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.


The project is planned for a four-year implementation period and aims at reducing energy consumption during construction and further operation of residential buildings, as well as corresponding reduction of carbon pollution that contributes to climate change.

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

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

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

The project’s partnership network also includes Ministry of Architecture and Construction of the Republic of Belarus, JSCo “MAPID”, RUE “Hrodnagrazhdanproekt”, Mogilev Regional Executive Committee.

**The key project’s objectives include:**

- Provide support to strengthening the legal and regulatory framework, as well as mechanisms to enforce the legislation for improving residential energy efficiency in the building sector.
- Facilitate the development of enhanced capacity of the Belarusian specialists to implement and effectively apply new energy efficiency standards and construction norms.
- Implement three pilot construction projects to demonstrate in practice energy and cost-saving potential of the new energy efficiency measures.
- Ensure awareness of industry experts and general public on energy efficiency in the residential sector.
- Establish monitoring and replication mechanisms to ensure reproduction of the project’s results in Belarus and worldwide.

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

**Project website:** www.effbuild.by
The detailed comparative analysis of the best available energy efficiency methodologies, practices, and existing gaps in Belarus and European Union has been conducted revealing high level of harmonization of national and corresponding EU standards. However, monitoring and calculation of energy performance of different types of residential buildings in Belarus requires additional special methodology and guidelines. Recommendations were made for inclusion in the draft of the Complex Programme for Development of Energy Efficient Construction, Reconstruction and Modernization of Residential Buildings for 2013-2015 with perspective till 2020.

Methodological guidelines for energy performance monitoring and calculation were drafted, as well as recommendations based on the international IPMV-protocol for energy audit in residential buildings in line with the best international practice and with due account of national provisions. The guidelines were successfully tested during energy performance monitoring and calculation of five residential buildings, and introduced as a curricular material for the series of energy audit training courses. The first workshop was held in December 2013 where around 70 energy audit specialists received comprehensive and updated knowledge on the issue.

22 Belarusian experts and decision makers participated in two study trips to Germany and Austria, as well as in three global UN-organized energy efficiency events in Georgia and Switzerland. The project also facilitated and provided information support for establishing mutually beneficial cooperation between Belarusian specialists and two UNDP/GEF residential energy efficiency initiatives in Russia and Kazakhstan.

Construction sites for three pilot energy efficient residential buildings in Minsk, Grodno and Mogilev have been identified and approved by the project partners. The project also researched baseline architecture and engineering characteristics, intended for two residential buildings in Minsk and Grodno, suggested space and planning parameters, technical and design solutions, and selected the most cost-effective performance.

The first pilot building is a nineteen-storey, 140 apartments, large-panel structure with one entrance, located in Minsk. Total area of the structure is 10,000 m². The developer is the biggest state-owned construction enterprise “MAPID”.

The second demonstration site is projected as a ten-storey building with brick partition crosswalls and outer walls made of foam concrete blocks. The construction, total area of which is 9,834 m², will accommodate 120 apartments and have three entrances. The building will be built in Grodno by RUE “Hrodnagrazhdanproekt”.

The third pilot object in Mogilev is presented by a ten-storey, four entrances, residential building for 160 apartments and with a total area of 13,400 m². The developer is the Mogilev Regional Executive Committee.

The design of the buildings will be based on the existing construction norms and thermal standards in force and envisages central water heating system connected to district heating with radiators, thermostatic valves and heat meters in every apartment as standard design parameters. UNDP/GEF project contribution covers energy efficiency measures costs equal to 15% of the basic investments. These measures, inter alia, will include: (i) increased thermal shielding of building envelopes; (ii) door-to-door mechanical supply-and-exhaust ventilation system with exit air heat recovery for heating systems; (iii) solar collectors, heat pumps utilizing soil heat potential through foundation piles, recuperative heat exchangers and heat pumps to utilize wastewater heat potential for hot water supply systems; (iv) roof PV-panels.

As expected the energy consumption for heating of the project buildings will not exceed 25 kWh/m² per year, as well as heat consumption for hot water supply will be cut by at least 40% compared to the existing buildings.

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