Materials of Conferences

ESTIMATION
OF THE ECONOMIC EFFICIENCY
FOR THE CHEMICAL INDUSTRY

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Project selection and estimation of investment attractiveness is one of the main problems in chemical industries.

Therefore, the decision maker person must make a choice between the current orders, based on criteria of economic efficiency [1].

Such problem selection is formulated as follows.

It is necessary to find a method of organization the chemical industry for the specified order $S_p = (Q^p, T^p)$ under the conditions:

$$CF \rightarrow \max; \qquad (1)$$

$$NPV > 0 \wedge NPV \rightarrow \max; \qquad (2)$$

$$PI > 1 \wedge PI \rightarrow \max; \qquad (3)$$

$$PBP \rightarrow \min; \qquad (4)$$

$$BEP \rightarrow \min; \qquad (5)$$

$$VS_j^p \subset VS^Z; \quad X_j^p \subset X^Z; \quad T_f^p \leq T^p; \quad Q_f^p = Q^p, \qquad (6)$$

where CF – Cash Flow; NPV – Net Present Value; PI – Profitability Index; PBP – Pay-Back Period; BEP – break-even point [1]; $VS_j^p = \left\{ VS_1^p, ..., VS_j^p, ..., VS_J^p \right\}$ – aggregate of standard sizes of devices on j stage for p product; VS^Z – aggregate of standard sizes of devices available in the company; $X_j^p = \left\{ X_1^p, ..., X_j^p, ..., X_J^p \right\}$ – type of main device on j stage for p product; X^Z – basic types of devices available in the company; T_f^p – planned duration of release of p product; T^p – release date of p product under the contract; Q_f^p – production volume of p product under the planned duration of release T_f^p; Q^p – production volume of p product under the contract.

Thus, solving the given task, the company's management will be able to evaluate the currently available offers for the production of products and select the most cost-effective.

References

1. Daskovskiy V. Assessment of investment projects on the basis of production efficiency / V. Daskovskiy, V. Kiselyov. – National Institute of Economics (NIEc), 2010. – 28 p.