ABB energy efficiency improvements are saving the equivalent of 10,000 megawatt hours (MWh) of energy per year at Indonesia’s largest coal-fired power plant, the 3,400 MW Suralaya generation station on the island of Java owned by PT Indonesia Power, the country’s leading provider of power generation.

The energy savings of 0.33 percent in the 400 MW Suralaya Unit 2, one of the power station’s seven generating units, was the result of a multi-stage ABB Service energy appraisal, followed by a feasibility study, master plan and implementation process.

The Suralaya power plant generates power with four 400 MW generating units, three 600 MW units makes them as one of the largest power plant in Indonesia.

In accordance to its Vision, in 2012 Indonesia Power aimed to be a more efficient and environmentally friendly power plant that could supply power to the grid more competitively. ABB responded by offering to do an energy appraisal of Suralaya.
Unit 2. The appraisal identified five quick wins to improve energy efficiency in the power plant. These first stage findings covered all areas of the plant, from material handling to excitation.

Indonesia Power decided to implement three of the five quick wins which were considered most important to be implemented, and conducted a feasibility study and master plan prior to further implementation. All changes were centered in combustion control processes dealing with excess oxygen, flue gas temperature monitoring, and carbon monoxide (CO) emissions monitoring and control.

The focus was on improving control of the concentrations of oxygen (O2) and CO in the combustion process. The approach targeted a specific maximum desirable CO level, adjusting the oxygen trim set point to maintain CO at or below the target level. Coordinating the complex instrumentation and control equipment in this project was a challenge, as the oxygen analyzer, CO analyzer, and temperature transmitter were used as set point to combustion control.

“In line with our analysis, successful implementation of these three quick wins was expected to have a significant impact on the performance of the Suralaya plant,” said Rinaldo Pagani, manager of ABB’s Power Generation business in Indonesia. “It has improved plant efficiency, and reduced environmental impact by controlling CO concentrations released.” Meanwhile, return on investment is estimated at less than a year.

The implementation project was completed in the first quarter of 2014. Indonesia Power appreciated ABB’s skill and expertise in this area, as well as its prompt service capability. This milestone project strengthens ABB’s leadership in providing energy efficient solutions for power generation customers.

For more information, please contact:

ABB Ltd.
Business Unit Power Generation
P.O. Box 8131
8050 Zurich, Switzerland
Phone: +41 (0) 43 317-5380
Fax: +41 (0) 43 317-5382
E-mail: powergeneration@ch.abb.com

www.abb.com/powergeneration