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## **INVESTMENTS AND INNOVATIONS IN THE SPHERE OF CONTROL AND MANAGEMENT OF POWER INDUSTRY DEVELOPMENT**

*The paper deals with the current state of investments and innovations in the power engineering sector. The ways for solving the problem of creditor's liability in fuel-energy complex are suggested as well as for the creation of investment attractiveness of the power industry.*

**Keywords:** *fuel-energy complex, investments, creditor debts.*

### **Introduction and problem statement**

Main task of the industrial innovative policy under market conditions is the formation of the competitive production potential at home and external markets.

Ukrainian economy has been preserving quite weighty potential. Beginning from January of 2006 there has been a tendency towards the growth of gross domestic product and more active growth of investments – the main reason for the liveliness of economy. The total of the credits and loans, received by the enterprises of Ukraine from investors, made \$1014,9 mln. (according to the data of 01.04.2006). Renewal of the state capital expenditures also contributed to the fast growth of investments.

Further solution of the following key problems must improve considerably investing attractiveness of the national economy sectors: predictability and stability of the legal base; improvement of the taxation system; strengthening of the financial sector; continuation of the regulative reform and liberalization of business activities; liberalization of the flow of goods across the border and reduction of trade barriers; improvement of the corporate management and protection of stockholders' rights; distinct position of the State concerning the rights to movable and immovable property and land recourses; strategic planning of the measures on further transformation of the property and growth of the private sector participation in all branches of the economy; harmonization of the legislation of Ukraine with main principles, norms and regulations of the home markets of EU countries [1].

Realization of the above-mentioned measures is planned to be in the framework of the fulfillment of "Loan for the development support" project terms of the International Bank for Reconstruction and Development..

It is quite evident that the most important component of the intention to solve the tasks of financial provision for the development of power industry of Ukraine, the condition for turning of this necessity into reality is the obligatoriness of careful, legally defined and organizationally consistent formation of investing attractiveness of Ukraine as a whole and of its electric power industry, as a basic branch of economy, in particular.

### **Presentation of the main material**

During the period of 2005 – 2006 further financial recovery of the fuel-power complex branches was observed.

The Laws of Ukraine have been passed, that:

– established special mechanisms for offset of debts of the fuel-power complex (FPC), caused by incomplete payments for the consumed energy carriers (The Law of Ukraine №2711 from 23.06.2005); mutual accounts were conducted on the offset and depreciation of debts of FPC enterprises for the total sum of more than \$270 mln. and also in the period from 01.01.2005 till 01.07. 2006 offset of the debts of power-supply enterprises to wholesale suppliers was conducted for

the sum of about \$297,0 mln;

- criminal responsibility for stealing electric power was established (the Law of Ukraine № 2598 from 31.05.2005);

- basic principles of the activities in the heat supply sphere were defined. They are connected with heat power generation, transporting and consumption (The Law of Ukraine № 2633 from 02.06.2005).

Amendments to the Law of Ukraine “About electric power industry” were adopted (18.01.2005, № 2362-IV) for taking measures as to the competitive development of the electric power wholesale market and exclusion of the administrative interference into the market operation. The amendments provide for proportional payments for the electric power released into the market and changes in the electric power wholesale market (PWM) regulations aimed at increasing market competition.

In November of 2007 the Cabinet of Ministers of Ukraine took the decision about liberalization of the electric power market. In the nearest future electricity producers will be able to do without the services of “Energoynok” state enterprise and to switch to the direct bilateral contracts.

On the instruction of the Government the Ministry of fuel-power industry and National Commission for electric power industry regulation (NCRE) the exchange for electric power sales is to be created by 2011, and by the year of 2015 bilateral agreements must come into practice.

Within the year of 2008 NCRE must approve regulations of market operation, registration and account of bilateral agreements, balancing of electric energy volumes, ensuring contract guaranties and commercial account of electric energy. It is also planned to adopt the Code of the backbone and distributive networks of Ukraine. Physical bodies will buy electricity in regional power administrations as they do today. Sergey Titenko, ex-head of NCRE and from January of 2008 – the head of “Kyivenergo”, says that power market reform provides for gradual transition from the services of “Energoynok” state enterprise to the sales of the produced power to consumers on the direct contract basis. He says that according to the approved documents, each power-generating company will be able to sell directly 5% of the generated current from the year of 2009. In 2010 50% of power could be sold by direct contracts and by 2011 the market is to be fully liberalized [2].

Project of the strategy for harmonization of domestic power market of Ukraine with that of EU countries was prepared. This document provides for the development of the mechanism of the legislation gradual adaptation to the laws, norms and regulations of EU market as well as defining the guidelines of further investment development in this field.

According to the latest research “Investment barriers in Ukraine”, prepared by European business association (EBA), growth of foreign investments in Ukraine is hampered by six main factors: bureaucracy, bulky licensing system, indefiniteness in the sphere of rights to real estate and land, insufficient independence of the judicial system, instability of legislation [3].

Let's compare investments structure in electric power industry of Russia with that of Ukraine. Fig. 1 presents the diagram of the investments structure in Russia.

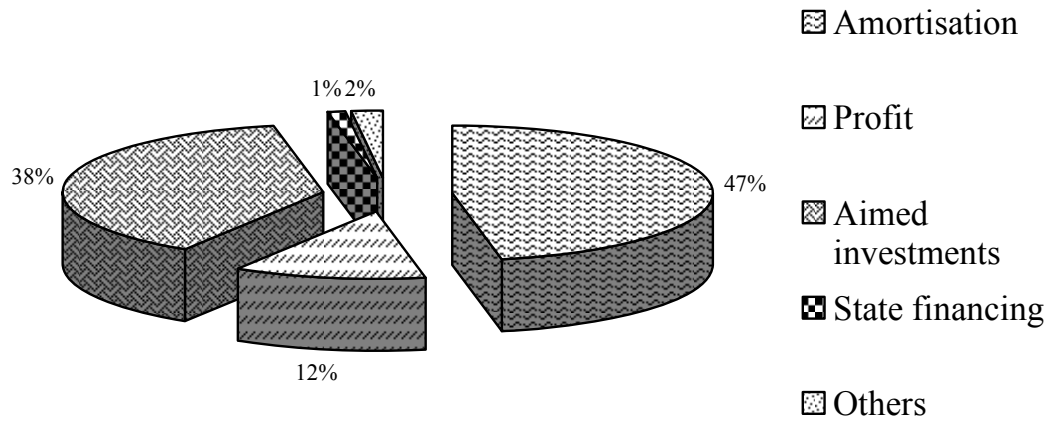


Fig. 1. Structure of investments into the electric power industry of Russia

Fi.2 shows analogous diagram for the electric power industry of Ukraine. From this diagram it is evident that there is no state financing in the electric power industry of Ukraine. Amortization made the basis for the capital funds renewal. It should be taken into account that in 1990s inflation practically depreciated all capital funds and, therefore, amortization allocations were extremely low. Thus, for almost ten years there was no renewal of the equipment, which resulted in extremely complicated situation that can be evaluated using the data presented in table 1.

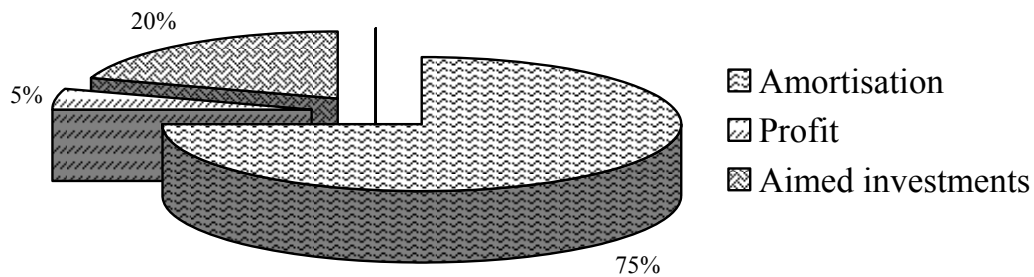


Fig. 2. Structure of investments into the electric power industry of Ukraine

Table 1

Age structure of the production equipment of the electric power industry (in %)

Equipment age at the beginning of the year, years	1996	2001	2007
under 5	10,1	4,7	4,9
6 – 10	29,8	10,6	9,8
11 – 15	21,9	25,5	21,3
16 – 20	15,0	21,0	26,4
Above 20	23,2	38,2	37,6
Average age	14,25	18,7	19,7

It is seen from the table that equipment is growing obsolete. Ever more recourses are required for its renewal. Without sufficiently high investments it is practically impossible to solve this problem.

Today innovation expenditures make 11,4 % of the electric power transmission costs while in 1980s this figure was 70%. In general, the value of all investment components (fig. 2) for renewal of the distributive networks equipment is about 1 kop. From each kilowatt-hour of electric power sold to the consumer. In order to improve the situation in the distributive networks of Ukraine, the amount of innovation expenditures must be increased 6-7 times.

Qualified and professional creation of the system of legislative provision for the efficiency of investments and innovations is required. Definiteness of the game rules in the electric power industry is especially important because it is vital for the society and for the development of its economy. Power industry is a very inert field, investments into the power assets are long-term investments with long turn-over period (about 30-50 years). So strategic investors will come only if:

A. They see general stability in the country and have definite guarantees of fairness of the State. For this it is necessary to have effective judicial system, consistently growing economy and to fight the corruption.

B. The investor must have guarantees of receiving the conditioned profit on the capital invested. It goes about drop investments into power enterprises on the principles of project financing. Such projects are realized on the basis of fixed-price contracts for electric power take-off by consumers. (Power Purchase Agreement). They are profitable for an investor, for a definite power project, for a consumer and also for the State.

C. Strategic investors understand how the market is built, its game rules and how a product price is formed. Here it goes not about regular and efficient structure of the market and its error-free operation. For a foreign investor to come, the market should be understandable to a foreigner who got used to a certain market models of his native country as well as to definite game rules.

An investor is ready to invest money when capital turnover period does not exceed values determined by the expression

$$T < \frac{1}{E},$$

where T – capital investments turnover period; E – discount coefficient assumed to be equal to the bank interest in the world economy ( $E = 0,1 \dots 0,15$ ).

The existing capital turnover period cannot satisfy investors. Its reduction can be achieved by increasing profitableness of the power production:

$$R = \frac{P}{K} \times 100\%,$$

where R – profitableness of production; P – net profit; K – investment of capital.

Profitableness can be raised through the establishment of substantiated and increased tariffs as well as reduction of the power production and transmission costs. Unfortunately, electric power production costs have been constantly increasing due to increasing prices for the fuel for both heat power and atomic power stations. For the reduction of energy transmission costs it is important to reduce the amount of losses in the course of its transportation. Today they are especially big in the distributive networks and attention should be primarily paid to their reduction.

There can be the following forms of supporting investors and enterprises that implement both foreign and home investment projects: giving state guarantees as to the budget for investment projects; reduction of the interest or canceling taxes that are to be included into budgets (canceling taxation of the part of profit intended for investment into the main capital, tax on additional cost etc.); giving subsidies at the expense of the budget in order to compensate a part of the interest on bank credits, received for the implementation of investment project; subsidies for leasing payments

or investment taxation credits; target budget allocations for financing investment projects or freeing investment activity from rent payments for land sites and premises that belong to the State property, etc. Guaranteed contracts, participation in the capital, long-term pricing and many other measures can be used as attraction tools.

In world practice rich positive experience has been accumulated in this sphere, the main thing being real desire of its application.

### Conclusions and generalizations

For solving the problem of creditor's liabilities in fuel-power complex and for creation of the investment and innovative attractiveness of the power engineering field it is necessary:

- to make the transition from the existing PWM model to the full-scale competitive electric power market – the market of bilateral contracts with balancing market that provides correlation between supply and demand for extra-contract amounts of electric power;
- to make improvements as to pricing issues (increasing tariffs for all categories of consumers, canceling price benefits, if they do not have definite financing source, and retrospective compensation of the losses of power-supply companies due to the existence of such tariffs);
- to maintain positive dynamics in the payments for the consumed electric and heat power as well as making amendments to the Law of Ukraine “About drinking water and its supply” (this will make it possible to achieve maximally full payments of water supply and water drainage enterprises for the electric energy);
- to cancel cross-subsidizing of certain categories of consumers at the expense of others;
- to eliminate barriers to the process of reforming property relations, which will promote more active privatization processes in power industry;
- to reduce turnover period of the capital investments.

There is no new fundamental knowledge about the essence, purpose and structure of power industry, the laws and special features of its development at the beginning of the XXI century.

The above-mentioned knowledge is required for the creation of a new world outlook and methodical foundations of the policy in the power industry field as well as for formation of the system for management of power industry as a whole and preparation of the corresponding specialists.

To implement these measures, investments of innovative and intellectual nature are required.

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