Industrial Energy Efficiency Project

In order to introduce a structured approach to energy management in their operations, PT. Indah Jaya Textile Industry 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. Indah Jaya Textile Ind. to implement a Steam System Optimization in alignment with ISO 50001 for an overall improvement in energy efficiency and a reduction in energy consumption.

PT. Indah Jaya Textile Industry consume energy its about 480,675 GJ per year which consists of electricity is about 127,000 GJ per year (35 GWh per year) and Coal is about 352,000 GJ per year (17,000 ton per year). Estimation of energy cost is around IDR 46 billion per year. Total production towel and garment is around 7,500 ton/year.

Current operation condition compared to Best practices in each area is very important to do. This approach was conducted to identify potential energy saving opportunities that may exist in the system.

By reducing boiler Blow Down Ratio and increasing condensate recovery, they can save energy cost for 132,000 USD per year.
Energy Saving

The results of the steam system model indicate that there are several energy saving opportunities which can be implemented at the PT. Indah Jaya Textile Industry.

By implementing that initiatives include increasing condensate recovery, decreasing blowdown rate, improve make up water quality, maintenance program for steam trap losses, and installing valves and pipes insulation;

**it give energy saving ~ 51,703 GJ/year and cost saving ~ 158,124 USD/year with payback less than a year.**

Boiler

Energy saving by 4 3 units of VSD (Variabel Speed Drive) on Induced Draft and Force Draft fan to reduce power. Which has capacity 75 KW for 1 unit and 55 KW for 3 units. It reduced energy consumption around 5400 KWh per day.

"The energy savings opportunities in textile industry are large. Hence, it is recommended to implement no/low cost energy savings as soon as possible since the cost saving is significant and it also reduces greenhouse gas emissions."

Improving Energy Efficiency Through Steam System Optimization

The steam system at PT. Indah Jaya consists of a boiler (steam generator), steam distribution, end uses and condensate recovery. Each of the steam system areas can be optimized and actual improvements are provided below:

Steam Distribution

Energy saving by repairing damaged pipe insulation and eliminating steam leaks in the flanges and valves. The plant insulated a 3 inch pipe along 18 meters.

Condensate Recovery

Energy saving in the condensate recovery area include repairing leaking steam traps and installing a pump to return condensate water after improve the water hardness between 1 - 5 ppm.

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