



BULLETIN

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Improving Energy Efficiency: A Key Task for the Ukrainian Economy

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The struggle to maintain territorial integrity and ensure financial stability have emerged as Ukraine's short-term priorities. Nevertheless, upgrading energy efficiency in relation to the economy seems to be the top goal in the long-term modernisation process, as the power and heating industry generates 50% losses. Significant progress in the area of energy efficiency could contribute to the reduction of energy dependency on Russia, enhance the economy's competitiveness, and improve Ukraine's budget condition. The EU should support Ukraine extensively in improving energy demand-side management in relation to its economy as this influences Europe's own energy security.

Ukraine's dependence on gas supplies from Russia (representing 37% of the energy mix) poses a huge challenge in a time of ongoing crisis between the two countries. Huge energy demand, along with a politically motivated high price of Russian gas, as well as possible gas transfer interruptions, could cause significant harm to Ukraine's economy. Therefore, improving energy efficiency seems to be the best way to reduce dependence on external energy supplies and to modernise Ukraine's economy. The EU and the U.S. emphasise the importance of energy reform on the demand side, while energy sector reform, especially regarding state subsidies, is one of the International Monetary Fund's (IMF) core recommendations for Ukraine's government.

Energy Efficiency Potential. Ukraine is one of most energy intensive economies globally. As the International Energy Agency (IEA) points out, the country's energy intensity indicator (TPES/GDP) amounted to 1.33 TOE (tones of oil equivalent)/\$1000 of GDP in 2011, which was more than nine times higher than the OECD's average (0.14 TOE/\$1000 of GDP) and more than five times more than Poland (0.25 TOE/\$1000 of GDP). Hence, demand-side energy is an area in which there is huge room for improvement, which could translate into better energy security and spur economic growth prospects in the long term. Energy efficiency potential, estimated by the IEA at 20–30% of current energy supply, should be tapped mainly by power and heating sector retrofitting, industry modernisation, and streamlining domestic consumers' energy usage.

The Power and Heating Sector. The Ukrainian power and heating sector is highly inefficient. In 2011, power stations in Ukraine used 63.8 MTOE (million tonnes of oil equivalent), yet produced only 16.8 MTOE of electricity and 14.5 MTOE of heat. The remainder was wasted, total power losses in the energy production process amounting to 32.5 MTOE (more than 50%). Although the whole sector requires a major overhaul aimed at reducing power and heat generation costs, coal combustion efficiency needs improvement in particular.

The most significant challenge in this area is posed by the ageing infrastructure. A large number of active boilers are outdated, as they have operated for more than 25–30 years without refurbishment. Hence, their technical parameters are much lower than modern units. Furthermore, about 80% of thermal power stations are obsolete, which contributes to the high level of energy required to generate power (35% higher than in OECD countries). This generates additional costs and decreases the level of profitability. Additionally, 60% of power distribution companies' assets are worn out, thus losses during transmission are twice that of the OECD. Higher energy usage could also entail a greater burden on power grids and pose a threat to supply security.

Moreover, the power sector has been hurt by low energy tariffs (mainly for domestic consumers), which result in financial losses and discourage enhancing energy efficiency. Reduction of subsidies, which amounted to more than

\$10 billion in 2012, could improve the condition of public finances and underpin power companies' investment abilities. In this context, the ongoing energy tariff reform in Ukraine is a vital element of the industry's recovery. The whole process will be cost-intensive, as the Ukrainian authorities estimate that investment required in the electricity and heat sector alone could reach UAH 720 billion (about €45 billion) by 2030.

Industry. In 2012, industry used 24.8 MTOE (34% of the country's total energy consumption), and it was the largest single energy consumer in Ukraine. Consumption is dominated by energy-intensive industries, such as the steel, chemical and mining sectors. Many of them, such as the chemical sector, are highly dependent on external energy supplies, mainly gas imported from Russia. Moreover, energy intensity means that Ukrainian firms compete poorly on the world markets, as they have to use three times more energy to reach the same output as companies from the EU. This affects the financial condition of business operations negatively, and hampers the setting up new companies and job creation.

This low level of competitiveness is a matter of relatively high energy prices for industry, as well as inefficient production processes, lack of energy management systems and systematic energy audits, particularly in small and medium-sized companies. Moreover, despite some tax exemptions for local companies, financial incentives for the implementation of energy efficiency solutions are still insufficient. Hence, from the companies' perspectives, costs regarding adoption of such solutions are relatively high and exceed the anticipated benefits. Moreover, depending on Russian gas supplies and the possibility of frequent price changes means that Ukrainian firms are also more exposed to variable energy costs.

Domestic Consumers. This group used 23.4 MTOE in 2012 (32% of total energy consumption), and ranked as the second biggest consumer in the country. The IEA points to the domestic sector as one of the areas where energy savings could be most considerable.

Currently, gas combustion accounts for nearly 60% of energy consumed by households, and, along with district heating systems, which furnish about 55% of households, have benefitted from state subsidies (households pay only 20% of imported gas price). The state's financial support, combined with a lack of effective energy consumption metering systems, give no incentives to domestic consumers to use energy efficiently. It also poses serious barriers to necessary investment by power companies, as their incomes are below the ultimate costs.

There is also a lack of widespread knowledge among householders regarding the benefits of considered energy usage, and technical support for energy efficiency efforts is lacking. Ukraine suffers from a lack of modern know-how and professional staff in this area. The other challenge is the enforcement of existing regulations. For instance, although the building energy code has established standards for energy usage in new buildings since 2007, its implementation has been crippled due to insufficient technical measures and funds. Furthermore, around 80% of existing buildings require retrofits in order to meet higher energy efficiency standards.

Crucial Financial and Regulation Reforms. Improvement of energy efficiency is of the pressing challenges for the Ukrainian economy if it wants to lessen its dependence on energy supplies from Russia and reduce its energy bill. Hence, improving energy efficiency in manifold areas should be the focal point of a comprehensive economic modernisation strategy. Although there is consensus on the main reforms required, there are questions concerning the country's capacity to implement them, the pace and order of actions, and sources of financing.

Therefore, it is important to attract private entities to participate to some extent (such as through public private partnerships) in the investments required for, amongst other things, upgrading infrastructure. This could be achieved by creating a favourable business climate and competitive energy market with clear regulations, modelled on EU standards. In this context, full implementation of the Energy Community Treaty (of which Ukraine has been a part since 2011), as well as of EU DCFTA provisions, is crucial. Furthermore, the long-term benefits for investors stemming from making an early entrance into the Ukrainian market should be highlighted.

Energy tariff reform should be implemented gradually, along with proper financial support for the most vulnerable groups. In addition, more attractive financial and fiscal incentives concerning building retrofits and the adoption of efficient technologies, such as metering systems, should be ensured. This ought to be connected with wider access to capital markets, including banks loans guaranteed by state budgets. Moreover, enforcement of existing regulations, such as the building code, should be improved.

Institutional Changes and EU Support. Close cooperation between central and local institutions in collecting data and forging energy policy is vital to increase the economy's energy efficiency. Efforts in this area, currently scattered among several ministries and agencies, should be coordinated by one institution. Supervision of its activity should be supported by international donors, with the EU among them, to avoid corruption and wastefulness. Moreover, extensive public campaigns should be conducted, in order to raise awareness of the benefits of efficient energy usage.

The EU, along with other international organisations (such as the IMF, the World Bank and the European Investment Bank), could extend ongoing energy efficiency projects in Ukraine, kick-start new initiatives, and contribute to their long term financing, through, for example, the augmented Eastern Partnership Neighbourhood Investment Instrument. Furthermore, the EU Member States, especially Poland and other post-communist countries, can share with Ukraine their experience in transforming energy intensive economies, as well as providing know-how and technical assistance.