

EVALUATION OF FUEL AND ECOLOGICAL EFFICIENCY OF USING OF BIOFUEL FOR STATIONARY DIESEL-GENERATOR

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In the work two stationary models of exploitation of a stationary diesel-generator for continuous long-term supply of electricity to enterprises and household that contains 24 polygons of equal length are proposed. They were built on the basis of averaged schedules of distribution of magnitudes of diesel engine effective power of such power plant during the day according to the data of firm VADO Technical Investment GmbH.

It was proposed to feed the diesel engine as part of the electric generating power plant to use motor fuel of biological origin as the renewable energy resource with taking into account physical and chemical properties of such fuel as well as their influence on the toxicity indicators of exhaust gases.

It was proposed for assessment of ecological safety level of exploitation process of diesel-generator on both developed exploitation models and at application of different types of motor fuels to use the modified mathematical apparatus of prof. Parsadanov fuel and ecological criterion.

According to the results of the analysis of the data of the calculated complex criteria based evaluation a comparative description of quantitative and qualitative aspects of operation of diesel-generator on both developed exploitation models was carried out with taking into account the effects of transferring it to the use of a renewable energy source.

This results illustrated on Fig. 1.

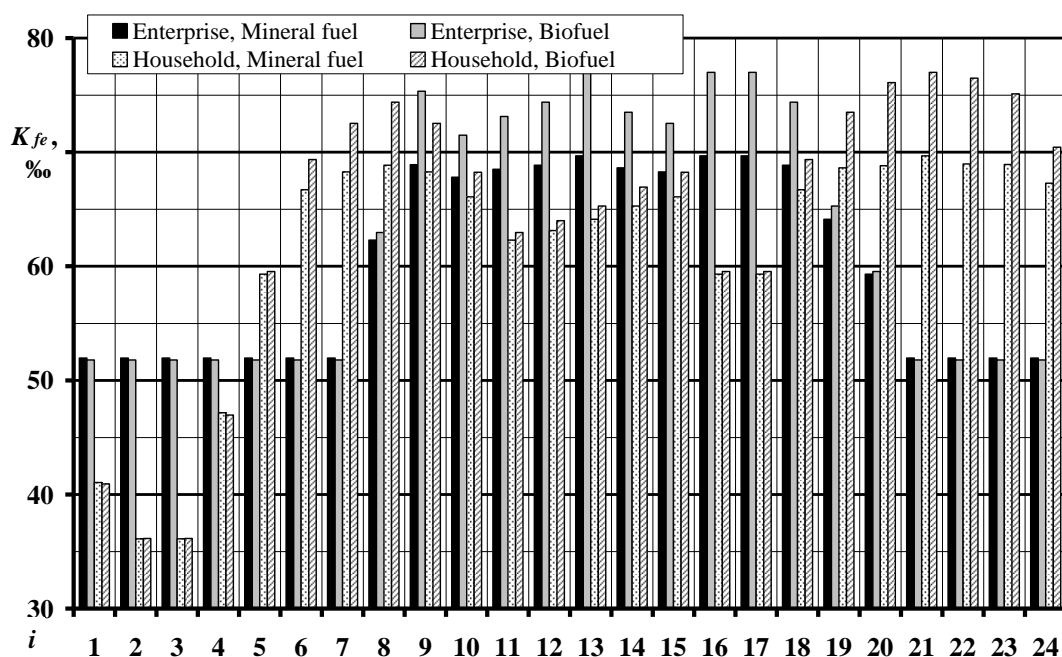


Fig. 1 – Results of the calculation evaluation