Industrial Energy Efficiency Project

INDONESIA

Overview

Ungaran Sari Garments (USG) is one of three manufacturing facilities established under the umbrella of Busana Apparel Group in Semarang, Indonesia and hosts a modern and highly automated facility that is 100% export-oriented, producing top brands for the USA, Japan and Europe.

Result

As a result of these interventions, potential energy performance improvements of 9.8% in electricity and 12.7% in steam, from the baseline year of 2014, were identified (see Figure 1 for total). In order to ensure management commitment throughout the process, USG has incorporated the EnMS program into their existing Business Process Improvement Scheme.

Structure and the support of the UNIDO program bring success

Before joining the UNIDO program, USG was already keenly aware of the importance of energy for its operations. USG has received recognition from its major consumers PVC, Macy’s, Kohl’s & Ann Taylor on delivery performances and 5 times the Primaniyarta Award from the President of Indonesia for the quality and quantity of their exported garments.

The Busana Group is committed to sustainable development and energy management. To this end the company has participated in numerous energy audits, assessments and training programs; all of which were driven by actions and not only by monitoring performance.

In light of increasing energy costs, and an increasing share of energy in production costs, USG realized that a more systematic approach was required to energy management.

To achieve this, USG involved all key employees in the day-to-day operation of energy management through operational controls. Additionally, as a pilot company, partnered with UNIDO to implement an Energy Management System (EnMS) in line with ISO 50001:2011. USG representatives also attended the system optimization trainings to create maximum opportunities for improved performance.
Figure 1 shows the energy performance indicator (EnPI) for electricity per production, clearly showing that USG has successfully improved their overall performance. USG had many good practices in place before taking part in the UNIDO project and was already taking energy management seriously but the overall EnPI graph shows the marked improvement since implementing the structured approach with the support of the UNIDO project.

**Opportunities**

Identifying and taking advantage of opportunities is key to improving the performance of each significant energy user (SEU). The majority of savings stem from initiatives that are initially being tried on a smaller scale and fall under the high investment category. These measures are currently under observation and will subsequently be scaled up to cover all relevant areas of the facility. This approach allows the company to make good use of the measurement and verification aspect of ISO 50001 by verifying the savings and then moving forward.

Measures already piloted by USG and due for scale-up include:

1. Daylight utilization using sky lights and lighting sensor controls (60% savings achieved)
2. Heat recovery from the air compressor

The above-listed measures and some medium-sized investment initiatives have led to a payback period of less than two years.

Ongoing energy reduction can be seen in the first quarter of 2015 with a production increase of approximately 10.8% over the same period in 2014, and energy consumption per garment approximately 9.4% lower than in the same period in 2014.

Further benefits of the EnMS implementation are outlined below:

- Increased employee awareness of energy saving
- Reduced environmental impact
- Decreasing maintenance costs
- Cultivating a greener image of manufacturing
- Encouraging employees to find energy saving solutions
- Better management of energy data
- Spreading of the experience to other sites within the company.

For more information:

UNIDO Project Management Unit in Indonesia:
Email: a.nugrahanto@unido.org
Phone: +62 21 319 24547

UNIDO Headquarters:
Sanjaya Shrestha: s.shrestha@unido.org
Phone: +43 1 260 26 3730