

Technique of Definition of Costs on Separate Kinds Mining Chemical Products by Their Complex Processing

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ABSTRACT: In a process of complex processing of coal several kinds of products are produced. And it is difficult to determine costs for separate kinds of the production, because costs proceed simultaneously for all products. In the paper worked out method is presented of determination of costs on separate kinds of production, when complex processing of coal in conditions of market economy. It consists of several operations. The offered method needs no corrections of costs by quality of producing products, physic-chemical parameters etc.. as the prices are taken by analogous quality or are re-counted in correspondence with heating value.

I INTRODUCTION

The most full analysis of all methods of determination of costs on separate kinds of coal-chemical products when complex processing of coals was carried out by authors (Lipovitch et al. 1988)

It is known that methods of distribution of total costs between received products of coal processing may be divided in two groups:

1. Method of subtraction of costs on accompanying production and using waste from total costs.
2. Method of division of costs between producing kinds of production on the basis of physical and cost criteria.

Method of subtraction of costs is based on two operations:

a) estimation of costs on kinds of products by selling price or production cost of analogous products, which is produced by using of traditional methods of production;

b) subtraction of these costs from total costs on the main and accompanying production and industrial waste.

In correspondence with branch instructions the main kinds of production are coke, semi-coke (special coke), synthetic gas and synthetic liquid fuel (SG and SLF). Other production, receiving when complex processing of coal (residual oil, coal tar, paraffin and so on) are classified as accompanying products. Mineral raw materials, which remain after receiving of the main and accompanying products when complex processing of coal, are industrial waste.

Essence of method of proportional division of costs includes a sequence of the following operations:

- definition of the main indexes of products' quality and directions of their using;
- definition of share of industrial products or coefficients, which are determined on the basis of different data (planned prices, duration of production cycle, labour costs, value of useful components, which went from original mineral raw materials to products);
- distribution of total costs proportionally with share or coefficients.

Disadvantage of the method of subtraction of costs is impossibility of determination of costs of every kind of the main production.

Disadvantage of the method of division of costs is a fact that not always share of producing different kinds of production characterizes costs and price, and also their quality and direction of using. Besides, when complex producing of products it is difficult determining planned prices if we don't know costs for separate kinds of products - it is vicious circle.

Common disadvantage of these methods is their difficulty and impossibility to take account of world tendencies in changing of demand for the products and distinction in their world costs, when producing, in individual costs for separate product (Volkov 1995).

2 DESCRIPTION OF THE METHOD

When creating of more precise method of determination of economic indexes of separate kinds of products when complex processing of coal we take account of the following requirements:

- simplicity of a method;
- achievement of the main objective - determination of individual costs for separate products when their complex producing:
 - taking account of world tendencies in improvement of technology of producing of these products;
 - taking account of real natural and social conditions of competitive producing of these products.

On the basis of these requirements the method of coefficients, which are calculated on the base of world prices for products, is offered for determination of costs for separate kinds of products when their complex producing. And for determination of today's costs prices of the last year are being taken as a base for calculation; for determination of tendencies of producing and demand for production prices of several years are taking into account (separate or average).

Worked out by us method of determination of costs for separate kinds of products when their complex producing, includes the following operations:

market prices are determined of all kinds of products when complex their producing (P_1, P_2, \dots, P_n)

total price is calculated of a complex of products, that is:

$$\sum_{i=1}^n P_i \quad (1)$$

- price coefficients are calculated of all kinds of products in a complex by a formula:

$$K_i = \frac{P_i}{\sum_{i=1}^n P_i} \quad (2)$$

price coefficients are verified and corrected by a formula:

$$\sum_{i=1}^n K_i = 1 \quad (3)$$

total costs are determined of all complex products - C ;

- separate (individual) costs of all kinds of products are determined by a way of multiplying total costs by price coefficients: $C_i = CK_i$;

costs of separate kinds of products are verified and corrected by a formula:

$$\sum_{i=1}^n C_i = C \quad (4)$$

The offered method needs no verifying and correction of costs by quality of producing products, so as prices are taken by an analogous quality (Kolosov 1987).

In a case, when $C < (0.8 + 0.9) \frac{1}{1.1} R$, this production will be profitable and a recoupment period will be quite enough for creditors, investors and businessmen. If costs of all complex products C will be equal or more than total price of all complex products $\sum P_i$, it is necessary to look for ways of decreasing of costs of their producing or not carry out complex producing of products, waiting for decreasing prices for these products at the world market.

3 CONCLUSIONS

Worked out method of determination economic indexes of separate kinds of products when complex processing of coal includes some step-by-step operations: determination of market prices, calculation of price coefficients, determination of total costs of all complex of producing products, corrections of separate stages. The offered method conforms to modern requirements of market economy.

REFERENCES

- Kolosov A.V. 1987. Ecological-economic principles of development of mining production. Moscow: Nedra. p. 261
- Lipovilci V.G. & Kolobin G.A. & Konetchits I.V. 1988. *Clinnislrvtmtl totil pmtel.imx*. Moscow. Chemistry, p. 336.
- Volkov V.N.. 1995. Geology and saving of resources of coals (deposits of thick coal seams). Leningrad: Nedra. p. 216.