

# STEAM AUDIT – Czech Republic, Production of textile fibres and fabrics

## FACTSHEET



### Companies connection to energy efficiency and sustainability

Toray Textiles Central Europe s.r.o company has well established and certified integrated management system (IMS), which is characterized as follows: Safety first, Focus on customers' requirements and expectations, Certification according to ISO 9001:2000, Certification according to ISO 14001:2004, Certification according to ISO/TS 16949:2002, Well managed and continuously improved processes.

### Steam system

The source of the steam is the central gas boiler room, located in the energy-centre, which is fitted with two gas medium pressure steam boilers LOOS working into a common steam collector at an absolute pressure 7 bars and temperature of steam 165°C. Gas steam boilers with economizer provide the necessary steam for technological purposes and necessary heat for hot water for heating, hot water for social purposes and heating for air conditioning. Steam and its utilization are absolutely crucial for the technology and production of fabrics. Distribution of steam is designed as above ground partly inside and outside. The system returned 65% of the condensate.

### Steam system problems identified

Thorough insulation of steam piping on dyeing machines, including valves and fittings. Additional insulation of hot water baths (scouring) and baths of ABG stenter machine. Installation of a new frequency inverter for feed water pumps. Preheating the additional feed water for boilers by using the heat pump - waste heat utilization.

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

The proposed measure consists in an installation of a new feed water pump inverter which maximizes efficiency and can control coming-out water pressure. In order to improve the thermal properties of the baths we recommend using additional insulation. Another measure can be implemented at the feed water system by using the heat pump for preheating feed water. The proposed measures lead to calculated energy saving of 1 168 MWh per year.

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

The investment costs for the proposed energy saving measures are about 107 120 € and the payback period is about 3 years.

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

The projects increase the utilization of waste heat, decrease the steam demand and lead to the reduction emission of pollutants and CO<sub>2</sub> emissions at the global and local level, reduction water consumption for steam generation, reduction consumption of chemicals for water supply.

### Involvement of internal stakeholders

The measures are ranked according to the criteria defined with the company in cooperation with the energy auditors. The management was informed about the methodology Steam Up and they have expressed their willingness to participate. They are highly interested in implementing measures to achieve cost-effective energy savings.



**Toray Textiles Central Europe  
s.r.o.**

[www.toray.cz](http://www.toray.cz)

**Prostějov, Czech Republic**

**Production of textile fibres and  
fabrics**

**400 employees**

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**Total (estimated) Investment**

**€ 107 120**

**Total (Estimated) Savings**

**1 168 MWh per year**

**Non Energy Benefits**

Reduced emission of pollutants  
and CO<sub>2</sub> emissions at the global  
and local level

Reduced water consumption for  
steam generation

Reduced consumption of  
chemicals for water supply

Improving working conditions

Environmental protection

Economical (financial increase)