

Studi timbunan komposisi dan potensi sampah sebagai bahan baku refuse derived fuel studi kasus tps meruya utara = Study of generation composition and solid waste s potential to be the raw material of refuse derived fuel case study tps meruya utara

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Abstrak

Timbunan sampah di Jakarta adalah sebesar 6356,88 ton/hari pada tahun 2013. Harus dilakukan pengolahan sampah untuk menangani masalah tersebut. Salah satu caranya adalah dengan mentransformasi sampah menjadi energi, yaitu menjadi refuse derived fuel (RDF). Penelitian ini dilakukan di TPS Meruya Utara untuk menguji potensi sampah di TPS tersebut untuk dijadikan RDF. Berat timbunan sampah dan komposisi sampah di TPS Meruya Utara diteliti pula untuk menjadi pertimbangan dalam menyusun sampel RDF yang nantinya akan diuji potensinya. Sampel RDF dibentuk dari 45% sampah plastik, 25% sampah kertas, 15% sampah organik yang sudah dikeringkan secara aerobik selama 3 hari, dan masing-masing 5% sampah kayu, kain, dan karet. Potensi sampah tersebut dapat diuji dari berbagai parameter. Parameter yang diuji di dalam penelitian ini adalah nilai kalor, kadar air, kadar volatil, kadar abu, dan kadar klorin. Dari penelitian ini didapatkan nilai kalor sampel adalah 16,69 MJ/kg, kadar air sebesar 18,14%, kadar volatile sebesar 81,15%, kadar abu sebesar 11,83%, dan kadar klorin 0,01%.

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Jakarta's solid waste generation is 6355,88 tonnes/day in 2013. A solid waste management needs to be applied to solve this problem. One way to do it is to transform solid waste into energy, which is to become refuse derived fuel (RDF). This research was done in TPS Meruya Utara to test the solid waste's potential in it to become RDF. Solid waste generation and solid waste composition was also inspected, because it would be considered in designing the sample composition that would be tested. The sample composition was formed from 45% plastic, 25% paper, 15% organic waste which had been dried aerobically for 3 days, 5% wood, 5% textile, and 5% rubber. The solid waste potential to be RDF can be tested from any kind of parameters. In this research, the parameters that were used were heating value, water content, volatile matter, ash content, and chlorin content. From this research, the calorific value was 16,69 MJ/kg, the water content was 18,14%, the volatile matter was 81,15%, the ash content was 11,83%, and the chlorine content was 0,01%.