

### Company's connection to energy efficiency

In a lightly growing market to keep the own market shares and by optimization of the processes, the energy efficiency and the processes create cost advantages to the competitors. In the foreground is not the expansion, but the optimization. At the same time, it is necessary to counteract the ever increasing energy costs, which represent a large part of the overall costs. A lot of energy is consumed in a laundry. It is important for the owner to be environmentally conscious. This starts with the selection of the processes up to the energy efficiency of the plants and the energy input. There is no energy management system implemented yet.

### Steam system

Essential steam applications are: washer, dryer, ironing. Frame data of the steam system:

- energy consumption for steam generation: 139,929 cbm natural gas p/y
- installed thermal power of the boiler: 2.07 MW (construction year: 1986)
- steam production: 1,660 GJ p/y
- Annual utilization rate of steam generation: 29.5%

### Steam system problems identified

There is no economizer and no air preheater installed and excess air is not optimized. The exhaust gas losses amount to 11.0%. The boiler is only isolated with 100mm rockwool. There are massive control losses of 5.0%

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

The proposed energy saving measures and the corresponding investments and savings are:

- Adjust the dryer (invest: 15,000 €, energy saved: 205 MWh p/y, costs saved: 9,200 € p/y)
- New steam boiler (invest: 200,000 €, energy saved: 474 MWh p/y, costs saved: 20,900 € p/y)

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

There are no energy saving measures implemented yet but the company planned to exchange the steam boiler in April 2018 and ordered the new system already.

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

The mainly achieved NEB concerns the reduction of CO<sub>2</sub> in the amount of 393 t p/y.

### Involvement of internal stakeholders

There is no energy management system and no regular optimization implemented at the company, but the management has recognized the need for action regarding their inefficient steam system and has initiated the process of the Steam Up audit. The management was involved in the process of the audit.

As a result, the management will implement a set of key figures of the steam system for continuous monitoring and optimization. In addition, the management will provide the necessary human and financial resources.

Germany

Laundry Service

15 Employees

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Total (estimated) Investment

€ 215,000

Total (Estimated) Savings

30,000 €/y

680 MWh/y

Non Energy Benefits

Reduction of CO<sub>2</sub>