

Analisa Timbulan Limbah Baterai dan Rekomendasi Pengolahan Skala Wilayah (Studi Kasus: Jakarta Timur) = Analysis of Battery Waste Generation and Recommendations for Scale Processing Region (Case Study: East Jakarta)

Anggi Nabila, author

Deskripsi Lengkap: <https://lib.ui.ac.id/detail?id=9999920545021&lokasi=lokal>

Abstrak

Saat ini, belum adanya data yang secara spesifik dan fakta menggambarkan berapa timbulan limbah baterai yang dihasilkan di Jakarta khususnya Kota Jakarta Timur. Keterbatasan data seringkali menyulitkan pihak pendaur ulang untuk menentukan kapasitas dari fasilitas daur ulang limbah baterai. Dengan demikian, dibutuhkannya penelitian untuk mengukur timbulan dan komposisi jenis limbah baterai sehingga dapat dilakukannya perencanaan fasilitas daur ulang limbah baterai Skala Wilayah di Jakarta Timur. Timbulan dan komposisi jenis limbah baterai dapat diperoleh dengan sampling di 60 rumah tangga selama 30 hari. Sedangkan kapasitas daur ulang limbah baterai dapat diperoleh melalui perhitungan proyeksi penduduk dan proyeksi timbulan limbah baterai yang ada di Jakarta Timur selama 10 Tahun mendatang (2024-2034). Berdasarkan hasil sampling 60 KK, diperoleh timbulan limbah baterai sebesar 3398,88 gram dengan jumlah baterai sebanyak 193 unit. Jenis baterai yang terkumpul antara lain: baterai ukuran AA sebanyak 135 unit, AAA sebanyak 48 unit, C sebanyak 2 unit, D sebanyak 2 unit, baterai kancing/baterai jam sebanyak 3, baterai li-ion sebanyak 1 unit, baterai Hp sebanyak 1 unit, dan powerbank sebanyak 1 unit. Timbulan limbah baterai AA di Jakarta Timur diperoleh sebesar 68 ton/tahun, sehingga kapasitas pengolahan limbah baterai yang direkomendasikan adalah 85 ton/tahun dengan pendapatan kotor untuk pemulihan Zn sebesar Rp440.123.254 per Tahun dan untuk pemulihan Mn sebesar Rp855.740 per tahun. Berdasarkan hasil tersebut, dapat diketahui bahwa daur ulang baterai primer/sekali pakai memiliki potensi ekonomi yang dapat menguntungkan perekonomian dan lingkungan.

.....Currently, there is no specific and factual data depicting the amount of battery waste generated in Jakarta, particularly in East Jakarta. This data limitation often makes it difficult for recyclers to determine the capacity of battery waste recycling facilities. Therefore, research is needed to measure the quantity and composition of battery waste to enable the planning of regional-scale battery waste recycling facilities in East Jakarta. The quantity and composition of battery waste can be obtained by sampling 60 households over 30 days. The recycling capacity of battery waste can be determined through population projection and battery waste projection in East Jakarta over the next 10 years (2024-2034). Based on the sampling of 60 households, a total of 3,398.88 grams of battery waste was obtained, comprising 193 battery units. The collected batteries included 135 AA batteries, 48 AAA batteries, 2 C batteries, 2 D batteries, 3 button/watch batteries, 1 li-ion battery, 1 mobile phone battery, and 1 power bank. The annual AA battery waste in East Jakarta was estimated at 68 tons. Therefore, the recommended battery waste processing capacity is 85 tons per year, with a gross income for Zn recovery of Rp440,123,254 per year and for Mn recovery of Rp855,740 per year. Based on these results, it can be concluded that recycling primary/single-use batteries has the economic potential to benefit both the economy and the environment.