

Techno-economic evaluation of waste lube oil rerefining

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Abstract

This paper discusses the secondary use of used automotive lubricating oils. Current technologies for processing waste lube oil into new lubricants is outlined and the performance features of these products are compared with that of virgin materials. Process technology of Meinken and Mohawk were selected for techno-economic evaluation. A plant size of 50 000 TPA waste oil re-refining was considered for economic study of these processes. The estimated production cost for Meinken process was found to be \$348.8 per ton and for Mohawk process, assuming hydrogen supply to be made available from adjacent refinery, it was estimated to be \$198.4 per ton. Meinken process appears to be more popular but profitability was found to be lower than Mohawk. Mohawk process is limited due to location factor which requires hydrogen from an adjacent petrochemical plant.

Keywords: Rerefining; Lube oils; Energy utilization; Pollution control
