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## Energy-efficient thinking in Georgia – still far from European

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With Europe coming closer and energy bills hitting consumers' pockets harshly, energy-efficient housing, a little-known phenomenon for Georgia, and elsewhere in post Soviet countries, is becoming an issue.

Two years ago, Nana, 40, purchased a 2-room apartment in Tbilisi. Even though the apartment's location was very handy, in one of the capital's prestigious districts of Saburtalo, with a nice view and a well-planned room structure, she sold it a year later.

"In winter, when the temperature dropped as low as minus 3, I had to pay several hundreds of GEL for heating but we still had to wear very warm clothes in order not to freeze," she says. "The only warm places in the whole apartment were those very close to the radiator. So we sold that one and moved to a brick apartment with metal-plastic doors and windows which I know help keep the existing temperature."

George Abulashvili, director of Energy Efficiency Centre Georgia, which was set up in 1998, says selling such an apartment is not a way out.

"One can solve the problem this way but again another Georgian will buy the flat," he says. He explains that the lack of legislation and consumer awareness is the problem which hinders the implementation of an energy-efficient policy in Georgia, including in housing.

The problem, in fact, is partly a legacy of the Soviet time, when home insulation efforts were ignored due to the artificially low price on energy. The collapse of the Soviet Union and the emergence of 15 independent republics caused a serious vacuum in the construction sector and the legislation related to it. The central heating system was destroyed which made heating homes in winter a real challenge.

"We are a family of four and much of our incomes go to cover utility bills. I pay an average of 150 GEL for monthly gas bills, plus about 100 GEL for electricity, while our total income is about 1000 GEL," says Tamar, 60.

Experts say that the heat loss is mainly due to low thermo resistance and high air infiltration.

“The architectural and construction solutions of the Soviet era, which included open entrances and poor roofing, allows the loss of much energy,” Abulashvili says.

To heat homes in the capital, only 26,000mg electricity is needed annually. Much of it gets lost because of the poor insulation which equals to 600mg capacity, according to the study by Energy Efficiency Centre.

Metal-plastic windows - which is the double glass package, according to Abulashvili, is seen as part of the European style rather than an insulator. But a properly insulated home can bring much relief to household budgets and consequently save the country's energy resources.

“In modern terms heating costs can be reduced by one third which is an important reserve of energy efficiency,” German citizen Michael Curcic, a PhD student in Physics at Max-Planck-Institute Stuttgart, says in an email interview with GBW.

The issue of energy efficiency came to the forefront after the 1973 oil crisis. The scientists who started researching the issue concluded that management of energy consumption, not increasing production of the resources, provides solutions. Since then energy efficiency became part of planning energy resources and its realization. Energy efficiency has become part of energy security since 2004.

According to international norms, the buildings will not be approved unless heating technical requirements are considered during constructions. For example, walls, roof, ceiling, windows, and doors should be in full compliance with the legislation of specific countries which detail all the measures needed for energy efficiency.

Georgia is a member of the Energy Charter Treaty together with 60 other countries as well as of Kyoto Agreement and an associated member of European Energy Community Treaty. Thus, it is obliged to develop and adopt legislation related to energy efficiency. The membership also obligated Georgia to bring its laws into harmony with the European legislation.

The government reportedly is not working on creating proper legislation. Moreover, while in the Soviet era the construction code was testing the capacity of the buildings with the strength of the wall of the foundations, these norms were removed from the new laws in 2006.

“Presently there is no law in Georgia binding developer companies to introduce energy-efficient measures,” Murad Kharashvili, local expert with the Georgian Energy Efficiency Project (GEEP), told GBW. GEEP is a technical

assistance project which aims to help industrial and residential clients reduce their energy intensity. "If some of them offer this type of service, it is just on their own will", Kharaishvili said.

In contrast, EU countries are stimulating energy efficiency with proper legislation.

"The state helps those who have old houses and subsidizes reconstruction of the old buildings. The new ones are built in full compliance of the new standards and those who do not observe them are fined," explains Mikhail, who went through packaging of his old house with Stiropor insulation materials to save energy.

While in Germany, meeting thermal-technical efficiency is a must for developer and construction companies, Georgian companies are only kind of volunteering to offer such a service.

"Given that the construction code does not impose any such obligations, our houses did not comply with the international norms. Now we are going to introduce these new norms in the construction and this is our voluntary initiative," says Merab Shengelia from Sasco.

But building with energy saving materials is common for market leaders like Axis and Arsi. Nino Oniani, Axis PR manager, says that although this was more intended to have a visual effect, now the company is seriously focused on using the energy saving materials. "For instance, our company has been using natural stones for constructions. This is having a good visual look but it also allows for saving energy."

Sales agents in the construction sector say that customers are not very knowledgeable of the thermo-technical characteristics of the houses they are buying. But when they are offered such a flat or office, then many customers opt for the energy efficient buildings even if they have to pay a 20 percent higher price for it.

Elza, 30, confirms the trend. "After browsing the homes we settled on Arsi which offered quite a different service to me. They are equipping the flat with thermo-technical solutions," she says. "Although the price is higher compared to other options, I know that paying more today will save my expenses tomorrow," she adds.

Given the specifics of Georgia, expectations for those familiar with the issue are really big.

Georgia, namely, is self-sufficient in electric power. The electricity generated by Georgia's stations is enough for its population and the country needs electricity imports only seasonally.

Georgia consumed over 8.146 billion kWh in 2007, while it produced 8.338 billion kWh. According to Ministry of

Energy of Georgia, the same year the country exported 634 million kWh of electricity and imported 434 million kWh. Considering Georgia's potential, the government has voiced its intention to have power exports of around USD 1 billion a year in four to five years in order to generate more revenue for the state's coffers.

The situation is more complicated with the gas supply. Largely dependent on export, Georgia now knows what it means to manipulate energy resources for political ends. Georgia is now dependent on supplies from Azerbaijan and is seeking alternative sources for its energy security.

Most of the buildings in Georgia, especially in the capital, use gas for heating. Under these circumstances experts count much on the energy efficient housing policy and are calling on the government for action.