ECO-BRIQUETTE FROM COMPOSITE OF COFFEE HUSK, SLUDGE WWT PT SIER, AND LDPE PLASTIC WASTE

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Abstract
Organic matter from agricultural waste, such as coffee husk, can be used as a source of renewable energy. Coffee husk can be used as a briquette material because of its high energy content value, it is 4.346,16 kal/g. Organic matter from industrial activities, such as WWT sludge, can be used as briquette material. It is already known that plastic has high energy content. This study added plastic waste as a briquette material for increasing energy content from briquette composit of coffee husk and sludge. The other purpose of plastic added is reducing amount of plastic waste.
The aims of this research are analyzing the influence of composition and characteristic from the best eco-briquette with coffee husk, WWT sludge, and LDPE plastic waste.
Variables used for this research were the method of briquetting process and briquette composition. Carbonization and non carbonization were the method used to made eco-briquette from coffee husk, WWT sludge, and LDPE plastic waste. Parameters used for this research were briquette quality test, cost product, and emission test.
This research shows that K1 which composition of 32% plastic LDPE, 48% carbonization sludge and 20% carbonization coffee husk has high energy content of 5.416,28 kal/g. The other result of this research shows emission of eco-briquette K1 is lower than other composition of briquette. Both of these result show
that eco-briquette K1 is the best briquette composition. Cost product needed for producing eco-briquette K1 is Rp 3.226,45/kg.

**Key words**: eco-briquette, coffee husk, sludge WWT PT SIER, and LDPE plastic waste