United Nations Development Programme (UNDP) plays an important role as a key strategic partner to the Government of Belarus in developing energy efficiency policy and programmes.

UNDP supports the Government of Belarus to achieve its GDP energy intensity reduction target through the international technical assistance project “Improving Energy Efficiency in Residential Buildings in the Republic of Belarus” funded by the Global Environment Facility (GEF) in the framework of its Climate Change focal area strategy.

Project budget: US$ 4.9 million
The GEF: US$ 4.5 million
UNDP: US$ 400,000

Improving Energy Efficiency in Residential Buildings in the Republic of Belarus (2012-2016)

The project is planned for a five-year implementation period and aims at reducing the energy consumption during the residential buildings construction and the following maintenance, as well as reducing the carbon pollution that contributes to the climate change.

The project focuses on developing and ensuring the effective implementation of new methods in residential buildings design, as well as construction standards and energy efficiency certification schemes.

The project is realised by the United Nations Development Programme with the financial support from the Global Environment Facility.

The Department on Energy Efficiency under the State Committee on Standardization of Belarus acts as the National Implementing Agency of the project.

The project’s main partners are the Ministry of Architecture and Construction of Belarus, JSC “MAPID”, RUE “Hrodnaugrazhdanproekt”, JSC “Hrodnazhilstroy”, CUE “Direction of Capital Construction Works Execution of Mogilev”.

The key project’s objectives include:
• assist strengthening of the legal and regulatory framework, as well as the legislation implementation mechanisms aimed at improving the energy efficiency in the residential building sector;
• facilitate the capacity building of Belarusian specialists in order to effectively implement and apply the new energy-saving standards and construction norms;
• demonstrate the energy and cost-saving potential of the new energy efficiency measures by implementing the three pilot construction projects in Hrodna, Mahiliou and Minsk;
• improve the awareness of the industry experts and the general public of the energy efficiency issues in the residential sector.
• Establishing the monitoring and replication mechanisms to ensure the project’s results reproduction in Belarus and worldwide.

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Since January 2016, the project has achieved the following:

With expert support from the project, a roadmap that includes a list of technical regulatory acts subject to further development and adoption has been developed. Some of these documents have been added to the approved State Catalogue of Technical Norms and Standards, of which the key six ones have been already adopted. The ‘Energy Efficiency in Buildings’ Technical Code, the most important act that was prepared by RUE ‘Stroytekhnorm’ in cooperation with the project, has been included in the State Development Program for Technical Regulations, Standardization and Conformity Assessment in the Field of Energy Efficiency, has passed necessary conciliation procedures, and is expected to be duly adopted in 2016.

Energy audit of 55 residential buildings has been successfully carried out using modern software tools and protocols. Based on this experience, the project has prepared recommendations and has updated the guidelines for improving the residential buildings energy audit practices that will be soon submitted for approval. During the course of training seminars organized by the project, about 180 specialists have improved their knowledge and skills in the field of modern methods of energy audits of residential buildings.

As a result of five international conferences, a series of seminars, roundtables and trainings more than 2000 participants have become skilled at advanced practices in the field of the energy efficiency improvement. The project has supported and organized participation of 58 managers and specialists in 5 study visits and 12 international events outside Belarus, where they have become acquainted with the up-to-date experience in design, construction and operation of energy efficient housing as well as with legal framework, standards and policies applicable to the field of residential construction in the leading European countries on the example of Germany, Austria and the Czech Republic.

In order to disseminate knowledge and experience, the project is also collaborating with the Advanced Training Institute, which specializes in the construction sector, and is providing all necessary materials for the relevant courses in Belarusian National Technical University. About 200 technical reports along with necessary guidelines on latter-day energy efficient technologies, design principles, new technical and engineering solutions in the construction of housing were produced and distributed by the project for design organizations. Articles, opinions and commentaries of the project’s experts can be found in the leading media resources of Belarus.

With a view to demonstrate the potential of energy saving policy in the housing sector, the project has completed the design stage and is currently providing support to construction of three pilot energy efficient multi-apartments in Minsk, Hrodna and Mahilou. The project has already acquired the basic energy-efficient engineering equipment and delivers it to the construction sites. The first building is a one-entrance 19-storey 133-apartment large-panel residential house in Minsk. The developer is “MAPID” JSC. The second building is a three-entrance 10-storey 120-apartment residential house in Hrodna being constructed of brick partition crosswalls with the outer walls made of foam concrete blocks. The developer is “Hrodnaholding” OJSC. The third building is a four-entrance 10-storey 180-apartment semi-frame panel residential building located. The developer is CUE “Direction of Capital Construction Works Execution of Mogilev”.

The baseline design of all these houses is built on the existing construction norms and thermal standards and envisages that the space heating and hot water supply system are connected to a district heating facility with installation of radiators, thermostatic valves and heat meters in every apartment as a standard design feature. UNDP-GEF project contribution covers additional energy efficiency measures with associated costs equal to 17% of the basic investments in average. These measures, among others, include: (i) door-to-door mechanical supply and exhaust ventilation system with 80-% exit air heat recovery for heating; (ii) solar collectors, (iii) heat pumps utilizing soil thermal potential through foundation piles and thermal potential of district sewerage drains, (iv) recuperative heat exchangers to utilize wastewater heat potential for hot water supply system; (v) façade and roof PV-panels. It is expected that the said measures while being applied to the pilot buildings will allow to achieve the double reduction of thermal energy consumption, because the specific consumption for space heating will be below 25 kWh/m² per year, and for hot water supply will not exceed 40 kWh/m² per year.

UNDP website: www.by.undp.org
Project website: www.effbuild.by