

***Electrical Energy Audit on Lighting Systems and Training Equipment at the
Situbondo Vocational Training Center***

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ABSTRACT

This research analyzed the excessive electricity consumption at Situbondo Vocational Training Center (BLK), totaling 10,099 kWh/month (Rp 17,173,555), which significantly exceeds efficiency standards. The study aimed to identify energy usage patterns in lighting and training equipment, find efficiency opportunities if Energy Consumption Intensity (ECI) exceeded standards, and determine the building's ECI. Employing a quantitative method with direct observation, interviews, Lux Meters, and Clamp Meters, the research conducted an initial energy audit per SNI 6196:2011 in classrooms and offices during April-May 2025. Results showed BLK Situbondo's average ECI was 4.62 kWh/m²/month, though areas like the lobby, offices, welding, and processing rooms had high ECI due to continuous AC and heavy equipment use, while lighting often fell below SNI standards due to poor natural light and suboptimal lamps. Despite this, adjusting user behavior and optimizing AC capacity successfully reduced energy consumption by 1.854 kWh, saving Rp.2.744.610 (28,36% reduction), and lowered the overall ECI for electrical equipment to 4,61 kWh/m²/month. Further efficiency recommendations include optimizing natural lighting, maintaining/adding lamps, promoting user awareness to switch off unused devices, repairing old equipment, and performing regular panel measurements to prevent power leaks.

Keywords: *Audit, Situbondo Vocational Training Center, Energy Saving, Energy Consumption Intensity*