

**ABSTRAK**  
**ANALISA EFISIENSI MOTOR INDUKSI 315 kW SEBAGAI**  
**PENGERAK *BELT COVEYOR* PADA *COAL HEANDLING FACILITY***  
**(CHF) PT. BUKIT ASAM Tbk.**

(2025: xv + 50 Halaman + Daftar Gambar + Daftar Tabel + Lampiran)

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Penelitian ini bertujuan untuk menganalisis efisiensi dan rugi-rugi daya pada motor induksi tiga fasa 315 kW yang digunakan sebagai penggerak belt conveyor di Coal Handling Facility (CHF) PT. Bukit Asam Tbk. Motor induksi memiliki peran penting dalam proses transportasi batubara sehingga kinerjanya perlu dievaluasi untuk memastikan operasi yang efisien dan andal. Metode penelitian yang digunakan meliputi observasi lapangan, studi literatur, dan wawancara. Data penelitian diperoleh melalui pengukuran arus, tegangan, dan faktor daya selama periode 27 April hingga 1 Mei 2026. Analisis dilakukan menggunakan metode Voltage Compensated Ampere Ratio untuk menentukan faktor beban dan efisiensi motor. Hasil penelitian menunjukkan bahwa motor memiliki nilai efisiensi rata-rata sebesar 93,2% dengan rugi-rugi daya rata-rata sebesar 9.127,8 Watt. Berdasarkan standar IEC 60034-30-1, nilai efisiensi tersebut termasuk dalam kategori IE2 (High Efficiency). Hasil ini menunjukkan bahwa motor masih bekerja dengan baik, efisien, dan mampu mendukung kelancaran proses produksi batubara.

**Kata Kunci:** Motor Induksi, Efisiensi, Belt Conveyor, Rugi-rugi Daya, IEC 60034-30-1

## **ABSTRACT**

### ***EFFICIENCY ANALYSIS OF 3 15kW INDUCTION MOTOR AS A BELT CONVEYOR DRIVE AT COAL HANDLING FACILITY (CHF) PT. BUKIT ASAM Tbk.***

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*This study aims to analyze the efficiency and power losses of a 315 kW three-phase induction motor used as a belt conveyor drive at the Coal Handling Facility (CHF) of PT. Bukit Asam Tbk. The induction motor plays a crucial role in the coal transportation process; therefore, its performance must be evaluated to ensure efficient and reliable operation. The research methods employed include field observation, literature study, and interviews. The data were obtained through measurements of current, voltage, and power factor during the period of April 27 to May 1, 2026. The analysis was conducted using the Voltage Compensated Ampere Ratio method to determine the load factor and motor efficiency. The results indicate that the motor achieved an average efficiency of 93.2% with an average power loss of 9,127.8 Watts. Based on the IEC 60034-30-1 standard, this efficiency level falls into the IE2 (High Efficiency) category. These findings demonstrate that the motor operates efficiently, maintains good performance, and effectively supports the continuity of coal production activities.*

***Keywords:*** Induction Motor, Efficiency, Belt Conveyor, Power Losses, IEC 60034-30-1