Analisis Teknis dan Ekonomi Cofiring PLTU Batubara Kapasitas 660 MW di Provinsi Jawa Timur = Technical and Economic Analysis of Cofiring the Coal Fired Steam Power Plant with a capacity of 660 MW in East Java Province

Widya Faisal Wahyudi, author

Abstrak

Penelitian Cofiring PLTU Existing dengan biomassa berupa serbuk gergaji dengan persentase campuran 5% dilakukan dengan tujuan utama mengejar percepatan target bauran energi terbarukan sebesar 23% (Green Booster) pada tahun 2025. , dengan biaya investasi minimum. Pada tahap awal kegiatan, akan dilakukan pengujian dan analisis pengaruh cofiring terhadap beberapa parameter utama kinerja PLTU Existing dengan Gross Power Output 635 MW di Jawa Timur. Selain itu juga sekaligus untuk mendapatkan gambaran dan evaluasi apakah cofiring plan akan dilaksanakan melalui evaluasi teknis operasional, biaya produksi dari aspek biaya bahan bakar (komponen C) dan emisi gas buang terhadap lingkungan. Dari hasil monitoring beban operasi sekitar 635 MW (gross) menggunakan cofiring 5%, dapat diketahui bahwa titik-titik kritis seperti temperatur main steam, tekanan main steam, temperatur outlet gas economizer, temperatur mill outlet tidak menunjukkan pengaruh yang signifikan. meningkat, artinya masih dalam batas operasi, wajar dan aman. Dari perhitungan harga pokok bahan bakar, harga batu bara Rp 594/kg, dan harga serbuk gergaji Rp 472 Rp/kg (on site) dengan menggunakan selisih SFC 0,0077 kg/kwh, dan asumsi CF 80%, maka dengan rata-rata produksi listrik tahunan sebesar 4.415.040.000 kwh/tahun akan diperoleh penghematan bahan bakar sekitar Rp35,32 miliar Rp/tahun.

.....Research on Cofiring of the Existing Coal Fired Power Plant with biomass in the form of sawdust with a mixture percentage of 5% was carried out with the main objective of pursuing the acceleration of the renewable energy mix target of 23% (Green Booster) by 2025, with minimum cost investment. At the initial stage of the activity, testing and analysis of the effect of cofiring will be carried out on several main parameters of the Existing CFSPP’s performance with 635 MW Gross Power Output in East Java. In addition, it is also at the same time to get an overview and evaluate if the cofiring plan will be implemented through technical operational evaluations, the cost of production from the aspect of fuel costs (component C) and exhaust emissions to the environment. From the results of monitoring the operating load at around 635 MW (gross) using 5% cofiring, it can be seen that critical points such as main steam temperature, main steam pressure, gas economizer outlet temperature, mill outlet temperature do not show a significant increase, meaning they are still within the operating limits, reasonable and safe. From the calculation of the cost of fuel, the coal price is IDR 594 Rp / kg, and sawdust price of IDR 472 Rp / kg (on site) using the SFC difference of 0.0077 kg / kwh, and the CF assumption of 80%, then with an average annual electricity production of 4,415,040,000 kwh.