Techno-economic Analysis of The Briquette Business from Mahogany Sawdust Waste Using and Jatropha Leaves Adhesive

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ABSTRACT

Techno-Economic Analysis aims to analyze the feasibility of the biobriquette business by analyzing the quality of the briquettes produced and all costs incurred in the process of making briquettes. The briquettes produced in this study used 90% mahogany sawdust charchoal and 10% jatropha leaves as an adhesive. The quality of briquettes with 60% of compression, has 0.91 g/cm^3 density, 0.301 gr/cm^3 density of kamba, 1.925 kg/cm^2 compressive strength, and 0.0054 gr/s burning rate. This study aims to determine the techno-economic feasibility of the biobriquette business from mahogany sawdust with jatropha leaf adhesive whether it is feasible or not to run with several criteria including the Rp. 6994,907/kg Cost of Production (HPP), 12.389,633 kg and Rp. 96.037.670,51, Break Event Point (BEP), 2.32 years Payback Period (PP), which means that capital will return within 2 years 3 months 25 days. Net Present Value (NPV) is Rp. 163.915.421 which has a positive value so the project is feasible, the Internal Rate of Return (IRR) is 32,403% which is greater than the specified interest rate so the project is feasible, the Benefit Cost Ratio (BCR) is 1,4296 > 1, so the investment is feasible run. The economic value of mahogany sawdust briquettes is 600.8 cal/Rp which is more expensive than LPG which is 1,608 cal/Rp but cheaper than electric stoves but the cost of LPG has a subsidy from the government almost 71%. Mahogany sawdust briquettes compared to coconut shell briquettes at the same price have a higher calorific value and a much longer burning time.

Keywords : briquettes, jatropha leaf, mahogany sawdust, techno-economic