

## **Experience of Ukraine in the implementation of the Energy Efficiency Programmes in Housing**

**Dr Vyacheslav Tolkovanov,  
Director of the Department for International Cooperation, Investment Development and  
European Integration Issues,  
Ministry of Regional Development and Construction of Ukraine**

In Ukraine, as well as in a majority of European countries, over 40% of primary energy resources are consumed in buildings. This is the largest energy consuming sector in the national economy followed by the industrial and transportation sectors. The substantial difficulties in the reform of the Ukrainian housing sector are considerably related to low energy efficiency in buildings.

Many of the existing buildings in Ukrainian cities are in desolate condition; often roofs are leaking, windows are single glazed or do not close tightly and exterior building surfaces lack thermal insulation to protect against winter cold and summer heat. In addition, many buildings are provided with inefficient and outdated district heating. As a consequence, the energy efficiency of these buildings is very low. Communities and residents alike are confronted with high operating expenses worsened by ever increasing energy costs.

Energy prices are highly subsidized in Ukraine. Subsidized low energy prices discourage households from reducing energy consumption, while public subsidies could be much more sustainably invested in the implementation of energy saving measures.

During the social transformation process within the last two decades, a majority of individual apartments have been privatized. As few of the new owners and landlords have established communal housing associations — so called condominiums — for their residential multifamily buildings, it is very difficult for individual owners to coordinate and finance rehabilitation and implement comprehensive integrated energy efficiency measures for entire buildings. Through the establishment of condominiums and assistance in understanding building operations and maintenance, individual owners are able to coordinate the implementation of comprehensive measures much more effectively.

Energy efficiency concepts are not sufficiently considered and applied in new construction. While official building regulations include energy efficiency standards, they are not consequently enforced during construction.

Thus, the improvement of energy efficiency in existing and new buildings is a central priority of Ukraine's national energy policy goals to achieve more cost effectiveness, to ensure an adequate energy supply and to improve climate protection.

Some Ukrainian municipalities have already implemented important projects in the field of energy efficiency in housing. I will present you the experience of four Ukrainian municipalities — Chernihiv, Ivano-Frankivsk, Myrhorod and Novohrad-Volynskyi. They have been selected through a transparent national two-staged competition. Each city has established a permanent municipal energy efficiency unit.

With our support, each of the four municipalities will develop a municipal energy efficiency plan for the building sector with particular focus on:

- Data collection on energy use and demand in buildings
- Development of a long-term strategy, i.e., energy plan and measures for demand side management
- Development of an action plan for implementation
- Identification of financing and incentive mechanisms

- Implementation of public awareness campaigns
- Setting up a monitoring and reporting system

In addition, each city will prepare one pilot project such as the retrofitting of buildings, the establishment of a municipal advisory centre for condominium associations and private building owners, the conduct of special information campaigns or other activities.

### **Chernihiv**

As the administrative centre of the Chernihivska Oblast in northern Ukraine, the historic city of Chernihiv has a population of approximately 300,000 inhabitants. From a total of 155 public buildings, the largest share is held by 105 educational buildings such as schools, nursery schools and universities. About 70% of residential buildings are multi-family buildings with the remaining 30% as single family houses.

At present, the city administration directs its main efforts on improving the energy management of its municipal buildings through:

- Identification of potential measures to reduce energy consumption and to optimize technical system operation of in buildings;
- Distribution of energy budget funds among different public users, such as schools, hospitals and others and;
- Definition of priorities for investment in energy efficiency measures in buildings.

Therefore, the main focus of cooperation lies in the development of a coherent energy monitoring and control system for the city's municipal buildings.

### **Ivano-Frankivsk**

Ivano-Frankivsk is the administrative centre of the same-named Oblast in south-western Ukraine with a population of approximately 215,000 inhabitants. Most of its public buildings are schools and kindergartens. Roughly 80% of the city's 470 multi-family residential buildings are brick, while about 20% are constructed of prefabricated concrete panels.

The city administration understands the comprehensive refurbishment of its building stock as a long-term process, especially as the public budget is very tight. Therefore, the city is interested in exploring the balance between comparably "simple" cost-effective ways of optimizing its building stock that could deliver valuable results for the other partner cities.

While the city administration has already launched different approaches to improve communal district heating, through the Project it intends to prepare and implement the refurbishment of either a public or a multi-family residential prefabricated concrete panel building as a pilot project.

### **Myrhorod**

Myrhorod is an ancient city in Poltavaska Oblast in central Ukraine. As the administrative centre of the Myrhorodskiy Raion (district), it has a population of approximately 40,000 inhabitants. The main energy problems of the city's building stock, such as very high energy losses and low comfort levels, can be found in its 26 multi-family residential panel buildings.

Since the municipality has no experience in the refurbishment of multi-family panel buildings, Project cooperation focuses on the analysis of energy consumption and costs, the development of technical solutions for energy efficient refurbishment and the introduction and

establishment of integrated planning and tendering procedures to pave the way for comprehensive and holistic energy saving measures. Through cost-benefit calculations, feasible financial concepts will be worked out among various stakeholders including the municipality, apartment owners, credit institutions and potential donors.

During the second phase of the Project, the municipality intends to implement the exemplary refurbishment of a multi-family residential panel building as a pilot project.

### **Novohrad-Volynskyi**

The city of Novohrad-Volynskyi is located in Zhytomyrska Oblast in north central Ukraine. Serving as the administrative centre of the Novohrad-Volynskyi Raion (district), the city has a population of approximately 56,000 inhabitants. Novohrad-Volynskyi focuses on the development of refurbishment solutions for its multi-family residential brick buildings. The city has already prepared a municipal development and energy concept.

In nearly all of the city's multi-family buildings, apartment owners have already established owner associations. This is an ideal precondition for comprehensive energy efficient refurbishment as the individual owners have obtained the right to select contractors, to determine the quality of refurbishment and public services and to appoint and control the cost of these services based on mutual agreement among all members of the owner association. Conflicts of interest between individual owners in associations are generally much fewer than in multi-family buildings without any form of organization.

Through the Cooperation, the municipality will develop the concept and implement a pilot project for the refurbishment of a multi-family residential building and improve the expertise and capacity of the city administration. In addition, schools may play an active role in the dissemination of information on energy efficient user behaviour and raise awareness on the municipality's efforts and approaches.