

Implemented by:



On behalf of:



of the Federal Republic of Germany

Saving energy in the construction sector

The Ukrainian construction sector makes more efficient use of energy, thereby conserving resources and protecting the environment

The challenge: Huge energy consumption in the buildings sector

In comparison with European Union (EU) countries, Ukraine consumes an enormous amount of energy and does not use it very efficiently. Around 40 per cent of the country's energy is consumed in the buildings sector, and the manufacturing and transport sectors are also large consumers. Buildings are frequently in poor condition: supply systems for heating, hot water and electricity are based on outdated technology and lose large amounts of heat when generating and transporting thermal energy. In addition to the obsolete systems, there are insufficient building standards checks, and architects and planning officers lack technical expertise with regard to energy-efficient construction. Investors, owners and users also know little about energy saving potential.

Although construction standards for new builds have been tightened, energy efficiency standards remain well below European levels, even for new buildings. The enormous potential to save energy and costs, the need for a more secure energy supply, and growing pressure to



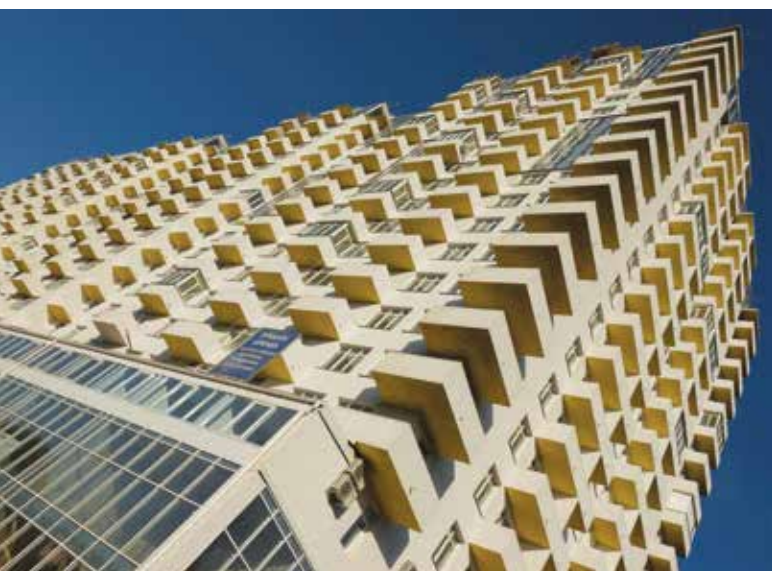
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mitigate the effects of climate change in the long term make increasing energy efficiency in the construction sector one of the key priorities for Ukraine's national energy policy. It is also crucial to the country's economic competitiveness.

Our approach: A role model for energy efficiency measures in a new build

On behalf of the German Federal Ministry for the Environment, Nature Conservation and Nuclear Safety (BMU), GIZ is implementing a pilot project to demonstrate how energy-efficient and environmentally friendly construction can work. A floor in 51,000 m² residential and office complex in the Ukrainian capital Kyiv serves as a model for planning, constructing and operating a building using modern, environmentally friendly technology.

In close cooperation with German consulting firms and engineering companies, Ukrainian investors, planners and building companies have devised innovative energy concepts using environmentally friendly technology, such as solar thermal energy and heat recovery. The high investment costs are recouped through lower energy and operating costs. For example, new roof-mounted energy systems supply heating and hot water systems. Overall, the aim is for the finished building to



Pilot energy-efficient floor in the newly-built building

consume between 30 per cent and 50 per cent less energy than other new builds in Ukraine. Operating staff and users are becoming experts in managing the new technology, and they are to regularly monitor energy consumption in the future.

Throughout the entire construction phase, the pilot project has served as a place of learning for Ukrainian construction experts, political delegations and international organisations. Progress reports, training documentation, analyses and other materials are being made available to the entire Ukrainian construction sector and presented in a travelling exhibition throughout the country. In workshops on specific topics with associations and training venues, experts will continue to boost their knowledge even after the construction work has been completed. This will guarantee that the pilot project has lasting results.



Inspection of new energy systems

Our results: Energy-efficient planning and construction

GIZ advises universities and colleges in order to better integrate energy-efficient planning and construction into architect and engineer training. Training institutions have adapted their courses: in autumn 2012, the Polytechnic Institute of Kyiv's Technical University introduced a new curriculum for energy-efficient construction, and the University of Engineering and Architecture in Kyiv has launched a Master's course, also in energy-efficient construction. The project has helped to expand knowledge of modern energy efficient technology among many construction experts, teachers and students at technical universities and colleges. As a result, more resource-efficient construction technology is being used, and improvements in construction quality have been achieved. Residents have been kept abreast of developments through campaigns.

Advice provided by GIZ has also helped to improve the general situation with regard to energy-efficient construction: the Green Building Council Ukraine, set up in 2011, helps to disseminate information about sustainable construction to investors and planners and implements building certificates. Secondary standards designed to prepare the ground for the introduction of EU building regulations have been adapted and were approved in 2014.



Construction of the model floor



Mykola Makarenko, administrator of the Helios 16 cooperative in the pilot project

"Energy-efficient construction and the careful use of resources are very important for Ukraine. However, most buildings in Ukraine fail to meet modern energy efficiency standards. Professional support from German experts as part of the Energy-Efficient Pilot Project is not only helping

to make homes more comfortable, it is also helping to save money and reduce energy costs. The pilot project is valuable for Ukraine, as it helps people to find out about modern construction processes and technology."

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