
- How relevant is the BEENWR Project and its activities to the challenges facing Russian Federation today?
- Can you identify any external influences (policy, economic, social) that have influenced the project? Examples might include changes in tariffs, institutional restructuring, etc.
- Do you see any potential risks that could affect the results that the BEENWR Project has achieved after its end?
- Have you participated in other internationally-funded energy and/or climate change mitigation projects? If so, how would you compare this BEENWR Project to other projects?
- How useful is the assistance provided by the BEENWR Project to you personally or your organization?
- How effective was the BEENWR Project in terms of generating policy change?

Annex 7: Ratings Scales

Ratings for Outcomes, Effectiveness, Efficiency, M&E, I&E Execution	Sustainability ratings	Relevance ratings	Impact ratings
6: Highly Satisfactory (HS): The project had no shortcomings in the achievement of its objectives in terms of relevance, effectiveness, or efficiency	**4. Likely (L):** negligible risks to sustainability	**2. Relevant (R)**	**3. Significant (S)**
5: Satisfactory (S): There were only minor shortcomings	**3. Moderately Likely (ML):** moderate risks	**1. Not relevant (NR)**	**2. Minimal (M)**
4: Moderately Satisfactory (MS): there were moderate shortcomings	**2. Moderately Unlikely (MU):** significant risks		**1. Negligible (N)**
3. Moderately Unsatisfactory (MU): the project had significant shortcomings	**1. Unlikely (U):** severe risks		
2. Unsatisfactory (U): there were major shortcomings in the achievement of project objectives in terms of relevance, effectiveness, or efficiency			
1. Highly Unsatisfactory (HU): The project had severe shortcomings			
Additional ratings where relevant: Not Applicable (N/A) Unable to Assess (U/A)			

Project Sustainability rating		
4	Likely (L)	Negligible risks to sustainability, with key outcomes expected to continue into the foreseeable future
3	Moderately Likely (ML)	Moderate risks, but expectations that at least some outcomes will be sustained
2	Moderately Unlikely (MU)	Substantial risks that key outcomes will not carry on after project closure, although some outputs and activities should carry on
1	Unlikely (U)	Severe risks that project outcomes as well as key outputs will not be sustained
Not Applicable (N/A) Unable to Assess (U/A)		

Annex 8: Evaluation Consultant Agreement Form

Evaluation Consultant Agreement Form

Agreement to abide by the Code of Conduct for Evaluation in the UN System:

Name of Consultant: Paata JANELIDZE

I confirm that I have received and understood and will abide by the United Nations Code of Conduct for Evaluation.

Signed at Moscow, 02.10.2017

Signature: