

Techno-economic Analysis Of The Briquette Business From Coffee Peel Waste With Banana Peel Adhesive

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ABSTRACT

The tecno-economic is used to analyzing the properness briquettes business by characterize quality of the briquettes and every expenses briquettes many process. The briquettes that produced in this study is using 75 % coffe husk and 25 % banana peel as adhesive. The quality of briquettes was 4.07 % ash content, calorific value of 6,429 cal/g, 8,76 % water content, and 0.0581 g/s of combustion rate. The overall techno-economic analysis regarding the feasibility of investing in coffee waste briquettes with banana peel adhesive was carried out by several criteria, including the Cost of Production (HPP) of Rp. 3,307.7642/kg, BEP (Break Event Point) of 11,081.5098 kg and Rp. 93,972,346.15, Pay Back Period (PBP) of 1.51 which means the startup capital will return within 1 years 6 months 4 days, Net Present Value (NPV) of Rp. 511,972,895.6 which has a positive value so that the project is feasible to be implemented, and the Benefit Cost Ratio (BCR) of $1.5 > 1$ means that the investment is feasible. The price per calorie of LPG is cheaper than coffee husk briquettes and electric stoves, which is 1,608 kal/Rp. However, the economic value of coffee husk briquettes is cheaper than electric stoves of 1,169 kal/Rp. Coffee husk briquettes when compared to coconut shell briquettes are much cheaper and have a higher calorific value.

Keywords : briquettes, coffee husk, banana peel, techno echonomic analysis