

### Company connection to energy efficiency

The company have been using cogeneration unit of electricity and steam provided by a single engine that can guarantee partial autonomy of the production process, cost savings and a huge reduction of emissions. Moreover, there is a modern Photovoltaic plant which ensures further renewable electricity for the process production.

### Steam system

The steam system consists of 1) a single engine and waste heat boiler and 2) n. 3 standard packaged natural gas boilers providing load sharing and peaking demands. Nominal capacity is around 1,8 t/h of steam. The main consumers are for hot water production and HVAC applications. About 95% of the condensate returns from the consumers.

### Steam system problems identified

The steam system is quite efficient, although insulation jackets are limited to steam valves while significant components on the LTHW and MTHW distribution networks aren't well insulated. All steam traps lack of insulation. In the process operating high temperature processes condensate temperatures tend to be over than 100°C, so when on being returned to the vented condensate receiver, flash steam is released to atmosphere.

### Proposed energy saving measures, investments, and expected results

Implementation of a plate heat exchanger where CHP steam boiler feed waters are used for preheating LPHW return volumes (457 MWh saved);  
Implement a program of fully insulating all exposed steam components using removable insulation jackets (850 MWh saved, 55.000 euro of investment);  
Implement heat recovery from condensate vented flash steam losses for offsetting natural gas energy demands of the LTHW condensing boiler (1.018 MWh saved, 61.000 euro of investment).

### Implemented proposed energy saving measures, investments and results achieved

The company has already optimized the number of operating boilers that do not produce cogenerated steam.

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

All of the proposed measures will improve the overall efficiency of the steam system, lead to lower CO2 emissions, downtime period, maintenance costs and water consumption.

### Involvement of internal stakeholders

The company is really involved into the implementation of the proposed measures to achieve cost-effective energy savings.



Italy

Pharmaceutical

tablets and capsules

1.700 employees

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**Total (estimated) Investment**

**€ 111.000**

**Total (Estimated) Savings**

**MWh 2.325**

**Non Energy Benefits**

Lower CO2 emissions

Improved efficiency of the steam system

Lower downtime period and maintenance costs