

ABSTRACT

Bandung Regency population reached 3.776.724 people which the potential waste generated is high. In this current situation, waste utilization in Bandung is not optimal because the waste is only disposed of in landfill. The waste problem in Bandung Regency can be utilized with advanced technology so that it has potential economic value and technical benefit value. In this study, a study was carried out on the potential in the waste contained at Sarimukti Final Disposal Site in Bandung Regency. Bandung peak produces 2000 tons of waste per year or 0.63 tons per day. With a population growth rate of 0.23% and a total waste that can be burned as much as 50%, then it is estimated that the waste burned is 1000 tons per day for 8 MW power plant with grate incineration. There are two studies used in this research study. The first study is to calculate a rough estimate of calorific production and estimation of electricity potential generated from potential waste in Bandung Regency. While the second research is a study of the investment of the waste power plant establishment project from the potential waste at the Bandung Regency by calculating the Net Present Value (NPV), Internal Rate of Return (IRR), Payback Period (PP), and Leveled Cost of Energy (LCOE). Revenue income in this project is electricity sales, fly ash sales, bottom ash sales, and tipping fee subsidies. Tipping fee subsidy is given by the government to manage waste to be burned in waste power plant. Tipping fee made big impact for feasibility of operation waste power plant because energy and fly ash bottom ash sales can't cover the operation and paid the initial investment. The minimum subsidy paid for the tipping fee is 50% of the total tipping fee that has been regulated by the local government because when it is below that the NPV obtained is below 0. The maximum subsidy paid for tipping fee 100% of total can be obtained NPV Rp. 194.136.544.936,-, IRR 10,09% and BEP 12 years.

Keyword: Waste Power Plant, Calorific Value, Electricity, NPV, IRR, PP, LCOE