



ABUL KHAIR STEEL PRODUCTS LIMITED

Recovering Heat from Condensate using Heat Exchanger

SUMMARY OF THE OPTION

Abul Khair Steel Products Ltd (AKSP) is a newly established large metal finishing plant in Bangladesh, that produces a range of steel products, such as cold rolled (CR) coils, galvanized steel (GS) sheets and corrugated galvanized iron (CGI) sheets.

It was observed that there is no condensate recovery system in the plant. Steam is discharged into the water bath for hot water generation. Wastewater from the pickling bath is discharged at $>70^{\circ}\text{C}$ to the external wastewater treatment plant. Under the Environmental Act, the temperature of discharged water cannot exceed than 40°C . It is possible to recover the heat for the generation of hot water through a suitable cross flow heat exchanger or jacketed piping system. This hot water can be used in washing baths and this will reduce the steam consumption and also the load of the wastewater treatment plant. It was calculated that 800kg/hr of condensate could be recovered.

To implement this option, an investment of only US\$ 5,000 (Tk 0.3 million) is required, resulting in estimated savings of US\$ 10,500 per year (Tk 0.63 million) with a payback period of less than 6 months. Greenhouse gas emission reductions would be 243 tCO₂ through reduced fuel use for steam generation. However, plant management rejected this option because of concern for acid breakthrough. If acid were to come in contact and mix with recovered condensate then this may disrupt the production process.

KEY WORDS

Iron & Steel, Bangladesh, Waste heat recovery, Water

FOR MORE INFORMATION

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