Formation of the priority directions of innovative strategic energy management

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Abstract. Article is devoted to the matter of the ensuring long-term potential of dynamic growth of the Russian economy, its sustainable development in which the special role is assigned to the energy industry. Inclusion of the stage of management of the human capital, which becomes one of priority levers in the field of management of the industrial enterprises, into the in structure of strategy of planning subsequently represents one of innovative steps at the heart of power management. In work the algorithm of the development of the key performance indicators of the human capital on the basis of stage-by-stage problem definition of energy saving, search of the centers of responsibility in energy consumption and quality control of the involved productions is offered in the article. The application of the offered innovative algorithm might promote the formation of high culture of energy saving and the decrease in the level of resistance to organizational changes.

1. Introduction
The majority of research of the Russian authors in the field of energy management is devoted to the matters of studying of regional power supply systems and large monopolies and managements of overall performance of the energy companies. Less works are devoted to the matters of energy saving and management of energy efficiency at the industrial enterprises from the point of view of the creation of systems of management. One of the perspective directions in this area (along with management of power infrastructure) is management of innovative activity and motivation of personnel for energy saving. Works of domestic and foreign authors: B.N. Abramovich, Yu.N. Sychev, Yu.B. Klyuev, V.A. Koksharov, J. Kals, D. Hyde, etc. are divoted to the use of energy resources and to the problems of energy efficient functioning of the production systems.

The sphere of strategic power management remains poorly studied as the majority of issues is resolved within the international standard on the systems of power management which only regulates the basic principles of the organization of business processes of energy consumption and energy saving. The development of the system of power management does not make difficulties, meanwhile, the potential of strategic energy management can be realized through the sphere of management of the human capital of the enterprise due to attraction of intellectual and creative potential of employees for the solution of problems of energy saving.

2. Methodological approaches and analysis
Processes of involvement of the human capital into the of energy efficiency strategy assume formation of the centers of responsibility in the field of energy saving along with formation of individual responsibility and interest. It is necessary to some create key indicators of energy efficiency at the individual level [1, 2].

For the realization of the action it is necessary to offer the algorithm of the development of key indicators by means of which the energy efficiency of the human capital will be measured. The algorithm (figure 1) offered in the article includes consecutive development of key indicators of energy efficiency.

![Algorithm of the development and employment key indicators of energy efficiency on certain production sites](image)

**Figure 1.** Algorithm of the development and employment key indicators of energy efficiency on certain production sites

At the level of technicians all the indicators of energy efficiency are connected with the features of productions and demand identification of potential of energy saving due to identification of important processes and sources of expenses of resources. The determination of structure of the energy-intensive equipment and technological installations and also productions on the basis of technological documentation and results of the previous energy audits forms a basis of identification of significant sources of energy consumption [3, 4].

At the level of administrative personnel the concept of efficiency of teams of management is created. Particular indicators of administrative energy efficiency can belong to the category of offers, the introduced improvements in administrative and organizational structure. The overall performance of teams depends also on steady communications between certain performers.

3. Results

The results of introduction of key indicators of energy efficiency at the individual level are given in the figure 2.
Figure 2. Positive results of the formation of the human capital aimed on energy efficiency

It is supposed, that as the result of effective processes of introduction employees will be stimulated to the meeting of requirements of energy policy, they will create feeling their individual responsibility, that further there will be an additional incentive to training in the energy efficient modes of work during production [5].

The definition of the criterion function of energy consumption at the enterprise can happen at the expense of sites where the high level of energy efficiency of the human capital is systematically observed. Bases of creation of criterion function include the definition of set of diverse target parameters for each production [6, 7].

Creation of an energy profile of the organization. Recommendations about the creation of an advanced power profile of the organization can include the priority analysis of the saved-up energy efficient human capital as a part of motivation of personnel or even within the separate section of a profile which will consider learning efficiency of personnel of all levels, progress in formation of competences of the course of obligatory certifications, experience of promotion and the use of energy efficient technologies, an individual contribution to energy management at the enterprise [8-10].

The development of the complex of actions for maintenance of the existing strategy of energy management. The complex of actions for support to the existing strategy turns on already considered methodical tools: development of innovative approach to energy management, establishment of indicators of efficiency at all the levels, training of employees for the development of the energy efficient human capital and carrying out programs of a benchmarking (comparison of key performance indicators with branch achievements in the field of energy saving (figure 3).
Matters of energy efficiency as well as of creation of steady system of energy management are particularly acute for all the industrial enterprises as they make a basis of consumption of energy resources in world economy [11-13]. The system view on energy saving is formed since the end of the 1970th under the influence of the energy crisis and continues its development nowadays. Formalization of the basic principles and elements of energy management is carried out in the international standard according to the management of the systems of energy management which is applied in the majority of the developed countries; the relevance of his introduction increases also for the Russian enterprises in connection with need of maintenance of the international competitiveness [14-16].

The strategies of energy saving are generally aimed on the development and realization of the technology solutions of various level reducing specific energy consumption including innovative, both for national conditions of economic development, and in global scales. The principle of the innovative development of the technological component of energy efficient production is rational management of the human capital of workers.

The energy efficiency in modern conditions becomes one of strategic factors of success of the industrial enterprises, making a contribution as in reduction of operational expenses and rational use of all energy sources, and in increase in ecological indicators of production.

**Figure 3.** Actions for support to the developed transitional strategy of energy management through separate organizational actions

4. Discussion
5. Conclusions
According to the results of the research, presented in the article, one of the innovative stages and realization of the process of planning of strategic power management as one of the components of ensuring sustainable development and dynamic growth in the energy industry, is the method of formation of the energy efficient human capital.

The main essence of the research, which consists in the reflection of the main actions for planning, development and saving the energy efficient human capital which promotes the increase in effectiveness of processes of training is considered in the article and also motivate workers on use of the modes of work, effective from the point of view of energy saving. The result of the introduction of key indicators of energy efficiency of the human capital allowing to reflect efficiency and optimization of investments of the enterprise into training of personnel and formation of professional competences in energy saving is also presented.

The structure of the key indicators, an algorithm of their development and deployment and also a range of estimated results is revealed. Summarizing the article material, it is possible to conclude, that the application of the stage of management of the human capital as one of priority levers in the field of management of efficiency of planning by the industrial enterprises, is the real innovative step at the heart of energy management. In the consequence of all the introduced processes of measurement of level of energy efficiency of the human capital in structure of an organizational profile of planning of the enterprise, that will reflect the level of the development of the system of power management in strategic level, and also promotes formation of high culture of energy saving and decrease in level of resistance to organizational changes.

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