Feasibility analysis of the installation for the nitrogen liquefaction

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The article presents the results of feasibility analysis and calculation of the production cost and cost of using the installation for the nitrogen liquefaction. The particular urgency of solving this problem is associated with both the technical and economic rationale for the optimum heat exchangers (HE) choice to support the overall effectiveness and expediency of their production and operation. For performing the analytical substantiation the dependence of the cost per unit on the electricity cost and the HE cost per unit used in the installation of this type is determined in the article to significantly improve the energy efficiency. For clarity, the article provides the diagram and description of the installation for nitrogen liquefaction, its technical parameters and the potential to increase economic efficiency. Structural diagram of the coil HE shown in the article is supplemented by calculations of the geometric parameters, presented in the tables. In support of commercial efficacy parameters estimated payback period of the installation and profit opportunities are presented. The technique for calculating the commercial factors as payback period, profit etc. is given in the respective tables.

Keywords: *feasibility analysis, nitrogen liquefier, annual cost per unit, technical analysis, economic design, commercial efficacy parameters.*

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