Industrial Energy Efficiency Project

In order to introduce a structured approach to energy management in their operations, PT. Indah Kiat Pulp Paper has joined hands with the United Nations Industrial Development Organization (UNIDO), the Ministry of Energy and Mineral Resources (MEMR), Ministry of Industry (MOI) and National Standardization Agency of Indonesia. The Global Environment Facility (GEF) funded project, "Promoting Industrial Energy Efficiency through System Optimization and Energy Management Standards in Indonesia" has helped PT. Mitsubishi Chemical Indonesia to implement a Steam System Optimization in alignment with ISO 50001 for an overall improvement in energy efficiency and a reduction in energy consumption.

Mitsubishi Chemical Indonesia was established as a multinational company in 1991 and has 3 plants built on an area of 23 hectares. In PTA business, commercial operation of PTA no. 1 Plant was started in 1991 with initial capacity of 250,000 MT per year and then followed by commercial operation of PTA no. 2 Plant with the same initial capacity as in 1996.

While in PET business, commercial operations of PET Plant started in 1995 with an initial capacity of 52,000 MT per year. After process optimization projects, effectively from 2005, plant capacity has increased to 700,000 MT per year for PTA and 58,000 MT per year for PET.

Optimized Steam Systems to Reduce Energy Consumption at PT. Mitsubishi Chemical Indonesia

In March 2001, PT. Bakrie Kasei Corporation officially changed its company name into PT. Mitsubishi Chemical Indonesia with Mitsubishi Chemical Corporation (previously known as Mitsubishi Kasei Corporation) as single majority shareholder.

Located in Cilegon City, Banten Province, Indonesia, produces Purified Terephthalic Acid (PTA) and Polyethylene Terephthalate (PET) resin under the license of Mitsubishi Chemical Corporation.

Currently, Mitsubishi Chemical Indonesia is the largest producer of PTA in Indonesia.
Benefits of Steam System Optimization implementation project to the company

Through the System Optimization activities, MCCI can take a systematic approach in improving its energy efficiency projects. These activities start from an assessment of the current energy performance and lead to identifying opportunities for improvements. There is a sound technical base to propose the implementation of the performance improvement opportunities.

In order to ensure a high quality in every aspect of the business, MCCI has implemented several management systems and firmly believes that the management systems approach is the most effective way to increase the company’s competitiveness in the global market.

The implemented management systems include:
- Quality Management System ISO 9001
- Environmental Management System ISO 14001 Safety
- Management OHSAS 18001:2007 and SMK3

Continuing on its commitment, MCCI management started to implement Energy Management System (EnMS), ISO 50001:2011 in 2013

Quotation from factory

“The UNIDO Industrial Energy Efficiency Project strongly supports MCCI in optimizing the energy systems systematically. Thereby, through assessment, plant personnel could understand the current system performance and recognize opportunities for improvements with quick paybacks.”

Steam System Performance Improvement

Through the Steam System Optimization project, MCCI implemented several initiatives:

1. Shifting Steam utilization from Medium Pressure to Low Pressure thereby generating electricity using a Backpressure Steam Turbine
2. Eliminating steam demand from utility side by using a mechanical driver
3. Implementing Steam Trap Management program
4. Utilization of Low Pressure Steam to heat-up Boiler Feed Water of Medium Pressure Steam

With a strong cooperation from UNIDO, MCCI got support for various capacity building activities of its employees in various disciplines of Energy Conservation, but most specifically targeted to Energy Management System and Energy System Optimization.

By invested around 1.3 million USD to re-operate STG, purchase water from outside and Install heat recovery from condensate; the company gets energy cost saving almost 2.1 million USD and managed to reduce CO2 up to 27,950 tonnes/year.

Specific Energy Use Index” trend given below.

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