

#### Companies connection to energy efficiency and sustainability

The company is a joint stock company based in Paskov, in the Moravian-Silesian Region of the Czech Republic. In 2013 the company made significant changes in the production of classical sulphite pulp for the production of viscose pulp. This change was associated with extensive investments in technology and had a great influence on energy consumption of the company. The consumption of coal (end of 2013) for the production of steam was gradually replaced with renewable energy sources and the company became electricity supplier instead. For energy input to the manufacturing facility are now considered mainly wood products from processing: liquors from wood and bark fuel (produced in the process of debarking and chipping).

#### Steam system

Heating plant consists of four steam boilers working to a common high-pressure steam pipe and one sodium steam boiler SK working on a separate high-pressure steam pipe. From the high-pressure steam pipe PS1 is guided on two steam backpressure turbines, each with an output of 20.8 MW<sub>e</sub>. With a separate high-pressure steam pipe steam is directed to a condensing turbine TG3 with electrical output 17.6MW<sub>e</sub>. The system returned 75 % of the condensate.

#### Steam system problems identified

- Change of steam blowing heat transfer surfaces (using medium-pressure steam instead of high- pressure steam)
- Recovering condensate from sulphur storage
- Install an unused steam accumulator as condensate tank
- Variable speed control for fans primary and secondary air in bark boiler
- New flue gas heat exchanger in bark boiler

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

This measures lead to calculated energy saving of 10 946 MWh per year.

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

The investment costs for energy saving measures on the steam sources are about €583 800 and the payback period is less than 4 years.

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

The projects increase the overall efficiency of the steam system and lead to the reduction emission of pollutants and CO<sub>2</sub> emissions at the 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.

Paskov, Czech Republic

Pulp production

371 employees

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Total (estimated) Investment

€ 583 800

Total (Estimated) Savings

10 946 MWh per year

Non Energy Benefits

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

Reduced water consumption for steam generation

Reduced consumption of chemicals for water supply

Reduced maintenance costs

Unscheduled down-time

Environmental protection

Economical (financial increase)