

Inter-sector, inter-region analysis of interaction between national economy as a whole and its energy production segment

Topic: Input-output analysis for policy making 1

Author: Nikita Ivanovich Suslov

The paper discusses an approach to both the inter-sector and the inter-region analysis of interaction between national economy as a whole and its energy production segment which is projected for the long run time period. It is based on optimization multi-sector multi-region model with natural block of energy production, processing and transportation (OMMM-Energy). This model, in turn, is an advanced version of a model suggested and developed by Alexander Granberg - famous soviet and Russian economist who has made a visible contribution into the theory of regional structure analysis. At present time this version combines products of 45 economic sectors including 8 energy ones (rough oil, gas and coal, two kinds of petroleum products, coal processing, electricity and heat) and 6 macro-regions of Russian economy; it is a composition of two sub-models for 2 time periods: 2008-2020 and 2021-2030. The main deserve of OMMM-Energy is combination of different approaches – input-output, inter-region and the one of energy balances. By this reason this model makes it feasible to evaluate complex consequences and efficiency of realization of policy measures in the sphere of energy production, processing and consumption. Previously it was applied to treat the following problems:

- evaluation of the economic consequence of concentration of energy-intensive production in the South Siberia areas,
- evaluation of the economic consequence of gasification in the regions of the South Siberia,
- evaluation of the economic consequence of more intensive development of the nuclear energy in national economy,
- evaluation of the economic consequence of reduction of energy intensity of production in national economy,
- evaluation of the economic consequence of the usage spreading of heat pumps.