

ABSTRACT

THE ECONOMIC POTENTIAL STUDY OF PALM OIL MILL WASTE INTEGRATED TREATMENT ON 24 TONS SCALE OF EFB/YEAR

By

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The purpose of this study was to analyze the economic potential and the feasibility of Palm Oil Mill Effluent (POME) and Empty Fruit Bunches (EFBs) integrated treatment to produce biogas and organic fertilizer (compost and liquid fertilizer) on 24 tons scale of EFB/year. The research was conducted by using survey method and study of literature then discussed in the description. The results showed that the biogas from POME anaerobic treatment and EFBs anaerobic composting with inoculum digestate (effluent) was 34,0329 m³ biogas/tonFFB, equivalent to 42.54 KWH of electricity (Rp41.052,19) or equivalent to 21,1L of diesel fuel (Rp 232.104,38). The composting of EFBs can produce compost as much as 268,92 kg/tonFFB or Rp1.532.821,20/tonFFB and accordance to SNI 19-7030-2004 about the specifications of organic compost, meanwhile the liquid fertilizer can not be applied to the land yet, because it has not suited to manual requirement and allowance procedure of POME implementation to land in palm oil plantation (Ministry of Environment decree number 28, 2003). Biogas that is equivalent to electrical energy deserve to be

developed based on criteria NPV Rp134.037.460,4; Net B / C ratio 1.41; IRR 23%, and PP over 3,85 years. Biogas that is equivalent to diesel fuel value deserve to be developed based on criteria NPV Rp244.332.494,6; Net B / C ratio 1.75; IRR 29%, and PP over 3,24 years.

Keywords: *economic potential, integrated waste treatment, biogas, compost*