NOVATEUR PUBLICATIONS
JournalNX- A Multidisciplinary Peer Reviewed Journal
ISSN No: 2581 - 4230
VOLUME 6, ISSUE 4, Apr. -2020

IMPROVEMENT OF MANAGEMENT OF SUSTAINABLE DEVELOPMENT OF OIL AND GAS INDUSTRY OF UZBEKISTAN

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ABSTRACT:

The article discusses the process of managing the sustainability of enterprise development as a multidimensional and multi-vector phenomenon that requires the development of an integrated system for its evaluation. Schemes for improving the process of managing sustainable development and the process of studying the effectiveness of an enterprise management system are given. The goals of analysis and evaluation of the enterprise management system are determined.

An assessment is given of the place of the oil and gas industry in the economy of the Republic of Uzbekistan. The characteristic of external and internal factors influencing the development of the enterprise is given. The logical chain of management processes at the enterprises of the oil and gas industry of Uzbekistan is shown. The system of sustainable development management methods is described, oriented in three main directions and ensuring sustainable production growth and strategic development prospects; building up and innovative development of production potential; rational use of financial resources, ensuring self-development and stability of enterprises. The world experience of using key performance indicators (KPI) and their advantages are analyzed. The key performance indicators of management used in the Republic of Uzbekistan are analyzed: their disadvantages and advantages on the example of JSC Uzbekistan. Suggestions are given for improving the system of key performance indicators.

KEY WORDS: sustainable development, corporate governance, external and internal factors, key performance indicators, integrated performance indicators.

INTRODUCTION:

Management of ensuring the sustainability of enterprise development is a multidimensional and multi-vector phenomenon, requiring the development of an integrated assessment system. The use of various sustainability management tools varies under the influence of various factors and development priorities of the enterprise. The instrumental management structure is constantly being improved according to the principle of adaptation to the external environment and taking into account internal development factors.

As a result, the very methodology for assessing the effectiveness of sustainable development management acts as a mobile analytical technology (Fig. 1).

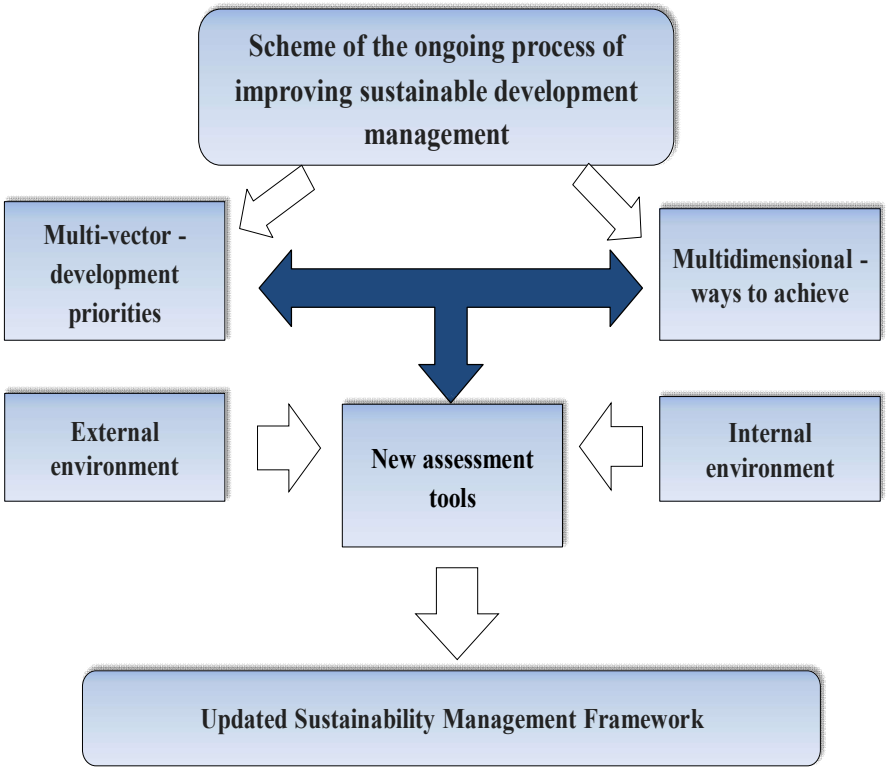

Fig. 1. Scheme of the process of improving the management of sustainable development of the enterprise

In the conditions of a dynamically developing modern production and society in the Republic of Uzbekistan, management should be in a state of continuous development, which today cannot be achieved without studying patterns and trends, without choosing alternatives and directions for development. The development and improvement of management is based on a thorough and in-depth knowledge of the enterprise, which requires a study of the management system and an assessment of its effectiveness (Fig. 2).

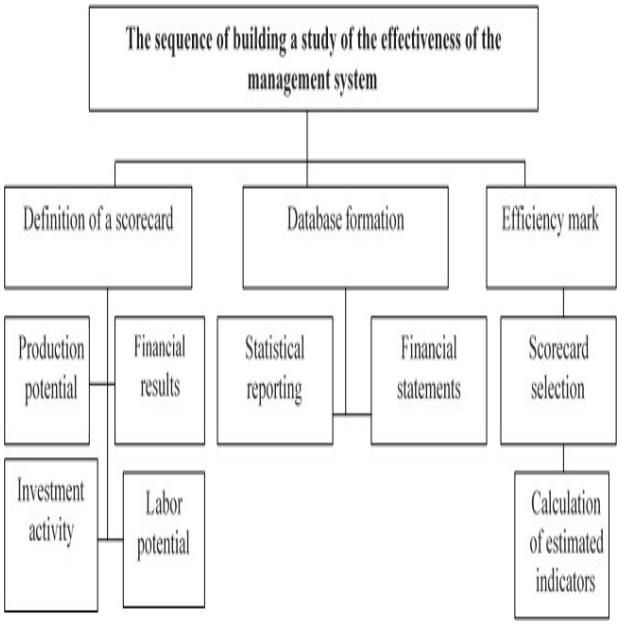

Fig. 2. Scheme of the process of researching the effectiveness of the enterprise management system

The analysis of any specific management problem as an object of research is necessary, first of all, to increase the efficiency of the enterprise, as well as increase its competitiveness in the market of goods (services),

The oil and gas industry plays a decisive role in the development of the economy of Uzbekistan. Despite the fact that in the Republic of Uzbekistan only a little more than 1% of the country's employed population works in the oil and gas industry, its share in generating budget revenues exceeds 20%, and in investments in fixed assets - about 10% of their total volume in the Republic. For the period from 2013 to 2018, the size of foreign trade turnover of «Uzbekneftegaz» JSC increased almost 5.0 times. The absolute growth of exports over this period amounted to 5 times, and imports - 1.4 times, which indicates increased independence of the industry from external supplies of products. According to observations over a number of years, for each unit of production growth in the oil and gas industry, according to the Center for Economic Research of Uzbekistan, due to the multiplier effect, production growth in other sectors of the economy is 2.8 times.

This circumstance requires the oil and gas industry to work continuously to find and find managerial decisions to improve, modernize and introduce advanced technologies aimed at meeting the growing energy needs of the country's economy. One of the main links in this work is the identification of specific factors that directly affect enterprises in this industry.

Production at the enterprises of the oil and gas industry is a complex set of basic and auxiliary processes that constantly require monitoring, analysis and research to regulate management decisions aimed at its sustainable development. At the enterprises of the oil and gas industry, the control system of both the main and auxiliary production is formed under the influence of many specific factors. External factors (Fig. 3) and adaptation of the internal environment of enterprises to them have a decisive influence on the formation of their management system.

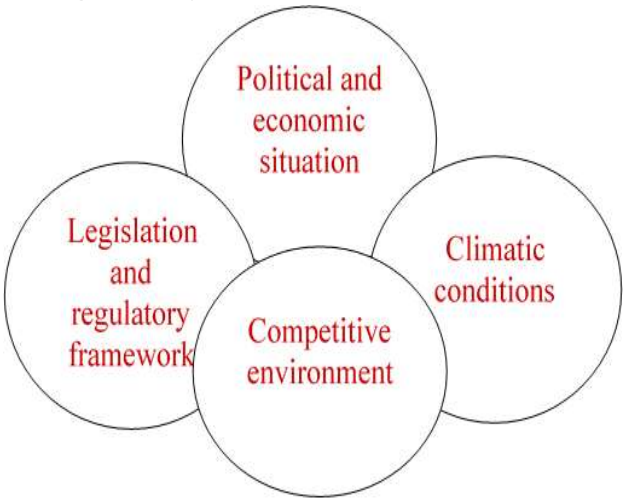

Fig. 3. The structure of external factors affecting the development of the enterprise

The political and economic situation here refers to political stability, economic growth, the rate and level of inflation, the level of development of the country's financial system, the stability of the tax system, the presence and condition of foreign economic relations, and the level of income of the population.

Legislative and regulatory framework is the presence of legislative and by-laws covering all aspects of the development of the country's economy, their relationship with international standards, including standardization, antitrust policy, the level of consumer protection, etc.

Natural and climatic factors - the availability of basic natural resources and their reserves, assessment of climatic zones, the use of secondary resources and so on.

The level of competition is the share of enterprises producing products competitive on the foreign and domestic markets.

The concept of managing the sustainable development of enterprises implies the existence of a theoretical, methodological and organizational-methodological chain of

interconnection and interdependence of goals, strategies, principles, methods, techniques and methods of management. At the same time, methods for managing the development of enterprises in the oil and gas industry are inextricably linked with the principles that determine the structure and functioning of the entire management system, the basic rules of its activity: the level of centralization and decentralization, forecasting and programmed development, the scientific validity of management decisions. In practice, the management process covers a consistent logical chain: goals, strategies, principles, methods, techniques (Fig. 4).

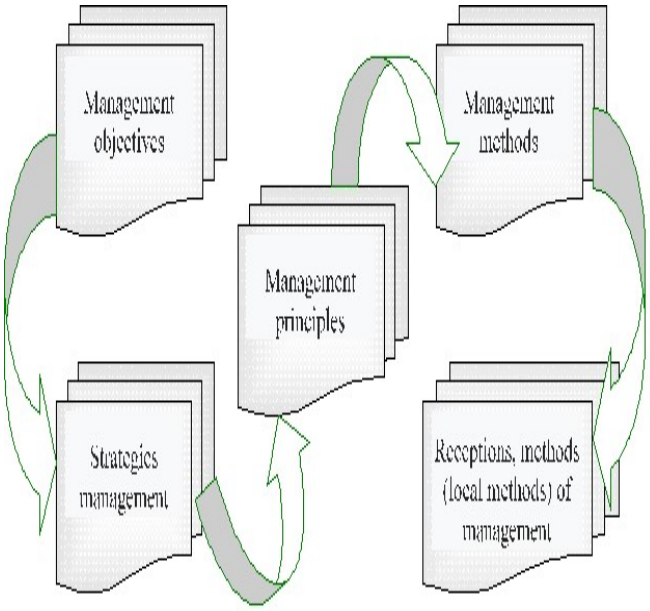

Fig. 4. The logical chain of management processes at the enterprises of the oil and gas industry of the Republic of Uzbekistan

As in other industries, the entire set of management methods at the enterprises of the oil and gas industry is conceptually divided into three large groups economic, organizational (administrative) and educational (socio-psychological). This division is, to a certain extent, conditional, since when making decisions and their implementation, as a rule, a whole gamut of versatile and interrelated control actions on a controlled object is used.

Nevertheless, depending on the goals and management strategy adopted on the basis of specific conditions, the dominance of certain methods is observed. Given the existing organizational statics and management dynamics, economic management methods are currently coming to the fore at oil and gas enterprises.

The system of sustainable development management methods should be oriented in three main directions and ensure:

- sustainable production growth and strategic development prospects;
- building up and innovative development of production potential;
- Rational use of financial resources, ensuring self-development and stability of enterprises.

The results of the enterprise confirm the correctness of the chosen strategy, principles, methods and management techniques. If the goal is impossible for reasons depending on the activities of the enterprise, this means a low level of functioning of its existing management system.

Based on this, July 15, 2015 was adopted and entered into force on January 1, 2016, the resolution of the Cabinet of Ministers of the Republic of Uzbekistan No. 207 which approved the Regulation on criteria for evaluating the performance of joint stock companies and other business entities with a state share. Key performance indicators (KPI) are the criteria used to determine the effectiveness of an executive body in managing an enterprise.

In world practice, key performance indicators are an invariable element of not only the assessment of certain technological and business processes, but also the management system. For many decades, many Western companies have been successfully using the system of key performance indicators to assess

the performance of companies, including in terms of evaluating management personnel. KPI allow you to control the business activity of employees, departments and the company as a whole.

The use of KPI for management purposes depends on whether they correspond to the company's strategies and how adequately reflect the degree of effectiveness of operational (directly involved in creating value of products) and functional (service) processes in the aggregate.

The main advantage of KPI systems is that the decision-making process comes down to the analysis of data that is available at any time and presented in a pre-approved format. The KPI system is especially effective in large companies, where all levels of distribution and responsibility centers are most clearly represented.

Key performance indicators are a tool to measure your goals. If the indicator is not related to the goal, that is, it is not formed on the basis of its content, then this KPI cannot be used.

In order for the indicator to fall into the KPI system, it must have the following properties:

- The indicator reflects a key aspect of the business activity (key business process) of the company;
- The indicator plays a significant role in managerial decision making;
- The indicator is "manageable", that is, responsible persons can significantly influence the value of the indicator within the limits of their official duties;
- The indicator has a potential sustainable causal relationship with other indicators;
- The indicator is simple in calculating and collecting primary reporting information;
- The indicator has an economic (statistical) meaning when consolidating (aggregating) at higher levels of responsibility.

The KPI system involves assigning a specific weight to each KPI. In doing so, the following principles must be observed:

- The more important the goal of KPIs, the greater its weight;
- The distribution of specific gravity should begin with more important KPIs;
- Poorly measured, general goals of KPIs, should not have a lot of weight (15–20%);
- KPI, should not be "heavier" 50% and "lighter" 5%;
- The sum of the weights of all tasks must be no less than and no more than 100%.

In practice, the use of a system of performance indicators (criteria) provides for:

- The orientation of enterprises in the sectors on an intensive path of development and achieving a higher level of efficiency in dynamics;
- Identification of reserves, allowing to ensure further improvement of the economic activities of enterprises in the industries based on the implementation of the achievements of scientific and technological progress, modern technology and improved organization of production;
- Creation of an effective mechanism for increasing efficiency.

In Uzbekistan, the system of criteria for evaluating the performance of joint stock companies and other business entities with a state share consists of two parts: main and additional. The list of main and additional KPI and methods for their calculation are given in tables 1 and 2. KPI marked * (first 5) will be completed after the transition to publication of financial statements in accordance with international financial reporting standards. Each of the KPI is assigned a specific weight, based on its importance in evaluating activities for the respective business entity.

The integrated performance indicator is calculated in 2 stages: at the first stage, the updated specific gravity of each KPI is displayed

based on its implementation. At the second stage, the integral efficiency indicator is derived based on the sum of the specified specific weights for all KPI (Fig. 5).

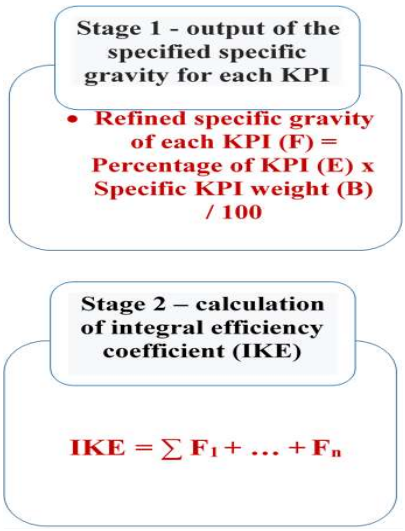

Fig. 5. The formula for calculating the integral efficiency coefficient (IKE)

Comparison of IKE with the predictive one will give an answer on how efficiently managing this economic entity is.

- ✓ If the value of the integral efficiency coefficient (IKE) was from 40 to 60% - unsatisfactory;
- ✓ If the value (IKE) was from 61 to 80% - low;
- ✓ If the value (IKE) was from 81 to 90% - average;
- ✓ If the value (IKE) was from 91 to 100% - sufficient;
- ✓ If the value (IKE) exceeded 101% - high.

Table 1.

The list of basic KPI and methods for their calculation

№	Indicator	Calculation method
1	**Earnings Before Interest, Taxes, Depreciation & Amortization. (EBITDA)***	net profit (p. 270 gr. 6 f. 2) + income taxes (p. 230 f. 2) + interest received (p. 110 gr. 3 f. 3) - interest paid (p. 110 gr. 4 f. 2) .4) + depreciation (p. 011 gr. 4 + p. 021 gr. 6 f. 1) - revaluation of assets (p. 101 gr. 12- gr. 9 f. 2-moliya)
2	**Cost Income Ratio (CIR)***	operating expenses (p. 020 + 030 gr. 3 f. 4): net sales revenue (p. 01 gr. 4 f. 2)
3	**Return on Capital Employed (ROCE)***	net profit (p. 270 gr. 6 f. 2): liabilities (p. 770 gr. 4 f. 1)
4	**Return On Equity (ROE)***	net profit (p. 270 gr. 6 f. 2): authorized capital (p. 210 gr. 4 f. 1)
5	**Total Shareholders Return (TSR)***	net profit (p. 270 gr. 6 f. 2): long-term bank loans and long-term loans (p. 570 + 580 gr. 4 f. 1)
6	**Return on assets**	profit before income tax (p. 240 gr. 5 f. 2): average annual value of assets ([p. 400 gr. 3 f. 1 + p. 400 gr. 4 f. 1] / 2)
7	**Absolute liquidity ratio**	cash (p. 320 gr. 4 f. 1): current liabilities (p. 600 gr. 4 f. 1)
8	**Coefficient of financial independence**	sources of own funds (p. 480 gr. 4 f. 1): [obligations (p. 770 gr. 4 f. 1) - long-term liabilities (p. 490 gr. 4 f. 1)]
9	**Payables turnover in days**	the number of days in the period: [net revenue from sales (p. 01 gr. 4 f. 2): arithmetic mean value of accounts payable (p. 601 gr. 3 + p. 601 gr. 4): 2]
10	**The receivables turnover in days**	the number of days in the period: {[net sales revenue (p. 01 gr. 4 f. 2): arithmetic average of receivables (p. 210 gr. 3 + p. 210 gr. 4)]: 2}
11	**Coverage ratio (solvency)**	current assets (p. 390 gr. 4 f. 1): [liabilities (p. 770 gr. 4 f. 1j - long-term liabilities (p. 490 gr. 4 f. 1)]
12	**Dividend income**	accrued dividends per 1 ordinary share: [{net profit (p. 270 gr. 5 f. 2) - dividends accrued on preferred shares}: number of ordinary shares (p. 152 g. 9 f. 5)]
13	**Account receivable reduction rate (in% of the assigned task)**	actual decrease in accounts receivable: forecast value of decrease in accounts receivable × debt × 100

Table 2.

The list of additional KPI and methods for their calculation

№	Indicator	Calculation method
1	Depreciation rate of fixed assets	depreciation of fixed assets (line 011 gr. 4 f.1): initial cost of fixed assets (line 010 gr. 4 f.1)
2	Fixed assets update rate	the value of received fixed assets (p. 101 gr. 2 f. 2-moliya): the value of all fixed assets at the end of the year (p. 101 gr. 9 f. 2-moliya)
3	Labor productivity	net revenue from sales of products (p. 01 gr. 4 f. 2): average number of employees
4	Return on assets	net revenue from sales of products (p. 01 gr. 4 f. 2): average annual value of fixed assets [p. 012 (gr. 3 + gr. 4) f. 1: 2]
5	Utilization rate	actual volume of output: output at which can be achieved with a full load of all equipment, including leased and mothballed (according to equipment passport)
6	Energy efficiency (share of energy costs in the structure of production costs)	total cost of fuel and lubricants, heat, electricity and gas: the total cost of production (according to accounting documents)
7	The share of innovative products in the total volume of products sold	volume of sold innovative products, work, services in value terms: total volume of products sold (p. 01 gr. 4 f. 2)
8	The share of innovation costs in the total costs of the enterprise	total costs of innovation: total costs of the enterprise
9	Personnel training costs per employee	personnel training costs (according to accounting documents): average number of employees
10	Investment program progress indicator in monetary terms	funds spent under the Investment program: funds provided for in the Investment program
11	Indicator of the performance of the parameters for inputting capacities (in% of the declared physical volume)	input of capacities: forecast task × 100
12	Implementation rate of export parameters (in% of the monetary volume)	actual export figures in value terms: forecast declared export values in value terms × 100

During the preparation of this article, we considered the conditional results of the work of «Uzbekneftegaz» JSC using key performance indicators adopted in the country. In the course of this work, the tasks were set:

• To reveal the essence, goals, objectives and principles of assessing the effectiveness of enterprises by using a system of key performance indicators;

• Get acquainted with world experience in assessing the effectiveness of enterprises;

• Assess the performance of joint-stock companies of «Uzbekneftegaz» JSC;

• To propose measures to improve the methods and criteria for evaluating the effectiveness of oil and gas enterprises.

An analysis of the use of KPIs, as our calculation showed, for the analyzed period, allows us to draw the following conclusions on the basis of the average ICE on the performance of the executive body of joint-stock companies (Table 3).

Table 3.

The effectiveness of the executive body of joint stock companies

Joint stock company	Average IKE	Executive Body Efficiency
JSC "Uzneftegazdobycha"	98,0	sufficient
JSC "Uznefteprodukt"	74,4	insufficient
JSC "Uztransgaz"	84,5	average
JSC "Uzneftegazmash"	87,4	average
JSC "Uzgeoburneftegaz"	65,0	insufficient
JSC "Uzneftegazstroyinvest"	90,0	sufficient

* Calculated by the authors.

In the analysis of the use of the system of key performance indicators, in our opinion, a number of shortcomings were revealed. KPIs should entirely depend on the specific activities of a particular unit. As world experience recommends, in determining the number of indicators, in our opinion, the "10/80/10" rule should be used, that is, the organization should have about 10% performance indicators, 80% - production indicators and 10% - key performance indicators and use in generally no more than 10-15 KPI.

In almost all joint-stock companies, the number of KPIs exceeds 21, and, taking this into account, their specific gravities are "sprayed" (tab. 4).

Table 4.

KPI specific gravity distribution

	Joint Stock Companies					
	Uzneftegazdobycha	Uznefteprodukt	Uztransgaz	Uzneftegazinvest	Uzneftegazmash	Uzgeoburneftegaz
1. The total number of KPI	**27**	**21**	**21**	**21**	**21**	**21**
including major	8	8	8	8	8	8
additional	19	13	13	13	13	13
2. The proportion by the number of indicators	**100**	**100**	**100**	**100**	**100**	**100**
including major	30,8	38,1	38,1	38,1	38,1	38,1
additional	69,2	61,9	61,9	61,9	61,9	61,9
3.Minimum and maximum specific gravity						
including major	5-15	5-15	5-15	5-15	5-15	5-15
additional	2-10	4-16	4-12	4-16	4-12	4-14

* Calculated by the authors.

It is doubtful the correctness of the proposed formula for calculating such an indicator as "Fulfillment of a task to reduce accounts receivable", since the size of accounts receivable changes daily and if one debtor paid off his debt, at least partially, another debt could arise, and so on. In this regard, simply comparing the forecast for a decrease in accounts receivable with the decrease in the balance sheet data does not reflect the real situation.

One of the problems of determining the integral efficiency coefficient based on the results of the analyzed period, taking into account 5 main indicators, is the complexity of

their calculations due to the fact that accounting in Uzbekistan is carried out according to the national accounting standards (NAS), which have not yet changed, and the recommended formulas for their calculation is based on a different cost structure.

Considering the above, we propose the following measures to improve the use of the system of key performance indicators for assessing the activities of the executive body of companies.

Using world experience and the principles of distribution of KPI specific gravities developed on its basis, we would consider the following possible:

1. Reduce the number of KPI.

2. When assigning a specific gravity to each KPI, the following principles should be observed:

• The more important the goal of KPIs, the more its weight and the distribution of specific gravity should start with more important KPIs. That is, indicators that are strategic for the company and improve the position of the company should have the largest share;

• Poorly measured, general KPI goals should not be heavy (15–20%);

• KPI, should not be "heavier" 50% and "lighter" 5%.

3. The proposed formulas in paragraphs 1-5 of Appendix 3 "a" should be linked with the position on the composition of costs adopted by the legislation of the Republic of Uzbekistan (Table 5).

Table 5.

Proposals for changing the calculation formulas of individual KPI

Indicator	Calculation formula in the regulation	Remarks	Proposed calculation formula
1. Profit before interest, taxes and depreciation (**EBITDA** - EarningsBeforeInterest, Taxes, Depreciation & Amortization)	(profit before tax) + (interest payable) + (depreciation of fixed assets and intangible assets) It is calculated in the following sequence: Net profit + Income tax expense; - Reimbursed income tax; (+ Extraordinary expenses); (- Extraordinary income); + Interest paid; - Interest received; = EBIT; + Depreciation for tangible and intangible assets; - Revaluation of assets; = EBITDA.	It is not clear what kind of profit is taken for calculation: profit before tax or net profit. The result in both cases is the same.	1 option EBITDA = Pdu + PrU - PrP + A, Where: Pdu profit before taxes (f.№2 p. 240 gr. 5) PrU - expenses in the form of interest paid (f.№2 p. 180 gr. 6) PrP - income in the form of interest received (f. No. 2 p. 130 gr. 5) A - depreciation charges on tangible and intangible assets of industrial and non-productive purposes without revaluation (form 3-M p. 115 + p. 116). Option 2 EBITDA = PE + NP + CR - BH + PrU - PrP + A, Where: PE - net profit (f. No. 2 p. 270 gr. 5); NP - income tax expense ((f.№2 gr. 6 p. 250 + p. 251 + p. 252 + p. 260); CR - extraordinary expenses (f. No. 2 p. 250 gr. 6); BH - extraordinary income (f. No. 2 p. 250 gr. 5); PrU - expenses in the form of interest paid (f.№2 p. 180 gr. 6) PrP -

Indicator	Calculation formula in the regulation	Remarks	Proposed calculation formula
			income in the form of interest received (f. No. 2 p. 130 gr. 5) A - depreciation charges on tangible and intangible assets for industrial and non-productive purposes without revaluation (form 3-M p. 115 + p. 116);
2. The ratio of costs and revenues (CIR - CostIncomeRatio)	(operating expenses) // revenue.	In Uzbek legislation, operating expenses include non-manufacturing expenses for the main activity (Form 2 Formation of financial results). To calculate the ratio of costs and revenues corresponding to the goals set in this document, it is proposed to do it according to the data of the form No. 2 mentioned above.	1 option CIR = PrZ / BP, Where: PrZ - production costs for the sale of products (f.№2 p.020 gr.6); BP - revenue from sales (f.№2 p. 010 gr. 5) Option 2 CIR = PZ / VD, where: PZ - total costs (f. No. 2 gr. 6 p. 020 + p. 040 + p. 170); VD - all income (f. No. 2 gr. 5 p. 010 + p. 090 + p. 110).
3. Return on attracted capital (ROCE - ReturnonCapitalEmployed)	(net profit) / (attracted capital at the beginning and end of the period)	In Uzbek legislation there is the concept of "liabilities (long-term and short-term)" or "borrowed funds". In addition, it is not a comparison of the size of liabilities at the beginning and end of the period, but their average annual value. In addition, profitability is determined as a percentage, i.e. the result obtained using this formula should be multiplied by 100%.	ROCE = PE / (It + OK) / 2] * 100, Where: PE - net profit (f. No. 2 p. 270 gr. 5); He, OK - obligations at the beginning of the period (f. No. 1 p. 770 gr. 3 and liabilities at the end of the period (f. No. 2 p. 770 gr. 4).
4. Return on equity (ROE - ReturnOnEquity)	(net income) / (average annual share capital).	In Uzbek legislation there is no concept of "joint-stock capital", but there are "net assets of a joint-stock company," which is the value of all assets of a company minus its liabilities. In addition,	ROE = PE / ((AKN - On) + (AKK - On)) / 2] * 100, Where: PE - net profit (f. No. 2 p. 270 gr. 5) AKN, - assets at the beginning of the period (f. No. 1 p. 400 gr. 3) He - obligations at the beginning of the period (f.№1 p. 770 gr. 3))

Indicator	Calculation formula in the regulation	Remarks	Proposed calculation formula
		profitability is determined as a percentage, i.e. the result obtained using this formula should be multiplied by 100%.	ACC - assets at the end of the period (f. No. 1 p. 400 gr. 4) OK - obligations at the end of the period (f.№1 p. 770 gr. 4)
5. Return on Shareholder Investments (TSR - Total Shareholders Return) *	(stock price at the end of the period - stock price at the beginning of the period + dividends paid during the period) / (stock price at the beginning of the period)	In principle, the formula is true, however, given that in the oil and gas industry, where the stock price did not change, its calculation is not gives an answer to the question of how the rate of return on shareholders changes as a result of changes in stock exchange quotes. In addition, profitability is determined as a percentage, i.e. the result obtained using this formula should be multiplied by 100%.	TSR = ((Tsk - Tsn + D) / Tsn) * 100, Where: Tsn, Tsk - the share price at the end of the period and at the beginning of the period (f. No. 5 “Report on equity” p. 140 gr. 9); D - dividends paid during the period (f.№5 p. 090 gr. 9)

* Calculated by the authors.

It should be noted that the work on the use of key performance indicators and integrated performance factors will continue further. Based on the results of working with these criteria during the analyzed period by all sectors of the economy, this provision may be amended based on the practice of their use.

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