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## **ENERGY SAVING IN MACHINE BUILDING: ANALYSIS AND ESTIMATION OF INSTITUTIONAL ENVIRONMENT**

The purpose of the article: analysis and estimation of institutional environment for energy saving on macro-, micro-, industrial and regional levels.

Information base: normative directives of government agencies in sphere of energy saving (State Committee of Statistics, State Agency of Energy effectiveness and Energy saving of Ukraine), data of International Energy Agency (IEA), information of separate machine-building enterprises, publications in scientific journals.

In article the energy-output ratio, indexes of energy consuming on the national, regional, engineering complex and separate enterprises were analyzed. Also the dynamics of indexes of energy intensity and energy dependency was analyzed. It was pointed out, that in Ukraine the energy-output ratio is 2.5 times greater, than in well-developed countries of Europe and Northern America. Due to the dynamics of energy intensity index, Ukraine consume more than 4 time greater volume of energy resources, than average European level. The level of energy dependency in Ukraine is the same as average European level and has a tendency of reducing, but this index is characterized by absence of diversification of energy supplier's sources, especially for oil, natural gas and nuclear fuel: the level of oil dependency is 88-90%, natural gas – 70-75 %. Only one non-imported energy source is coal – storages of it consists of  $117,1 \cdot 10^9$  tons.

Dynamics of energy consuming in machine-building Ukrainian industry were analyzed. Annual volume of energy consumption in industry is equal to 4.5-5 mln t.o.e., although the potential of energy saving consists of 25-30% of such total annual volume. So, analysis of energy consuming in machine-building industry

demonstrates, that such industry has significant reserves at area of increasing of effectiveness of energy consuming.

Also the attention was paid to the regional programs of energy saving in Kharkiv district. According to the regional Program of energy saving for 2010-2014, 2056 energy saving projects were realized in Kharkov region. The total volume of investments on energy saving projects consists of 195 mln. grv., and the economy in energy consumption as a result of such projects is equal 300,000 tons of oil equivalent (t.o.e.). But the results would be more significant in the case of realizing all projects, that were planned – so, the problem of lack of investments for energy saving projects is very actual.

The need of coordination mechanism of energy saving management was pointed out. The level of investment, need to reduce the energy consumption on 1 unit is (calculated as total volume of investing in energy saving projects divided to the volume of annual economy of energy resources) is enough high, so the potential of low cost energy saving and improving energy effectiveness events is already exhausted. That is why further development needs more expensive, long-term investments. In such cases enterprises will make a decisions about realizing energy saving projects on comparing total sum of investments with the price of energy sources, the volume of consumption it want to reduce.

Uncertainty of market stimulus forces to activate attempts of improvement of institutional environment in the sphere of energy saving and effectiveness towards changing approaches to energy consuming from simple reducing of energy consuming to energy-saving effective consuming. Conclusions about needs of creation of effective government-private institutes of partnership in energy saving sphere were made.

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