



Секция 1. ИНФОРМАЦИОННЫЕ СИСТЕМЫ И ТЕХНОЛОГИИ:
ОПЫТ СОЗДАНИЯ, МОДЕЛИ, ИНСТРУМЕНТЫ, ПРОБЛЕМЫ

COMPARATIVE ANALYSIS OF ENERGY CONSUMPTION IN UKRAINE AND
POLAND

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The level of energy consumption per head is certain characteristics of population's living order in every country all over the world. Analysis of the current level of energy carriers in each country is the basic stage on the way reaching wishful degree of energy efficiency of social production.

Availability of statistic data about volumes of consumption different kinds of energy in Ukraine and Poland during many years is base for doing their comparative analysis. It is accepted to consider consumption next kinds traditional energy sources: coal, crude oil (concluding gas condensate), natural gas, petrol, diesel, fuel oil. In order secondary form of energy usage volumes electrical energy are considered.

In order of consumption volumes electrical energy Ukraine in community with Poland, Hungary, Russia, Romania and Turkey included in the cluster with representative consumption electrical energy per head within 2607 ± 525 kWt×h. Although the proportion initial energy sources kinds for electrical energy production in Ukraine and Poland are different.

For complex analysis of power consumption character are doing comparison of the volumes of consumption different kinds of energy inside every country, comparison of the volumes of consumption similar kinds of energy resources and also generalized volumes of consumption all energy kinds in both countries.

For fixed time date methods of interval mathematics [1] let to set lower and top borders for every operation factors in such way that extreme relationship every its pair describe real character intercommunications between them.

Availability actual volumes of power consumption in different time moments let to apply methods of time series analysis [2] for their more detail investigation in future. Sufficient quantity meanings of every energy consumption signification through the same time intervals let to determine its average change equation, to determine moments of the biggest matches and discrepancies real and simulated meanings, to find characterized periodical repetitions, to predict behavior signification in future with necessity.

Application specified mathematical methods with using modern specialized program products let to automized processes of the mathematical models construction and analysis of energy consumption both countries.

Results of this investigation show instability behavior energy consumption significations in last years, especially in Ukraine.

1. Shariy S.P. Finite interval analysis // Monograph. Computational technologies institute of Siberian Department of Russian Academy of Sciences. Novosibirsk: Publishing «XYZ», 2010. 2. Kendal M. Time series. – Moscow: Financial and Statistics Publishing, 1981.