Construction of a Comprehensive Assessment Indicator of the Energy Company's Activities in the Context of Sustainable Development

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Abstract: The article presents the concept of the final result of the energy company and substantiates that the final result of a particular energy company will be its contribution to the creation of national income, in this regard, the article presents a formalized model for calculating national income. The article makes an attempt from the standpoint of system approach to create such a synthetic indicator, which at the level of the energy company would take into account the supreme interests of the country's economy. Thus, when forming a comprehensive indicator to assess the activities of the enterprise, all indicators directly or indirectly affect the value of the evaluation indicator and, therefore, determine the success or failure of the energy industry enterprise.

1 INTRODUCTION

The need to direct the activities of an energy company to ensure the best end results brings forward the problem of defining the essence of this important economic category.

Indeed, a lot is said and written about the end result, but what should be understood under this result is still not clearly formulated. For example, A.I. Baranovsky made an analysis of different authors' points of view on the economic essence of the concept "final result" (A.I. Baranovsky, 2007).

Thus, A. Rumyantsev believes that the final result of an energy company is an increase in the volume of products sold to society (A. Rumyantsev et al., 1987), improvement of their quality and improvement of the nomenclature. M. Bronstein believes that the final result is expressed through the plan-order and the value of net profit (Bronstein M.L., 1965). L. Abalkin proposes to express the final result through the indicators of product supply, net profit production volume and net production (L.I. Abalkin, 2000). R. Belousov is convinced that in a generalized form the final results of enterprise activity are characterized by normative net production and profit, combined with cost standards (L.S. Belousov, 1990).

Such a large number of definitions indicates that attempts to penetrate more deeply into the semantic essence of the final result deserve serious attention (A. Dubgorn et al., 2018). The solution to this question is directly related to the efficiency of the future economic mechanism. According to the authors, the end result is the results, which are manifested, on the one hand, through a specific form of the finished product, and on the other hand, through the costs associated with its use (A.V. Kozlov et etc., 2016).

Thus, the concept of the final result should be limited to some time interval. In this case, firstly, it is necessary to take into account the existing practice, this interval is best to take equal to one year, so that it is easier to make a link to the annual plan, annual reporting, etc. Secondly, it is necessary to link the result of activity of a particular energy enterprise with the result of functioning of the national economy as a whole, which most fully characterizes the indicator of

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national income (E.G. Anisimov et al., 2016). Consequently, the end result of a particular energy enterprise will be its contribution to the creation of national income.

But the national economy is a complex system, and to determine the contribution of an individual enterprise to the creation of national income (Fabian Takacs et al., 2022). If the activity of an enterprise changes (for better or for worse), this will affect, first of all, the activity of related enterprises, and through them, along the chain of production relations, the activity of related enterprises and, ultimately, the activity of the national economy as a whole.

The task of assessing the activities of the energy company will be reduced to obtaining a quantitative expression of this activity in an indicator that is adequate to the indicator that expresses national income (G. Ya. Vagin et al., 2009). This expression will be a conditional reflection of the final national economic result of the enterprise.

2 FORMALIZED MODEL PRESENTATION

As you know, the formula for determining national income can be presented as follows:

National income = Total social product - Compensation fund

It follows from this formula that the growth of national income is ensured when the growth of the total social product outstrips the growth of the compensation fund (I.G. Akhmetova et al., 2013). And this is possible, first, with an increase in the production of products needed by society, second, with the outstripping growth of production volumes of important for the national economy and scarce products, and, third, with a relative reduction of all material and fuel-energy costs in social production, a relative acceleration of the turnover of production funds. But it should always be borne in mind that the costs of the present period to a great extent conditioned by what were the costs in the past (I.M. Zaychenko et al., 2016). Similarly, future costs depend on today's costs. This continuity and interdependence of costs over time and should be considered when expressing the final economic result at the enterprise level (I.V. Gentsler et al., 2009).

Using this situation as a starting point, we can make a formula to determine national income:

$$H = C - \Phi$$

where H is the amount of national income calculated for a certain time interval; C and F are, respectively, the total public product and the compensation fund for the same time interval.

It follows that:

$$C = C_{П} + C_{H};\ \Phi = \Phi_{П} + \Phi_{H},$$

where $C_{П}$ - part of the total social product created in a given time interval, due to the results of past labor; C_{H} - the rest of the aggregate social product due to the results of labor in a given time interval; $\Phi_{П}$ and Φ_{H} - parts of the compensation fund due to the results of labor in the past and the given time intervals, respectively.

2.1 An example of the total public product

$$C_{П}^{(k)} = C^{(k-1)} = C_{П}^{(k-1)} + C_{H}^{(k-1)}. \quad (1)$$

This expression means that the part of the aggregate social product created in the k-th time interval at the expense of the results of past labor is equivalent to the aggregate social product of the previous time interval.

Thus, it is possible to present the aggregate social products of different time intervals in the following form:

$$C^{(n-1)} = C_{П}^{(n-1)} + C_{H}^{(n-1)}; \quad (2)$$

$$C^{(n)} = C_{П}^{(n)} + C_{H}^{(n)} = C^{(n-1)} + C_{H}^{(n)}; \quad (3)$$

$$C^{(n+1)} = C_{П}^{(n+1)} + C_{H}^{(n+1)} = C^{(n)} + C_{H}^{(n+1)} = C_{H}^{(n)} + C_{П}^{(n)} + C_{H}^{(n+1)}.$$

In its final form it has the form:

$$C^{(n+1)} = C^{(n-1)} + C_{H}^{(n)} + C_{H}^{(n+1)}. \quad (4)$$

From expression (4) it follows that

$$\Phi^{(n+1)} = \Phi^{(n-1)} + \Phi_{H}^{(n)} + \Phi_{H}^{(n+1)}. \quad (5)$$

Thus, using expressions (4) and (5), we can finally write for national income:

$$H^{(n+1)} = H^{(n-1)} + H_{H}^{(n)} + H_{H}^{(n+1)}. \quad (6)$$

It follows from expression (6) that national income in the time interval depends enormously on, $(n+1)$ the national income over the time interval depends to a great extent on what the national income was in the $(n-1)$ time interval and how much was added to it in the n-th and $(n+1)$ time intervals.

But if this is true, then the opposite would also be true: the current national income, i.e., the income of a given time interval will largely determine this or that value of national income in the time intervals of the near future, i.e., the future result depends on the present (K.K. Yumkell, 2009). Hence it follows the most important methodological provision that the activity of the national economy in a certain time interval should be assessed, strictly speaking, not only by those specific results of the same interval, but also

take into account what potential opportunities in the production of aggregate social product and what the costs in subsequent periods will be.

Considering the specific activity of production, it is necessary to clearly imagine that its final result will cover not only the stage of production, but also the stage of product circulation (its transportation to the consumer, storage in intermediate warehouses and bases), as well as the stage of consumption or operation of products at the consumer (Lemesheva, Z. et. etc., 2019). Thus, to assess the activities of enterprises in the energy sector from the perspective of national economic interests, it is necessary to consider the costs and results in three interrelated areas of social production, following one another and constituting in their totality their national economic unity.

Only a systematic approach to evaluating the activity of a producing link makes it possible to obtain accurate data on its contribution to the final national economic result (Prasanta Kumar Dey et al., 2022). If these links are artificially severed, then the first producing link will structure its activity in such a way as to obtain the maximum benefit for itself. The interests of the subsequent links, as well as the results of the activities of all three interconnected links together, will be ignored by the first link in this approach to evaluation, which again, is the case in many cases in practice at present.

For enterprises in the energy sector, the first link (first stage) is production. It is for this link and it is necessary to find an objective synthetic evaluation indicator.

The next stage is the product circulation stage. Costs at this stage to a large extent depend on the transportability of products, on its safety, quality.

The last stage is the stage of product consumption. It is at this stage to the greatest extent reflect the goal of previously carried out production and the cost of achieving it. In other words, at this stage the final economic result of not only consumption, but also previous production is manifested.

Thus, at formation of a complex indicator of an estimation of activity of the enterprise all indicators, namely: quantity of production, quality of the received production, terms of reception of production, all these indicators directly or indirectly, directly or indirectly should influence the size of an estimative indicator and, hence, define success or failure of work of the enterprise of power branch.

3 CONCLUSIONS

The proposed indicator of comprehensive performance assessment (CPA) focuses the work of the energy industry enterprise to achieve the best final results of the national economy. None of the known to science and practice indicators has such a property. Thus, an attempt has been made, from the perspective of a systematic approach to create such a synthetic indicator, which at the enterprise level would take into account the supreme interests of the economy. With the introduction of such an indicator in economic practice, it will be possible to implement not in words, but in deeds the most important principle of improving the economic mechanism: what is beneficial to the economy as a whole, should be beneficial to each enterprise.

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