

Pilot Project "Introduction to Energy Efficiency and Energy Management Systems in SMEs in Mexico"

Example of energy efficiency improvement CAFESCA: Biomass Boiler

Background information:

The implementation of the pilot project began with the introductory workshop to ISO 50001:2011 in October 2015. The companies then conducted energy audits to identify and prioritize various opportunities for improvement, under the guidance of Mexican consultants with expertise in energy efficiency.

One of the participating companies was **Café de Especialidad de Chiapas (Cafesca)**, which is located in Tapachula, Chiapas. This company produces freeze-dried soluble coffee.

Description of the improvement:

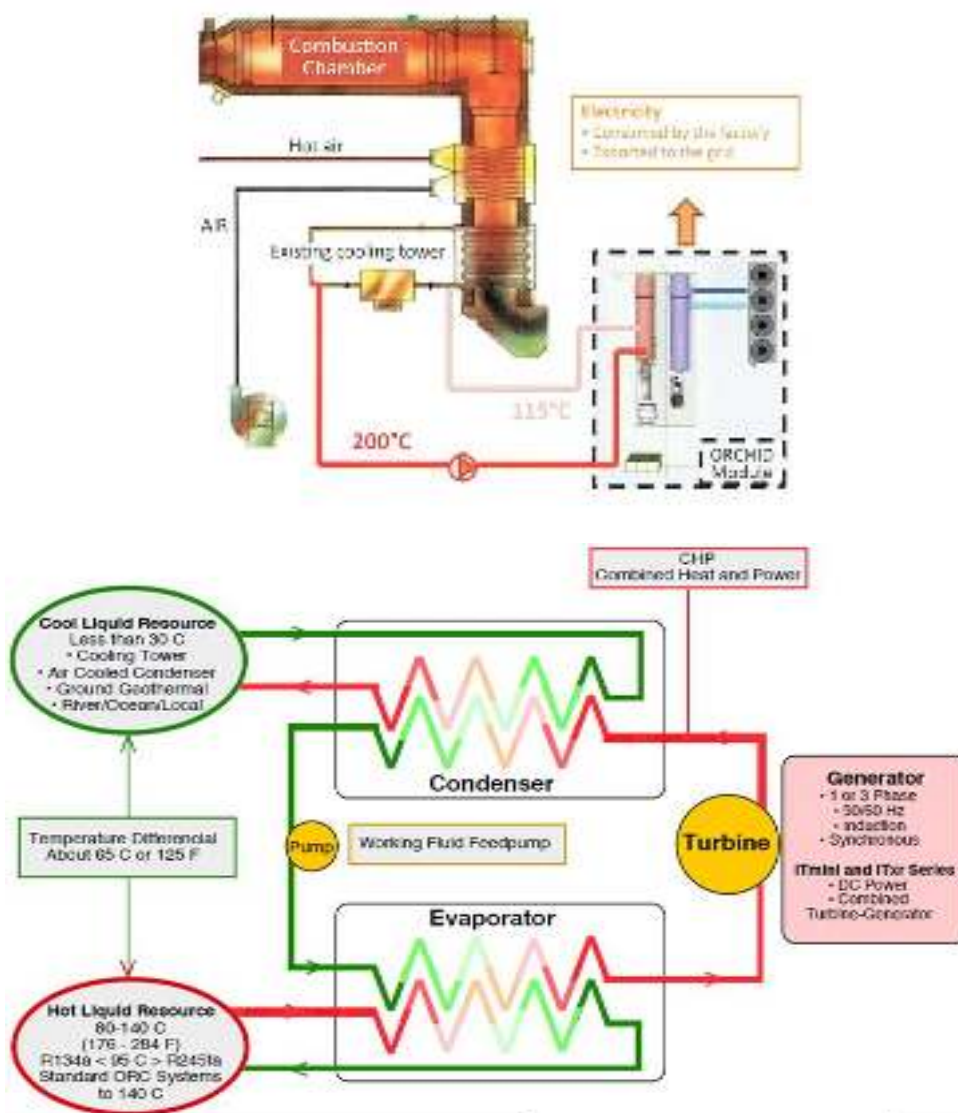
All the thermal energy used at the plant was generated by a biomass boiler that already showed signs of significant deterioration, thus creating the urgent need to buy a new unit.

The pilot project was instrumental in the design and purchase of the new biomass boiler because, as stated in points 4.5.6 and 4.5.7 of the ISO-50001: 2011 standard, the organization must:

- a) Consider opportunities for improving energy performance and operational control in the design of new facilities related to significant energy uses.
- b) Establish and implement the energy performance criterion in the purchase of equipment that represents a significant energy use.

The opportunity for improvement was detected as a direct result of the energy audit conducted for the pilot project, and basically involved integrating into the design of the new biomass boiler a system to recover heat from the exhaust gases and produce electricity using organic Rankine cycle (ORC) technology, along with an operational control system to achieve and maintain optimal energy performance.

This successful case study was documented as a result of the energy management system that is being implemented with the PTB project.



Savings achieved, results and additional benefits

Key indicators	
Total electricity saving	35.2%
Annual economic saving	USD \$ 295 900
Annual energy saving	3 481 MWh
Investment needed	USD \$ 887 700
Payback period	3 years

This successful example not only demonstrates how to make the best use of energy by recovering heat and generating electricity but also provides a structured procedure for analyzing the options in the process and selecting the most appropriate technology.

PRONASGEN

The Mexican National Commission for the Efficient Use of Energy (CONUEE) and the German Metrology Institute (PTB) make the aforementioned project available to small and medium enterprises (SMEs) in order for them to implement an energy management system (EnMS) according to ISO 50001, by strengthening the skills of technical staff within each company.

For more information on the pilot project, contact Lissette Mendoza Barrón, Tel. 3000 1000 ext. 1318, lissette.mendoza@conuee.gob.mx or Susanne Wendt, susanne.wendt@ptb.de