Commercialization of Energy Efficiency Program in Armenia
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PILOT PROJECT BULLETIN

HEATING SYSTEM INSTALLATION PROJECT COMPLETED AT THE THIRD CLINICAL HOSPITAL IN YEREVAN

In May 2008, the USAID-funded Commercialization of Energy Efficiency Program (CEEP), managed by Advanced Engineering Associates International, completed one of its socially-oriented projects implemented in the Third Clinical Hospital. The project was aimed at rehabilitating the heating system of the hospital by fuel switching from electricity to natural gas and providing hospital with safe, affordable and reliable heating. The project was implemented with co-funding of USAID and hospital administration that provided accordingly 54% and 46% of the project total cost.

Two high efficiency boilers installed in the hospital

Located at 40 Dzorapi Street in Yerevan, this hospital is a three-storey building of about 19500 m^3 in volume. The hospital can serve approximately 2900 patients at a time, whereas another 5000 patients can benefit from the outpatient treatment in the consultation center.

One of the radiators installed in the rooms

It is more than a decade that the hospital lacks centralized heating and uses electric coils in winter to meet its heating demand. No need to say that electricity is an expensive source, particularly for medical institutions which usually have scarce budgets. Another negative aspect is that electric heating fails to ensure proper comfort conditions. For energy saving reasons not all premises of the hospital are adequately heated such as, for example, corridors and some rooms. This temperature imbalance doesn't secure necessary comfort conditions which are required in hospitals.

Pilot Project Information:

- USAID Contractor: AEAI Armenia
- Date: September 2007 - April 2008
- Site: Hospital #3, Yerevan

The initial audit of the hospital building showed that it is generally in good shape. Windows and doors were found to be in good condition and properly insulated; therefore no additional weatherization was required.

More specifically, CEEP completed the following activities:

- The new boiler house was constructed and equipped with two high efficiency gas fired boilers with the total capacity of 400 kW for space heating.
- Low pressure gas line was constructed from the main pipeline to the boiler house. Its length is 400 m.
- The internal heating system of the hospital was fully renovated. The radiators - 1195 sections in total - were replaced with new ones.
- The radiators are equipped with regulating valves which allows occupants controlling the inside temperature.

The techno-economic analysis showed positive indicators for this project in terms of energy and cost savings. Based on initial assessment investments will be paid back in 3.5 years. The annual cost savings were estimated to approximately 32700 US dollars. There will be also some reduction of harmful emissions of greenhouse gases (CO_2, SOx, NOx) to the atmosphere due to energy efficiency project implementation.

Other equipment of the boiler house