Methodology

The purpose of the project is the transfer of methodology in the field of building renovation, thanks to the Swiss instrument PETRA, which contains the following stages:

- the diagnosis of existing real estate assets, including the collection of relevant data;
- actual heat balance and forecast;
- analysis and forecasting of operational energy;
- economic analysis and forecasting;
- definition and comparison of refurbishment scenarios.

Description and objectives

The present project has supported Ukrainian stakeholders, interested in adopting a strategy to assess energy efficiency (EE) of housing stock, to use a contextual version of PETRA (Platform for Energy and Technical Retrofit in Architecture - former EPIQR+).

This methodology, currently in use in Switzerland and other European countries, evaluates EE and the energy potential of building, including the energy performance certificate (EPD) that will become mandatory in Ukraine after the final adoption of the law on ‘Energy Efficiency in Buildings’.

Impacts

The quantification of the foreseeable short-term impact of the energy refurbishment of the ten school analyzed in this project is as follows:

- Reduction of annual energy consumption of 5.6 GWh (average improvement of 67%);
- Decrease of annual emissions of 1'125 tons CO₂.

The pay-back of energy-saving interventions is on average 4 years, a particularly short period compared to Swiss standards. This is due in particular to the lower cost of construction and to the supply prices of energy similar to Switzerland.

Conclusions

The assessment of energy efficiency indicators of buildings analyzed with PETRA will estimate the level of energy savings that could be achieved in Ukraine in the case of generalized energy refurbishment. It will also enable the State to plan co-financing of these projects needed to meet Ukraine’s obligations under the Energy Union Accession Agreement, the EU Association Agreement and the Memorandum of Ukraine with the IMF.

Among the possible indirect impacts, we can include the increase in the employment of the population through the development of small businesses in the field of energy efficiency. Considering the size of the interventions to carry out in the near future, the Ukrainian market may be very attractive for both material suppliers and skilled labor.