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FINANCIAL AND ECONOMIC ASPECTS AND COST ACCOUNTING IN GEOLOGICAL EXPLORATION IN THE REPUBLIC OF UZBEKISTAN

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Abstract. The article considers the key financial and economic aspects, methodology, and national characteristics of financial and management accounting of costs for geological exploration works (GEW) in the Republic of Uzbekistan. Special attention is paid to the integration of National Accounting Standards (NAS)[4] with International Financial Reporting Standards (IFRS 6, IAS 36, IAS 37)[6] in the context of large-scale economic reforms and Presidential Decree No. PR-4611[3]. The tax aspects of GEW according to the Tax Code of the Republic of Uzbekistan[2] are analyzed, and methodological approaches to analyzing the efficiency of investments in subsoil use are proposed based on the works of leading domestic and foreign scientists. [7, 8, 9, 10].

Introduction

Geological exploration works (GEW) represent the initial, most risky, and capital-intensive stage of reproducing the mineral resource base of any state. For the Republic of Uzbekistan, which possesses extremely rich reserves of minerals (including gold, copper, uranium, natural gas, and strategic rare metals), the effective management of financial and economic processes in the sphere of subsoil use is the foundation for sustainable macroeconomic growth. The development of such mining industry giants as the Navoi and Almalyk Mining and Metallurgical Combinats (NMMC and AMMC), as well as the oil and gas sector represented by JSC Uzbekneftegaz, directly depends on the scale and economic effectiveness of prospecting and exploration activities. [5, 6].

The specificity of GEW lies in a high level of uncertainty: a significant portion of investments may not yield a commercial result if "dry" wells or non-commercial inflows and concentrations of metals are discovered. This circumstance dictates the complexity of the financial and management cost accounting methodology. Economists and accountants of mining enterprises face the complex task of developing an accounting policy that objectively reflects the value of the created exploration assets, timely identifies signs of their impairment, and complies with both national legislation and international standards.

Regulatory and legal framework for accounting in Uzbekistan

The fundamental element of regulating accounting processes in the country is the Law of the Republic of Uzbekistan "On Accounting" (No. LRU-404).[1]. This normative act establishes uniform legal and methodological foundations for the organization of accounting, fixes the responsibility of management for the formation of reliable financial data, and regulates the mandatory use of primary documentation to confirm any business transactions. When conducting GEW (Geological Exploration Works), strict compliance with the requirements of LRU-404 for documenting costs (certificates of completed drilling operations, geophysical reports, work permits) serves as the basis for the subsequent capitalization of expenses.

The National Accounting Standard of the Republic of Uzbekistan (NAS No. 1) "Presentation of Financial Statements and Accounting Policies"[4] determines the procedure for forming and changing the accounting policies of economic entities. According to NAS No. 1, [4] the selected accounting methods must be applied consistently from year to year. For enterprises carrying out GEW, this means the need to clearly establish one of two fundamental approaches in their accounting policy:

- **Full Cost Method:** all GEW expenses within a certain geographical region are capitalized, regardless of whether they led to the discovery of a deposit or not;
- **Successful Efforts Method:** only those costs that directly led to the discovery of commercially viable reserves are capitalized, and expenses for unsuccessful projects are immediately written off as losses in the reporting period.

Transition to IFRS and integration of international standards (IFRS 6, IAS 36, IAS 37)

A new stage in the transformation of the corporate sector of Uzbekistan was the Resolution of the President of the Republic of Uzbekistan No. PR-4611 dated February 24, 2020, "On additional measures for the transition to international financial reporting standards".[3] According to this document, large taxpayers, joint-stock companies, and natural monopolies are required to organize accounting and financial reporting exclusively on the basis of IFRS. For subsoil users, the standards IFRS 6, IAS 36, and IAS 37, which supplement the general principles of IAS 1 "Presentation of Financial Statements", have acquired key significance.[5]

IFRS 6 "Exploration for and Evaluation of Mineral Resources"[6] regulates the financial accounting of costs incurred by an enterprise in connection with the exploration and evaluation of mineral resources, until the technical feasibility and commercial viability of extracting them are demonstrable. The standard permits companies to be temporarily exempted from applying some of the general provisions of the IFRS conceptual framework, allowing them to develop their own accounting policies for exploration assets. Typical capitalizable costs under IFRS 6 include:

1. Acquisition of rights to explore (licenses).
2. Topographical, geological, geochemical, and geophysical studies.
3. Exploratory drilling (sinking of prospecting and mapping wells).
4. Trenching, pitting, and bulk sampling.
5. Activities in relation to evaluating the technical feasibility and commercial viability of extracting a mineral resource.

IAS 36 "Impairment of Assets"[6] requires entities to assess exploration and evaluation assets for impairment when facts and circumstances suggest that the carrying amount of these assets may exceed their recoverable amount. For GEW (Geological Exploration Works) in Uzbekistan, specific indicators of impairment are: expiration of the license period without plans for its renewal; lack of budget allocations for further drilling in a given area; official conclusion that the discovered reserves do not have commercial significance.

IAS 37 "Provisions, Contingent Liabilities and Contingent Assets"[6] plays a critical role in calculating the full value of subsoil use assets. Conducting GEW (especially drilling and excavation) inevitably causes environmental damage. In accordance with IAS 37 and national environmental legislation, an entity is obliged to recognize a provision (reserve) for future land reclamation and well abandonment. The amount of this provision is discounted to its present value and included in the initial cost of the tangible or intangible exploration asset, forming a balanced picture of future capital outflows.

Classification and calculation of the cost of GEW

As Professor A. Karimov notes in his fundamental textbook "Accounting",[7] the correct classification of costs predetermines the accuracy of calculating the cost and the final financial

result. In the field of geological exploration, costs are divided by the stages of work: regional works, prospecting stage, evaluation stage, and detailed exploration.

In accordance with the works of A.I. Alikulov and B.A. Khasanov on practical management accounting,[10] GEW (Geological Exploration Works) costs are classified into direct and indirect. Direct costs include expenses that can be directly attributed to a specific accounting object (a specific well or license area): remuneration of the drilling crew, depreciation cost of drilling rigs, consumables (drill bits, drilling fluids, chemicals). Indirect (general production) expenses include the maintenance of the management personnel of the geological exploration expedition, costs for field camps, occupational safety, and environmental monitoring, distributed among objects in proportion to the selected base (for example, the volume of penetration in meters or direct labor costs).

Statistical overview of financing and costs for GEW in Uzbekistan

In recent years, the structure of financing for GEW (Geological Exploration Works) in Uzbekistan has undergone significant changes. If earlier the main source was state budget funds, then in the period 2021–2025, the share of own funds of large industrial enterprises and foreign direct investment (FDI) sharply increased. Below is a summary statistical table illustrating the dynamics and structure of GEW costs in the Republic of Uzbekistan.

Sources of exploration financing	2021 (billion soums)	2022 (billion soums)	2023 (billion soums)	2024 (billion soums)	2025 (estimate, billion soums)
The State budget	1 200	1 350	1 410	1 480	1 550
Own funds of enterprises (NMMC, AMMC, etc.)	1 850	2 400	3 100	3 850	4 400
Foreign Direct Investment (FDI)	950	1 400	2 200	2 900	3 600
TOTAL AMOUNT OF COSTS	**4 000**	**5 150**	**6 710**	**8 230**	**9 550**

The table data clearly demonstrate the trend of diversifying funding sources. The growth of enterprises' own investments is associated with large-scale investment projects, such as the development of the "Yoshlik-I" deposit by the Almalyk MMC. The attraction of foreign investors has intensified due to the creation of flexible legal conditions and the introduction of international JORC standards for reserve estimation, which requires transparent cost accounting in the IFRS format.

Tax aspects of geological exploration activities

The Tax Code of the Republic of Uzbekistan (as amended on 01.01.2020) establishes clear rules for the recognition and deduction of GEW (Geological Exploration Works) expenses when calculating income tax.[2]. Expenses for geological study, exploration, and preparatory work for the extraction of minerals are recognized as intangible assets and are subject to amortization. The

provision of the Tax Code allows for the amortization of these assets evenly over the validity period of the license or a specific period established by the taxpayer, but not less than 5 years.

A significant element is also the tax for subsoil use. During the period of purely exploratory work, obligations for this tax do not arise, since the object of taxation appears only at the stage of extraction (recovery) of minerals from the subsoil. At the same time, the Tax Code provides tax incentives for investors,[2] engaged in the search for hydrocarbons under the terms of production sharing agreements (PSA) or within the framework of state concessions in remote regions of the country.

Methodology of financial and economic analysis of GEW efficiency

To evaluate the efficiency of the incurred costs, a comprehensive financial and economic analysis is applied. In accordance with the methodological approaches developed by domestic economists M.K. Pardaev and B.I. Isroilov ("Financial Analysis"),[9] as well as L.P. Krasnova ("Finance, Money, Credit"),[8] the evaluation of the efficiency of GEW (Geological Exploration Works) costs cannot be limited to standard commercial profitability indicators due to the long-term nature of investments.

The efficiency analysis is based on the calculation of specific industry ratios:

- **GEW success rate:** the ratio of the number of commercially successful (productive) wells to the total number of drilled prospecting and exploration wells.
- **Unit costs for reserve growth:** the ratio of total GEW costs for the period to the volume of confirmed reserves placed on the balance sheet in categories A, B, C1 (in tons, cubic meters, or ounces).
- **Evaluation of the net present value of the project (NPV):** discounting future cash flows from production taking into account a risk premium for geological uncertainty.

Conclusion

The development of financial and economic aspects and cost accounting during geological exploration works in Uzbekistan is in a phase of active modernization and harmonization with global standards. The transition of large subsoil users to IFRS based on Presidential Resolution No. PR-4611[3] increases the transparency of reporting and the investment attractiveness of the mining and oil and gas sectors.

The combination of strict compliance with the Law "On Accounting",[1] the flexible application of IFRS 6 provisions, and the optimization of management accounting using the methodology for allocating indirect costs allows enterprise management to make timely, well-founded decisions on continuing or terminating GEW. Further improvement of accounting is seen in the automation of cost calculation at the ERP system level and a deep integration analysis of geological risks within a single financial model of the enterprise.

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