

Pilot Project 2. Implementation of energy efficiency measures at Gldani I micro district, block # 16

PROJECT HIGHLIGHTS

This project included implementation of energy efficiency measures in the common spaces of the multi-apartment building at Gldani I micro district, block #16 address in Tbilisi.

The project was funded by the USAID “Addressing Affordability of Utility Services in Urban Housing in Georgia: Energy Efficiency Solutions” Program.

Prior to project implementation, the air temperature in the entrances of the building as well as the internal air temperature in the apartments was very low (-4 °C, when the outdoor temperature was -6 °C). Cold air was constantly blowing through the entrance, thus increasing the heating costs for the residents.

Key Results

- Cost Savings – during a single 4-month heating season the monetary savings from implementation of EE measures in the entrance of the building comprise approximately \$470 for the entire entrance with its households.
- Increased comfort – approximate 3÷4 °C temperature increase in the apartments due to the installation of entrance doors and basement windows.

PROJECT APPROACH

The Energy Efficiency Center (EEC) of Georgia has determined this multi-apartment building at Gldani I micro district, block #16 address in Tbilisi, for implementation of the energy efficiency measures in the building entrance. The main criteria for selecting this building were the typical construction design of the building for the multi-apartment building stock as well as the willingness of the households to participate in the project.

The EE measures included:

- Repairing the wooden window frames and glazing in the building entrance,
- Repairing and thermal insulation of the entrance door and installation of a spring system for keeping the door shut,
- Painting of the entrance door and windows.

The budget for this project comprised \$713.

RESULTS

The EEC conducted a follow-up monitoring of results of implementation of the aforementioned EE measures. According to the monitoring results the internal air temperature in the building entrance as well as in the apartments has increased by around 3÷4 °C.

Besides the temperature increase, there was also a decreased electricity and natural gas consumption reported by the residents, compared with the pre-project months. In order to make the monitoring analysis more fundamental, the EEC also acquired the electricity and natural gas consumption data from the utilities for the households participated in the project for the previous heating season of 2006-2007. According to the analysis of the electricity and natural gas consumption for two heating seasons of 2006-2007 and 2007-2008 there was an aggregate 8% electricity consumption decrease and 17% natural gas consumption decrease in the entrance households. The electricity consumption decrease is not necessarily a result of the implemented

EE measures, since it is not used for heating purposes, but the natural gas consumption decrease can be attributed to the positive effect of the project.

The average aggregate monetized energy savings for the building entrance during the heating season were the following:

- \$95.8 USD/month for natural gas,
- \$22.0 USD/month for electricity.

Thus the average payback for this measure will be around 6 months. Thus, this investment in EE will pay back in two heating seasons.

LESSONS LEARNED

Implementation of small-scale energy-efficiency measures can lead to significant energy and costs savings combined with relatively short payback for some EE measures.