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ENERGY PRODUCTION, CONSUMPTION AND THEIR PRICES IN POLAND,
UKRAINE AND GERMANY AGAINST THE BACKGROUND
OF THE EUROPEAN UNION

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Energy is essential for the social development and economic growth of each country. Using energy provides numerous social and economic benefits, but its production does have negative effects on the environment and climate. Besides the problem of significant increases in crude oil and natural gas prices for the European energy system, there are also a number of new challenges such as climate change, security of the energy supply and the cost-competitiveness of the electricity [1]. Fig. 1 shows the primary energy consumption in Poland, Germany and Ukraine in 2011 versus Gross Domestic Products (GDP) based on purchasing-power-parity (PPP) per capita [2, 3]. The average consumption of primary energy per capita in 2011, in the EU-27, was about 109.5 kWh/day/person.

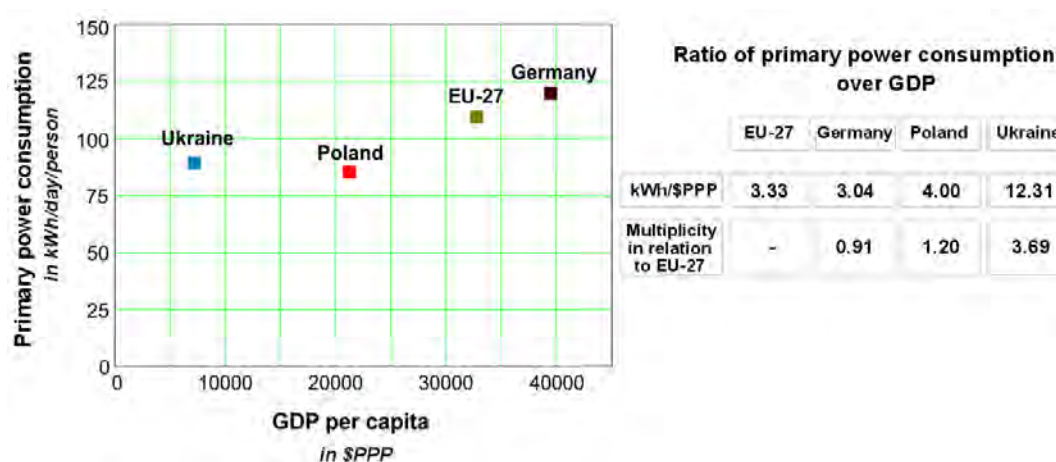


Fig.1. Primary power consumption per capita, versus GDP (Gross Domestic Products) per capita, in purchasing-power-parity US dollars (\$PPP) according to statistical data from 2011 [1, 2].

The daily primary energy consumption per capita in Germany was about 119.8 kWh/day/person. The national primary energy consumption per capita in Poland was about 85.2 kWh/day/person and it was lower than in Ukraine (89.2 kWh/day/person). The ratio of primary energy intensity of the Ukrainian economy, calculated in relation to GDP based on purchasing-power-parity, according to statistical data from 2011, was about 3.69 times higher compared to the EU-27. For Poland it was 1.2 times higher. Further economic development in Poland and Ukraine will be accompanied by growth of electricity consumption. It will be connected with the growth of raw energy material consumption.

The major factor that determines the intensity of limited energy resources consumption has become the price. Energy prices in Ukraine are much lower than the average for the EU-27. The price structure of electricity, gas fuels and district heating in Ukraine is due to large-scale cross-subsidization which is used in Ukraine as a tool of social policy [4].

References

1. D. MacKay, Sustainable energy – without the hot air, UIT Cambridge Ltd., 2009.
2. BP Statistical Review of World Energy June 2012, <http://www.bp.com/>.
3. Database, Word Bank, <http://data.worldbank.org/indicator/>.
4. P. Hi-chun, Towards Cost-reflective Energy Pricing in Ukraine, International Association for Energy Economics, First quarter 2011, p.15-18.