Analisis potensi penghematan energi proses kominusi pada divisi konsentrasi pabrik pengolahan mineral tembaga = Energy saving potential analysis of The comminution process in the concentration division of copper minerals processing plant

Sri Harjanto, author

Abstrak

Analisis potensi penghematan energi dan penghematan biaya dilakukan pada proses Kominusi, divisi konsentrasi pabrik pengolahan tembaga di Indonesia. Estimasi perhitungan dilakukan dengan pendekatan perhitungan slurry heat capture ratio dan efisiensi Carnot. Hasil perhitungan dan analisis menunjukkan bahwa panas hasil proses Kominusi berpotensi untuk dikonversi menjadi energi listrik, dengan estimasi efisiensi konversi sebesar 70%. Dalam hal ini, panas yang dihasilkan dari Ball Mill memiliki potensi lebih tinggi dibandingkan Semi Autogenous Mill. Sedangkan, potensi energi Listrik hasil konversi panas limbah proses Kominusi diperkirakan sebesar lebih dari 2 GWh/tahun, sedangkan potensi biaya yang bisa dihemat mencapai sekitar 0,2 juta USD/tahun.

..... An analysis of the potential for energy and cost savings was conducted on the comminution process in the concentration division of copper minerals processing plants in Indonesia. Estimated calculations were carried out using the slurry heat capture ratio approach and Carnot efficiency calculations. The results of the calculation and analysis show that the thermal/heat from the comminution process has the potential to be converted into electrical energy, with an estimated conversion efficiency of 70%. In this case, the heat generated from the Ball Mill has a higher potential than the Semi Autogenous Mill. Meanwhile, the potential for electrical energy from the conversion of Kominusi process waste heat is estimated at more than 2 GWh/year, while the potential costs that can be saved reach around 0.2 million USD/year.