UNITED NATIONS
INDUSTRIAL DEVELOPMENT ORGANIZATION

Industrial Energy Efficiency Project

Continental is one of the top automotive suppliers in the world. Founded in 1871, the company is renowned for its top-quality components used by most automobile brands and makes, particularly in high-end European cars. Continental's Philippine operations are dominated by its plant in Calamba, Laguna, an hour's drive south of Manila. With almost 1,000 team members, the Calamba facility manufactures a variety of automotive electronic products, most of which are focused on fostering driving safety.

The high quality of manufacturing and notable success of the Calamba plant has led to increased business and the introduction of new products over the years. This boost in manufacturing capabilities and volumes has made it necessary to implement an effective energy management program.

Sustainability at the core of Continental

Rewards and Recognition

The energy management system of Continental Temic Electronics Philippines, Inc. (CTEPI) has, since its launch in 2011, set a yearly target of 3% reduction in energy usage at all its manufacturing sites. There has been a great deal of emphasis placed on better energy efficiency and on conservation measures over the past years. This objective is a principal feature of the organization's Corporate Energy Policy, approved in early 2014, which aimed at having all German locations certified to ISO 50001 by the end of 2015, and to have all other locations certified by 2016. The Calamba plant is a frontrunner -becoming the first manufacturing facility of the company to achieve ISO 50001 certification well ahead of its target; as early as 2015.

Figure 1 Site celebrates Certification to ISO50001

Sustained Performance Improvements

Success in improving energy performance was not achieved merely by running a project but by bringing about a culture change throughout the entire organization. Improvements along these lines were made

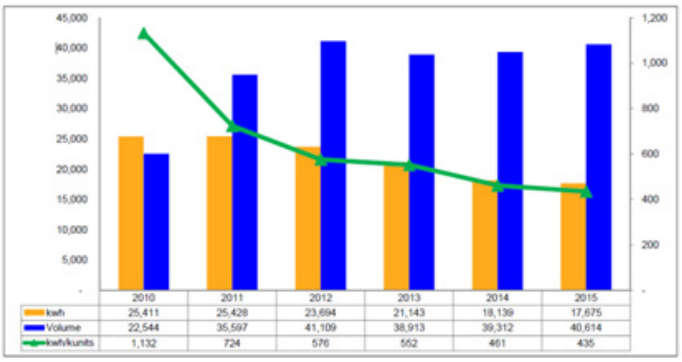

Figure 2 Energy Performance Indicator for six years.

Significant Operational Improvements

The energy management team's success can be greatly attributed to the care and attention that was placed on non-investment projects. Some of these initiatives include:

- Increase in chilled water temperature set point by 20C;
- Reduction in parking area lighting and switching lights off during break times;
- Optimization of relative humidity control;
- Shutdown of duct heaters;
- Limiting the use of lighting in void spaces to times when monitoring & maintenance activities are conducted;
- Reconfiguring the duct system at the chiller area;
- Centralization of the duct system at vacuum & CDA areas to facilitate equipment shutdown;
- Increase in space temperature set point in air-conditioned areas from 21 to 24 degrees Centigrade.

Capital Energy Conservation Programs:

717kWp SOLAR PV ROOFTOP PROJECT

A solar Photovoltaic system was installed on the rooftop of the Calamba Building 2 plant to augment the electrical power needs of the factory. This 717-kilowatt peak solar panel array generates almost 10% of the electrical power requirements of Building 2. The project serves as a good illustration of contributing to energy conservation while “greening the supply” since solar energy is wholly carbon-neutral. Commissioned in April 2016, the project currently supplies energy to the facility, thereby helping the company meet its energy conservation targets.

Figure 3 Solar PV on Rooftop of Building 2

Other capital projects of note include the installation of Variable Speed Drives for the chilled water systems, replacement of conventional lighting fixtures with energy-efficient LED fittings, optimization of compressed air systems through header modifications and leak remediation, and the installation of fan coil units. All of these projects were independently evaluated using internationally recognised protocols to verify the energy savings achieved.

Benefits

A greater understanding of the benefits of energy management in all areas of production was acquired by everyone involved in this initiative. This involved a UNIDO-trained national expert’s assistance in the implementation of the management system, as well as associated training given to the staff. The UNIDO technical training provided the staff with the knowledge and the tools to utilise international best practices by accurately measuring, analysing, and reporting energy consumption onsite on a regular basis.

Ultimately, the most important benefits to implementing the EnMS standard is a shift in the internal work culture and a better understanding of the relationships between the different systems. With a much-improved understanding among the staff about the consumption of energy, they have come to appreciate just how their individual efforts have contributed towards the overall goal of cutting down on electric power consumption.

They are now fully aware of how they can affect energy use and that good energy management requires engagement from all staff onsite.

For more information:

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