Pembuatan Biobriket Berbahan Serbuk Gergaji Pohon Sengon Dengan Campuran *Plastik Low Density Polyethelyne* Menggunakan Perekat Molase.

(*Fabrication of Biobriquettes from Sengon (Falcataria moluccana) Sawdust and LDPE Plastic Waste Using Molasses as Binder*)

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ABSTRACT

Energy and waste issues have become major concerns, driving the search for environmentally friendly alternative energy sources. This research aims to analyze the characteristics and determine the best composition of biobriquettes made from sengon wood sawdust mixed with Low Density Polyethylene (LDPE) plastic and molasses as a binder. The experimental method used three composition variations: V1 (85% raw material : 15% binder), V2 (80% raw material : 20% binder), and V3 (75% raw material : 25% binder). The parameters tested included moisture content, ash content, volatile matter, fixed carbon, calorific value, density, bulk density, and burning rate. The results showed that the V2 composition produced the best performance, with the highest calorific value of 7635.94 cal/g, moisture content of 3.08%, ash content of 5.08%, volatile matter of 50.59%, fixed carbon of 41.25%, density of 0.986 g/cm³, bulk density of 0.263 g/cm³, and a stable burning rate. All compositions met the Indonesian National Standard (SNI 01-6235-2000) for charcoal briquettes. Therefore

***Keywords**: Biobriquette, Renewable Energy, Molasses, Calorific Value, LDPE Plastic, Sengon Sawdust.*