

Studi Potensi Biogas Sebagai Energi Alternatif Dari Timbunan Sampah Di TPST Bantargebang (*Study Of The Potential of Biogas as an Alternative Energy from Waste Piles at The Bantargebang TPST*)
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ABSTRACT

Sanitary Landfill is a method to reduce and control environmental impact by accelerating the natural recycling of discarded waste. The Bantargebang Public Waste Treatment Plant (TPST) contains waste from DKI Jakarta, five processing sites covering an area of 85 hectares, and waste from Bekasi City, one processing site covering an area of 27 hectares. The gas content in the biogas produced depends on the type and composition in the landfill. The purpose of this study was to observe the content in biogas produced in landfills in Bantargebang TPST cells, Bekasi. The research methods used are analytical descriptive methods with sample analysis, proximate analysis (moisture content, ash content, volatile substances and waste calorific value), ultimate analysis (content of C, H, O, N and S elements), and gas chromatography test. This energy potential study method uses ultimate analysis to determine the C, H, O, N, S elements and ash from the composition of waste. The composition of waste includes biodegradable waste, paper, plastic, cloth / textile, rubber / leather, wood / the like, glass / glass, metal and others. Based on the results of laboratory tests, it was found that the composition of the litter. The value of C, H, O, N, S and ash elements from each type of waste composition is calculated so that the molecular formula of mixed waste at the Bantargebang landfill is calculated based on the formula of Tchobanoglous for biodegradable waste, it is obtained at the carbon dioxide gas content of 3295341.30 m³/day. The methane content is 4480073.16 m³/day. While the ammonia content is 141.031,39 m³/day. The largest element content is owned by waste that is easily decomposed, which means that waste is easily decomposed faster by microorganisms than other types of waste. While the lowest element content is owned by the type of fabric/textile waste, which means that this type of waste will be difficult and long decomposed.

Keywords: Ultimate Analysis, Biogas, Waste, Bantargebang Landfill