

Companies connection to energy efficiency

The company is certified according to ISO 22000, ISO 14001 and ISO 9001.

Steam system

The enterprise is a family owned dairy that started back in 1954. The core business is the production of yogurt, yogurt products, and other milk products.

Steam boiler information

Size: Steam Boiler: 630 kWth, Steam Generator: 390 kWth

Nominal steam capacity: Steam Boiler: 960 kg/h @ 11,2 bara, Steam Generator: 600 kg/h @ 9 bara

Boiler's operation: 2.112 hours/year

Kind of fuel: LPG

Steam system problems identified

- ✓ Steam boiler operates at a very high percentage of excess air. This adversely affects steam boiler efficiency, which is very low.
- ✓ In spite of the very high amount of excess air, flue gas temperature is very high signifying a poorly maintained boiler
- ✓ The steam boiler has a steam leakage area at the front
- ✓ There are significant flash steam losses to the atmosphere due to either (a) the incorrect initial design of the steam condensate tank or (b) its incorrect construction

Proposed energy saving measure(s), investments, and expected results (in figures)

- Insulate un-insulated steam distribution: 160,800 kWh/ year => Simple payback = 4 months, Cost: 2.500€/100m, Annual fuel savings: 7.271€
- Insulate condensate lines: 75,600 kWh/ year (steam condensate) => Simple payback = 10 months, Cost: 2.500€/100m, Annual fuel savings: 2.907€
- Insulate un-insulated hot surfaces (steam boiler, hydraulic valves, flanges etc.) 49,770 kWh/year => Simple payback < 2 year, Cost of measure: 4.000-5.000€, Cost savings: 2.500-3.000€
- Improve steam boiler and steam generator efficiency (regulate excess air and establish a regular maintenance schedule) :Low/no cost measures with immediate payback.
- Install an automatic blowdown control system: 38.500 kWh/ year. Cost of measure: 9.000€.
- Install a retrofit deaerator on condensate tank: 15.400 kWh/ year.
- Utilization of the existing solar collectors: Energy saving in fuel consumption: 56.700 – 94.500 kWh/ year, Annual fuel savings: 3.050-5.100€.
- Energy consumption monitoring system.



Greece

Dairy products

Plain Greek Yogurt with 10%, 2%, and 0% fat, a range of fruit yogurts, plain or flavoured Greek tzatziki sauce, milk desserts such as vanilla or cocoa cream and rice pudding.

Number of employees: 38

Total (estimated) Investment

<€ 40.000

Total (Estimated) Savings

0.40 GWh/yr

Non Energy Benefits

Reduced maintenance costs

Prediction and repair of

malfunction of the system

Reduction of chemical agents and

CO₂ emissions

Implemented proposed energy saving measure(s), investments and results achieved (in figures)

The proposed measures are not yet implemented.

Achieved and/or expected Non Energy Benefits (NEBs) as result of implemented and/or proposed measures and investments involved

Expected NEBS as a result of proposed measures

- ✓ Reduction of chemical agents used for deaeration by installing a retrofit deaerator on the condensate tank.
- ✓ Reduction of CO₂ emissions at the steam generator by regulating excess air.
- ✓ Improve steam quality by changing the operation settings of the steam boiler and the generator.
- ✓ Reduce maintenance costs
- ✓ Prediction and repair of malfunction of the system
- ✓ Facilitation of the personnel to control and supervise the system

Involvement of internal stakeholders

The factory management team was positive to the CRES Audit and seriously considered the Audit results. Most of the steam system problems have already been solved (leakage points, insulation, burner regulation) and many parts of the steam equipment have been fixed or improved (boiler, piping, valve clusters). The technical staff is supervising the steam system on a regular basis, in addition to the annual maintenance executed by qualified technicians. In the near future, new installations (solar collectors system, operation monitoring system) are being planned in order to increase the steam system production and distribution efficiency, while reducing the total energy consumption. The main purpose of the management team instructions is to reduce the energy and power costs, according to the local authorities' regulations and the applied company's environmental-friendly policy.