STEAM AUDIT – Czech Republic, Production of sugar
FACTSHEET

Companies connection to energy efficiency and sustainability

Responsibility for the ecological and energy dimensions of its production operations has always been practiced by the company, and in 2014/15 it was formalised in an environmental policy that applies worldwide and to all business segments. The policy contains the company's management approach for energy consumption, emissions, water use, wastewater, and waste. The company has implemented ISO 50001 – Energy management system.

Steam system

The steam produced in the heating plant (high-pressure steam boilers) is used mainly to produce electricity, the technology for the production of sugar, heating and hot water. The source of the steam is the central gas boiler room, located in the energy-centre, which is fitted with three high-pressure steam boilers working into a common steam collector at an absolute pressure of 22 bars and temperature of steam 380°C. The system returned over 100% of the condensate.

Steam system problems identified

Thorough insulation of all piping, steam piping, including valves, switchboards and fittings. According to Decree no.193/2007 Sb. must be installed thermal insulation on all the internal distribution pipes, including thermal insulation of hot water tanks. Installation of sub-measurement of steam consumption for all major appliances of steam. Maximize the use of heat of dirty condensate from technology.

Proposed energy saving measures, investments, and expected results

The proposed measures consist of the utilization of waste heat - hot water preparation by dirty condensate, the utilization of waste heat - heating buildings by dirty condensate. This measures lead to calculated energy saving of 3 810 MWh per year. The installation of a new steam boiler will bring energy saving of 24 800 MWh per year, due to high investment costs this measure doesn´t include in total estimated savings.

Implemented proposed energy saving measures, investments and results achieved

The investment costs for the proposed energy saving measures (without installation of a new steam boiler) are about 366 000 € and the payback period is about 6 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_2 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.

Opava, Czech Republic

Sugar production

120 employees during the campaign

Total (estimated) Investment

€ 366 000

Total (Estimated) Savings

3 810 MWh per year

Non Energy Benefits

Reduced emission of pollutants and CO_2 emissions at the global and local level

Reduced water consumption for steam generation

Reduced consumption of chemicals for water supply

Maintenance cost reduction

Competitiveness increases

Environmental protection

Economical (financial increase)