# ENERGY EFFICIENCY IN BUILDINGS AS ONE OF THE SOLUTIONS FOR ACHIEVING ENERGY SECURITY

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Energy is essential for economic development, food production and global security. According to the UN, the world will need at least 45% more energy by 2030.

It is well known that resources we are using today for the energy production have very negative impact on the planet, especially for the climate change. Alternative resources that are renewable and don't have CO2 emission also have own disadvantages. For example, solar panels are quite expensive, depend on climate, need a lot of place and also there is a big issue with utilization of panels in the end of their life cycle. Wind farmas and hydroelectric power stations are located to far from consumers and transmission looses are very high in these cases. Indeed, in future scientists will solve these problems, but so far we have to deal with them. It means that the best solution would be to combine alternative energy resources and energy saving.

According to the Ukrainian Energy index (UEI-2011) housing sector is the second after industry in terms of energy consumption. It means it has also second large energy saving potential. It is 35% of nationwide energy consumption, which is € 4 billion or 11.4 billion cubic meters of natural gas. In 2013 Energy saving ranking was led by Transcarpathian, Chernigov and Vinnitsa region, the lowest place occupied Rivne, Cherkasy and Lugansk region. (UEI-2013).

According to the EU Commission 60 % of office heat is lost through the building fabric, 22 % from the roof, 9 % from the walls, 26 % from windows, 35% from ventilation and air inflation, 8 % from the floor. This figures shows us that the potential of energy saving is more than 60 %.

Initiatives for sustainable buildings can help bring better living conditions, financial benefits for consumers and create green jobs for construction workers that won't be dislocated. It will give us lower energy bills, comfortable, modern homes and cleaner air. As a result, we have positive ecological - economic effect (win-win strategy).

Buildings in Ukraine can be built or insulating by further developing proven technologies that already exist today. The real challenge is to apply all the necessary technologies and bring them to scale. Another challenge is to work out ways to finance as many of these projects as possible and in recent years there has been a surge of interest in third-party finance for efficiency investments, a surge of interest that is not yet matched by actual transaction volume. The real problem is not a lack of finance per se, but rather a lack of structures that address investor concerns and would enable funds to flow into energy efficiency projects.

Despite the global financial crisis there is no shortage of investors in the world looking for stable low risk returns, and the risk-return profile of energy efficiency projects should be attractive to many investors. (Dr. Steven Fawkes, 2014)

Despite increasing policy attention on energy efficiency everywhere and more money being committed to energy efficiency, deals are being done slowly. From programmes attempting to transform the market in Europe, and experience in North America and Asia it is clear that the fundamental problems are the same everywhere; small project size, insufficient volume to access the bond market, high project development costs, lack of capacity in both the customer base and financial institutions, and insufficient confidence in energy savings.

Markets cannot operate without standartisation and the Investor Confidence Project (ICP), which is supported in the US by the Environmental Defence Fund, is developing and deploying protocols for different building types that set out standards for developing and documenting efficiency projects. It is not designing new technical standards, that lie with the technical standards organisations, but rather to provide a common approach that investors can recognise and have confidence in. It reduces transaction costs, facilitates a portfolio approach, and allows different actors, project developers, insurance companies, investors to do what they do best rather than trying to address the whole problem. The Environmental Defence Fund is now working with European partners to develop an ICP equivalent in Europe - a common approach would facilitate a global market and enable global investors to address efficiency at scale. It is a good chance for Ukraine to take part in this process.

We need to move the focus to be much more about creating real markets that reward exploiting the efficiency resource by actually delivering megawatt-hours saved, rather than having governments specifying expensive processes.

Only by making investment into energy efficiency projects understandable, standardized and reliable we can unlock the required amounts of capital needed to achieve the large potentials for efficiency improvement we know to be there.

We can use an experience of USA in creating real energy efficiency investment market and to adjust it to Ukrainian realities and problems.

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