

RESEARCH OF INTERRELATION OF POWER- INVESTMENT ATTRACTIVENESS OF THE TERRITORIES WITH ECONOMIC AND POWER SECURITY¹

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В статье приведены результаты разработки методического подхода к оценке энерго-инвестиционной привлекательности территорий с позиции обеспечения их экономической и энергетической безопасности.

The problem of assessment of Power-Investment Attractiveness (PIA) of the territories since certain time has acquired great relevance for Russia. The process of creation of market environment after the liquidation of the before-prevailing centralized system of economy administration is accompanied with great difficulties. These difficulties are explained by the break down of economic relations between enterprises, by the absence of experience of functioning in the market environment, by unpreparedness of the legislation that regulates activity of companies. The process is extremely difficult in power industry referring to natural monopolies, especially in electric power industry. All this has resulted in the appearance of numerous threats to economic and power security for the Russian territory.

One of the main threats is a sudden decrease of investment activity of the emerged companies in the sphere of development of fuel and power systems on the territories. That is why elaboration of the means of assessment of PIA of the territories must encourage activation of the investment process in their power systems.

PIA should be considered from two points of view, namely: from the point of view of an entrepreneur and from the point of view of ensuring the stability of development of the territories and their economic and energy supply security. Solution of the first problem must be done according to the criteria of ensuring economic and financial efficiency of the respective business. Solution of the second problem is done from the position of state and municipal bodies of territory management that are interested in attracting the capital to their

territory and in creation of favourable conditions for it. These, above all, must be the conditions of ensuring economic and energy supply security of the territories. Solution of the second problem presents great interest for private business, too, because it enables the latter to find out the territories where such conditions are the most favourable. This article considers the second of the named problems.

Also, the two types of PIA assessment tasks may be presented, namely: that of absolute power-investment attractiveness and of comparative one. While solving the first-type PIA task the criteria of economic and financial efficiency must be applied, which corresponds to the direct aims of private business. Solution of the second-type task corresponds more to the direct aims of the management bodies striving to increase economic and energy supply security of their territories. This article considers the second-type task. It seems, and the research carried out confirmed it, that differentiation of regions on the basis of their power-investment attractiveness is quite radical as a result of inequality of territorial distribution of fuel and power resources, production forces and environmental conditions characteristic of Russia.

Since in fuel and power industries both at present and in the observable future the projects, as a rule, are implemented through joint participation of state and private capital, the considered task requires a complex consideration of all the criteria: economic and financial efficiency, environmental protection, efficient use of fuel and power resources, feasibility, conditions of extension of technological inferiority, etc. As a matter of fact, in the process of solving the task recording of economic and energy supply security and of stable development of the regions is regarded as

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of paramount importance. In these conditions the most efficient seems to be the application of indicative analysis which turned out to be successful in researching economic and energy supply safety [1].

Power-investment attractiveness of a territory is a specific property of the territory that belongs to its most general characteristics, namely, to investment attractiveness.

Investment attractiveness of the territory is advisable to be considered as an integral rate consisting of the following two components: *investment potential* that is formed under the influence of the factors that positively influence on the investment climate on the territory; *investment territorial risks*, i.e. those factors which restrict the investment potential of the territory and influence negatively on the investment attractiveness of the territory.

One of the main parts of the investment attractiveness is power-investment attractiveness of the territory. It is natural that its realization is encouraged by the situation of the general investment of the territory as the one creating a favourable background for attracting business to the territory.

As power-investment attractiveness of the territory should be considered as the state of economy, social climate and power industry of the territory that creates favourable conditions for attracting of investments to power industry business of one or another kind on the territory.

At that, the types of business may be various. It can be a internal (proper) power industry business and external power industry business.

Such analysis enables to ensure a complex recording of all the factors both creating the potential for power-investment attractiveness and posing risks restricting it. Both the potential and the risks are subdivided into three groups: investment ones, those connected with socio-economic and environmental conditions of the territory on which the fuel and power industry business is considered, general rates of energy development of the territory and specific rates of the considered type of business. While assessing PIA for the first group of indicators it is advisable to use a number of economic security indicators, for the second group – of energy supply security indicators.

The analysis of the structure of economic security indicative rates considered as a background where the business processes of the company take place shows that the method of diagnosing of economic security directed to revealing the threats to the security leads to the

conclusion that almost all the economic security indicative rates should be considered from the point of view of the investment risk factors. In other words, the normal state of the territory based on the given indicative rate can be estimated as the one creating a favourable investment background; and the more critical the state is, the bigger the degree of risk for the implementation of investment measures is.

Energy supply security indicative rates have a slightly different interpretation.

Energy supply security indicators are expedient to be subdivided into three groups. The first group is formed of indicative rates the increasing value of which is the power-investment risk growth factor; the second one – of those the increasing value of which, on the contrary, results in the PIA growth; and the rates of the third group do not influence the level of PIA.

Moreover, it is necessary to mark out specific power-investment rates not connected directly with security indicative rates but characterizing efficiency and, *visa versa*, expenses of one or another type of power industry business on the territory. Different types of power industry business enable to determine the following types of power-investment attractiveness of the regions:

1. Attractiveness of fuel supplies to the territory: boiler and furnace fuel (coal, gas, residual fuel) and motor fuel.

2. Attractiveness of investment in fuel producing base development on the territory (coal producing, oil producing, gas producing).

3. Attractiveness of investment in fuel refining complex (coal refinement, oil and gas refinement).

4. Attractiveness of investment in gas and (or) petroleum products transportation development on the territory.

5. Attractiveness of investment in heat supply systems development on the territory (boiler-houses, thermal power stations).

6. Attractiveness of investment in power generating facilities development on the territory (electric power stations construction).

7. Attractiveness of investment in electric power networks development on the territory.

On the basis of all aforesaid the assessment methodology of comparative power-investment attractiveness of the territories including **the following stages** is elaborated: formation of the initial system of rates; determination of the elements of the matrixes of investment potential, power-investment potential, investment risk and power-investment risk;

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reduction of the rates to dimensionless indicative form; calculation of private integral constituents of power-investment attractiveness (basic calculation); determination of the total integral rate of power-investment attractiveness of the territories (basic calculation); determination of the coefficients of importance of indicative rates in the groups; calculation of weight coefficients of indicative rates; calculation of private integral constituents of power-investment attractiveness (calculation with account of coefficients of importance and weight coefficients); determination of the total integral rate of power-investment attractiveness of the territories (calculation with account of weight coefficients); analysis of results and recommendations elaboration.

The main idea of the methodology is the formation of the rates characterizing power-investment attractiveness of the territory and their comparison with the respective basic indicators. As a rule, the respective mean-Russian values of indicators (except for the used security indicative rates mentioned above) are taken as the basic rates.

The Integral rate of Power-Investment Attractiveness ($IPIA_i$) of the territories is determined:

$$IPIA_i = \alpha_{IPI} \cdot IPIP_i + \alpha_{IPR} \cdot IPIR_i \quad (1)$$

where $IPIP_i$ – Integral Power-Investment Potential;

$IPIR_i$ – Integral Power-Investment Risk.

In the formula (1) α stands for the respective weight coefficients of the integral rates.

As a result of application of this methodology the calculations were made on the assessment of comparative power-investment attractiveness of the territories of 17 regions of Russia covering the vast zone from the Volga to Central Siberia.

The proposed methodology, hence, enables to determine the most and the least power-investment attractive territories and the factors of increasing their attractiveness. The elaborated approach can serve a good base for forecasting economic and energetic development of the regions, for increasing of their power-investment attractiveness, of economic and power security.

BIBLIOGRAPHIA

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