

This series showcases success stories of PaCT (Partnership for Cleaner Textile) partner factories in the Bangladesh textile sector that have implemented cleaner production projects.

Factory Status

Blue Creations Ltd. (BCL) is a part of Sterling Styles Limited. Their total production capacity is 57,700 pieces (25 tons) per day for denim and non-denim apparels and fabrics. Their steam requirement is met through one boiler while condensate is generated from a steam dryer. They have one partial condensate recovery system (CRS).

Condensate Recovery System (CRS)

If 1 ton per hour of steam is supplied to an equipment for a process, the same amount of condensate (1 ton/hour) should be discharged from that equipment. The condensate can be re-used in various ways, such as:

- Heated feed water: condensate is sent back to the boiler's feed tank
- Pre-heat: condensate can reduce the fuel load for any heating system
- Hot water: condensate can be used for cleaning equipment or other cleaning applications

Heated feed water: As condensate is added to the feed water tank, there will be significant difference between the make-up water and the feed water results. Feed water temperature is a very important parameter for boiler operation. For every 6°C rise in boiler feed water temperature, boiler efficiency increases by 1 percent. Moreover, feed water below saturation temperature contains absorbed gases, which cause oxidation on the boiler heating surface. Supplying water at low temperature also causes thermal shock that can

significantly reduce a boiler's life. Returning condensate can also reduce make-up water requirements.

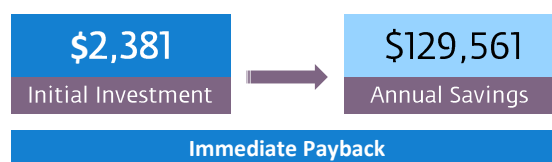
The Challenge

Condensate is the liquid formed when steam passes from the vapor to the liquid state. When steam condenses, condensate temperature is the same as steam because only the latent heat has been lost, but the amount of sensible heat is retained. For BCL, condensate generated from steam dryers did not undergo a full recovery system. Most of the condensate was discarded through the drain.

Implementation

BCL installed a proper condensate recovery system for the whole factory as recommended by PaCT Program experts. The investment required for the upgradation of condensate recovery system, piping and insulation cost was \$2,381, potentially saving approximately \$129,561.

Investment & Payback Status



Results

The factory can save 9 percent of its heating energy used per kilogram of processed garments through the implementation of CRS.

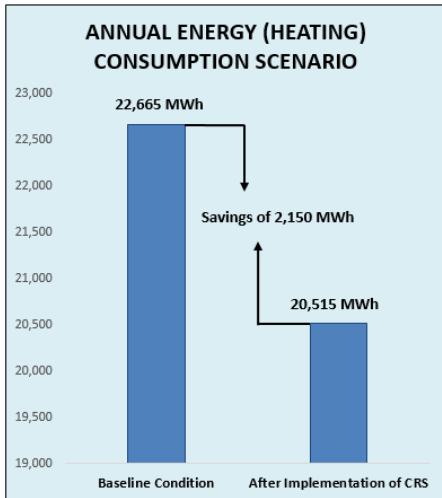


Figure 1: Annual energy (heating) consumption scenario before and after implementation of CRS

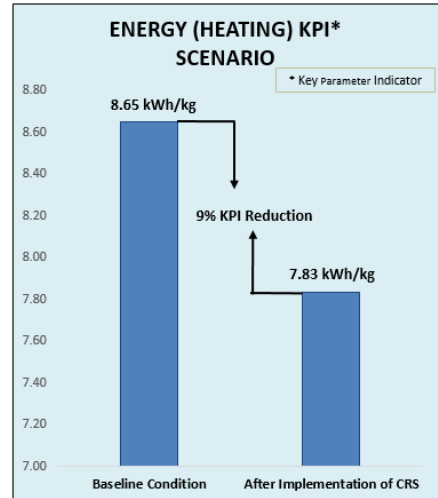


Figure 2: Energy (heating) KPI scenario before and after implementation of CRS.

Environmental Benefits

Task	Annual Water Savings	Annual Power Savings	Annual GHG Emission Reduction
Condensate Recovery System Upgradation	144 m ³	2,150 MWh	473 ton CO ₂ e

IFC-led Advisory Partnership for Cleaner Textile (PaCT)

is a holistic program that supports the entire textile value chain – spinning, weaving, wet processing and garment factories – in adopting cleaner production (CP) practices. PaCT engages with brands, technology suppliers, industrial associations, financial institutions, and the government to bring about systemic and positive environmental changes to the Bangladesh textile sector and contribute to its long-term competitiveness and environmental sustainability.

WHAT PaCT DOES:

- Basic Cleaner Production Assessment
- In-Depth Cleaner Production Assessment
- Chemical Management Assessments
- Water and Energy Management
- Energy Efficiency and Productivity Assessment
- Rooftop Solar PV Pre-feasibility Study
- Online Resource Monitoring

DEVELOPMENT PARTNERS



IMPLEMENTING PARTNER



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IMPLEMENTER

