International Journal of Research inSocial Science
Vol. 12 Issue 03, March 2022,
ISSN: 2249-2496 Impact Factor: 7.081
Journal Homepage: http://www.ijmra.us, Email: editorijmie@gmail.com
Double-Blind Peer Reviewed Refereed Open Access International Journal - Included in the International Serial Directories Indexed & Listed at: Ulrich's Periodicals Directory ©, U.S.A., Open J-Gate as well as in Cabell's Directories of Publishing Opportunities, U.S.A

ACCOUNTING FOR TOLLING (CUSTOMER-OWNED) RAW MATERIALS

Yarkulova Marifatkhon Abdulakhadovna
PhD candidate of Tashkent Institute of Finance

Oil refineries of the Republic of Uzbekistan in the process of their performance challenge many problems and the the main of these problems are the decline in the supply of crude oil, physical depreciation and obsolescence of the equipment used, as well as unstable financial situation. One of the possible solutions to these problems is the use of the practice of providing services for the processing of customer's raw materials on tolling (customer-owned) terms. The article considers the conditions and possibilities for applying this practice in the refineries of Uzbekistan.

Key words: tolling (customer-owned) raw materials, production prime-cost calculation, cost of processing services, product range, distribution of costs.

Introduction. Tolling (customer-owned) transactions represent a well-known form of supply of raw materials to processing enterprises. This practice is applied in such areas as aluminum, light, food industries and, in particular, in the oil and gas and oil refining industries. Tolling processing of raw materials by its nature is the fact that a deal is made in which the customer purchases raw materials and, without transferring ownership, transfers it to the contractor, who, using his equipment and capacities, manufactures the products required for the customer. In this case, a tolling party receives a remuneration for the performance of the service, and all costs and compulsory payments are transferred to the customer. It should be noted that accurate and reliable accounting of tolling (customer-owned) raw materials is required to precisely determine the cost of the products manufactured, the costs incurred and the amount of tax deductions.

Literature review. The economic literary sources comprehensively highlight some fundamental issues of improving accounting for production costs and calculating the prime-cost of industrial products. In the opinion of the English scientist Drury K., the choice of one or another technique of calculation depends on the cycle and production technology. In this regard, in his research papers particular attention is paid to accounts in the system of job order costing and process costing for production (Regulation, 2010).

Peculiarities of cost accounting and calculation in oil refining are reflected in the research papers of such scholars-economists as N.D. Vrublevsky, G.N. Vinogradova, D.T. Kuznetsova, Z.A.Gareeva, F. Rozina, A.F. Zimin and others. They have developed a comprehensive and detailed system of accounting organization.

The issues of accounting for tolling raw materials have been studied by domestic scholars B.A. Khasanov, Ibragimov A.K., G.E. Dustmuradov, R.O. Kholbekov, but they have not investigated the issues of accounting for tolling raw materials in oil refineries.

However, the issues of accounting for the costs of processing tolling (customer-owned) raw materials in the oil refining industry of the Republic of Uzbekistan have not been adequately reflected in the economic literature and in dissertation research, which proves inadequate theoretical and practical development of this problem.

Analysis and results

Currently the core problem for the refineries of the Republic of Uzbekistan is decline in the crude oil supply. There is not enough oil extracted in the republic for the operation

of domestic oil refineries. Another reason for the decline in oil refining volumes at oil refineries is the lack of own funds for the purchase of hydrocarbon raw materials. At "Bukhara Oil Refinery" LLC, loans received for the import of raw materials amounted to over 500 billion UZS at the beginning of 2020, which justifies the lack of free funds to purchase raw materials for the plant to operate at full capacity. Accounts receivable constitute about 25% of the company's current assets.

Another problem for refineries is the refining efficiency (oil conversion ratio). The industry needs technological upgrades, and this, in turn, require a great deal of expenses. In 2020, to solve this problem "Bukhara Oil Refinery" LLC signed contracts with "Axens" (France), "Amec Foster Wheeler – WOOD" (Great Britain), "Argus Media" (Great Britain), JV LLC "UzLITIengineering", "SK Engineering&Construction" (South Korea) for licensing and design of hydrocracking and isomerization units, marketing research, engineering surveys at construction sites.[*]

Moreover, in 2020 "Bukhara Oil Refinery" LLC signed an agreement with the South Korean company "SK Engineering&Construction" on the provision of engineering services, which envisages development of a basic design (FEED) for the modernization of "Bukhara Oil Refinery". The project is aimed at raising increasing refining efficiency (oil conversion ratio) of operating capacities from 79% to 95%, the yield of light oil products from 77% to 91% and manufacturing of oil products that meet the requirements of the Euro 5 standard.

In order to prevent further deterioration of the situation of enterprises, it is crucially important to find new forms of activity. One of the options for solving the above problems is provision by processing enterprises of services for the processing of customer's raw materials on a tolling basis.

However, currently many issues of accounting for operations for the processing of tolling raw materials in domestic oil refineries remain uncertain and require solution. Provision of services for the processing of hydrocarbon raw materials represents a rather specific type of service, the issues of documenting and accounting for them are not adequately revealed. Therefore, this fact causes a number of problems, for example, when determining the cost of processing services, determining the cost of products in case of replacing the shipped product range, with additional costs associated with shipment of products from the customer's raw materials (railway tariff, excise tax on excisable products). There is no approved method for calculating the prime-cost of processing tolling raw materials. In practice, a separate calculation of the cost of products manufactured from own and tolling raw materials is widely applied.

In our opinion, provision of services on the basis of a tolling transaction is quite profitable and net working capital can be actually economized. First of all, it is necessary to consider the impact on the organization of accounting of services for the processing of tolling raw materials of the technological features of the oil refining industry. At the beginning of 2021, the share of tolling raw materials processed at the refineries of the republic accounted for about 10% of the total amount of processed raw materials in "Bukhara Oil Refinery" LLC in 2020. Due to the fact that in the middle of the year "Uzbekneftegaz" JSC switched to the services of tolling raw materials, this figure increased up to 70% in October 2021.

[*]https://uzace.uz/uploads/files/2020/08/19/obzor-proektov-iyul-19082020_compressed_1597858629.pdf

Accounting for the costs of processing tolling (customer-owned) raw materials

According to the Regulation on the procedure for recording in accounting operations related to tolling raw materials №12 dated February 17, 2010 and the accounting policy of the entity, accounting of tolling (customer-owned) raw materials received from suppliers is kept on off-balance sheet account 003 "Materials accepted for processing", when the products manufactured from these raw materials are kept on off-balance accounts 002 "Inventory assets accepted for safekeeping" (according to sub-accounts by types of products). Accounting for the movement of tolling raw materials in accounting reports should be kept as a separate line. Accounting for costs in the production of tolling products is implemented at the last stage of the production cycle. The output of finished products is determined on the basis of the statutory acts that constitute an integral part of the above contracts and approved by the relevant specialists of the enterprise.

If an enterprise provides services to another entity, then, as a rule, the cost of services is calculated first. The list of all costs included in the cost price is regulated by the Regulation on the composition of costs for producing and sale of products (works, services) №54 dated February 5, 1999. With the aim of determining economically justified costs, there are compiled targeted regulatory documents that determine the limits (estimated norms) of expenses by types of work, industries, entities and services.

In order to determine the economic efficiency of making business transactions, the estimated and actual prime-cost of work (services) is calculated. The prime-cost of services for processing 1 ton of customer's raw materials is determined according to the following formula:

$$\boldsymbol{PC_{unit}} = \frac{\boldsymbol{C_{proc}}}{\boldsymbol{V_{proc}}} \quad (1)$$

here C_{proc} - amount of costs for processing of tolling raw materials formulated by the processing enterprise in the base period;

V_{proc} – Volume of processing tolling raw materials, tons.

The calculation of the prime-cost of own refined products is based on the volumes of purchased crude oil written off for processing on the date of receiving at the processing unit at the average purchase price.

For example, the "ELOU" installation unit (for oil desalting) at the refinery received purchased oil in the amount of 300 thousand tons at a price of 6 224.6 thousand UZS per 1 ton and tolling oil in the amount of 350 thousand tons without valuation (at a "zero" price) . After the desalination process, the cost is determined: purchased oil - the cost of raw materials plus the cost of processing at the "ELOU" installation unit, tolling oil - the amount of costs for processing at the "ELOU" installation unit.

Oil is supplied to the "ABT" (primary processing) unit at a certain cost, while the prime-cost of the resulting calculated products is calculated in reliance upon the cost formulated at the "ELOU" unit, the costs of processing at the "ABT" unit and subsequent costs.

At the beginning of each year, "Bukhara Oil Refinery" LLC approves the price of the cost of services for processing 1 ton of oil and gas condensate on tolling terms, and as of January 1, 2021 the price was calculated in reliance upon the actual data for the previous year and amounted to 681.5 thousand UZS.

A significant share in the cost of processing raw materials on a tolling basis for 1 ton of raw materials belongs to the production prime-cost - 296 thousand UZS (44%), then the period expenses - 272 thousand UZS (40%) and the rate of return for the enterprise - 114 thousand UZS (16%).

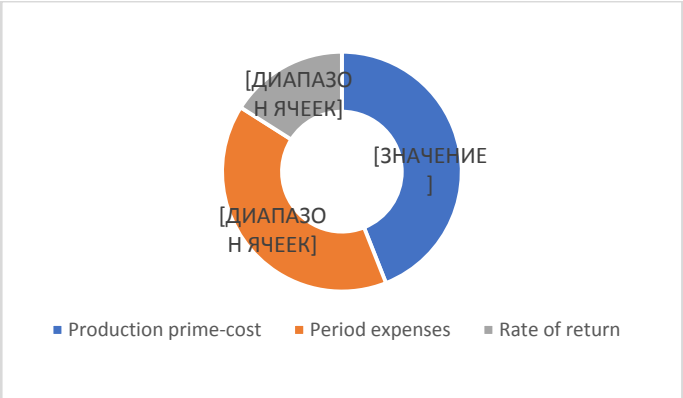

Figure 1. Composition of the cost of services at "Bukhara Oil Refinery" LLC for 2020

Source: compiled by the author on the basis of the data of "Bukhara Oil Refinery" LLC

As it has been mentioned earlier, currently there are no specific techniques for calculating the cost of services of tolling raw material at domestic enterprises and economists use the actual data for the past year and adjust the price for inflation. To calculate the cost of a service, first of all, it is required to calculate the production prime-cost of the service, where there is also no specific technique for its calculation. As a result, there is a need to use innovative techniques and methods for calculating the production prime-cost of the service of tolling raw materials and a fair price for customers, which should also be profitable for the enterprise. An enterprise can use a differentiated approach to calculate the cost by categories of customers depending on the utilization rate of the enterprise, which involves calculating the price of the service at variable costs, which, in turn, will reduce the price for services, but at the same time increase the production capacity of the enterprise.

The next step is the assessment of the customer's raw materials and there is made a forecast of the output of petroleum products from the raw materials. To ensure transparency and objectivity of the analysis performed at the laboratory at the enterprise, an agreement is concluded with an independent expert company with subsequent billing of costs to the customer.

Below is a table illustrating a comparison of the balances of the output of petroleum products manufactured from gas condensate delivered through the pipeline and brought in tank cars.

Table 1. Balance of petroleum products output

№	Product type	Output (%)	
		From the gas condensate (delivered by pipeline)	From the gas condensate (delivered in tank cars)
1	Auto petrol	74,66	53,65
2	Kerosene cut	9,88	15,97
3	Diesel fuel	9,12	18,88
4	Petroleum residue	1,40	6,56
5	Gas fuel + losses	4,94	4,94

Source: compiled by the author on the basis of the data of "Bukhara Oil Refinery" LLC

The actual output of products from the processing of tolling raw materials will be determined on the basis of determining the equivalent amount of products contained within

the volumes of processing of tolling raw materials and production of petroleum products for a specific range and quality of products. In the process of calculation, residual, by-products manufactured at installation units from tolling oil feedstock are not estimated. The amount of processing costs for technological processes is distributed to the calculated products and services in proportion to the volumes of purchased tolling raw materials, which are written off for production.

The cost of output of oil refining products from tolling raw materials in the range of products under the contract represents actual cost of services for the processing of tolling raw materials. However, when using this technique, the impact of the cost of own oil is big enough. In our opinion, this impact can be excluded by the technique of calculating the prime-cost of services for the processing of tolling raw materials, which provides for a unified procedure for writing off oil raw materials for processing in value terms, without subdividing into own and tolling, followed by excluding the prime-cost of tolling raw materials from the amount of the actual prime-cost of commercial products and determining the cost performed works (services). The use of this technique of calculation is proven by the fact that the production of refined products from raw materials to be supplied is performed in a single commodity flow with products of home manufacture. Tolling raw materials are written off to manufacturing process at the stage of primary technological processes in a conditional judgment. The basis for determining the average conditional price of raw materials written off to production process is the average price of similar purchased raw materials on the date the customer's raw materials have been written off to production. The use of the average price will eliminate the impact of oil prices on the prime-cost of services for the processing of tolling oil.

Conclusions and proposals

1. A number of problems, currently challenged by the refineries, have been identified in the process of the research: lack of financial resources, depreciation of the fixed assets used, short supply of raw materials. As a result, equipment downtime increases.

2. A detailed procedure for accounting for costs in the processing of tolling raw materials and the procedure for their reflection in accounting accounts are presented. As a case-study, the examples of calculating the prime-cost and price of services for the processing of raw materials of the customer and the output of products of tolling raw materials have been considered.

3. It is proposed to use a differentiated approach to calculate the prime-cost by categories of customers, depending on the utilization rate of the enterprise, which involves calculation of the price of services at variable costs, which, in turn, will reduce the price for services, but at the same time raise the production capacity of the enterprise.

4. The technique is proposed for calculating the prime-cost of services for the processing of tolling raw materials, which provides for a unified assessment of the costs of processing own and tolling raw materials, followed by subtracting the actual prime-cost of commercial products from the cost of tolling raw materials and determining the cost of work (services) performed, which will avoid the impact of oil prices on the cost processing services.

Reference:

1. Regulation (2010). Regulation on the procedure for recording in accounting operations related to tolling raw materials №12 dated February 17.
2. Regulation (1999). Regulation on the composition of costs for producing and sale of products (works, services) №54 dated February 5.
3. Drury K (1998). Introduction to management and production accounting. – M.: Audit, YUNITI.
4. Report (2020). Financial and statistical reporting of Ferghana Oil Refinery LLC for 2016-2020.
5. Report (2020). Financial and statistical reporting of Bukhara Oil Refinery LLC for 2016-2020.