

17.4% fuel reduction through steam and condensate system improvements for a MNC confectionery plant

 Malaysia

 Food

Problem

A leading confectionery MNC in Selangor, Malaysia was facing several issues with its steam and condensate system. 100% flash steam was being vented. Condensate was partially recovered (70 - 75%) from the hot water system. Stalling and prolonged heating time issues were identified in the Hot Water System. Leaking traps further reduced overall system performance.

Solution

Forbes Marshall recommended energy conservation solutions to address the issues in the Hot Water System and improve condensate and flash steam recovery.

- We identified that the issue of condensate evacuation from the Hot Water PHE (plate heat exchanger) was due to the existing float trap. We replaced the trap with a steam-operated pump trap (SOPT) to address the issue of stalling and enable complete condensate evacuation from the PHE.
- Leaking process traps were replaced with compact module two-orifice float traps (CMTOFT).
- A FlashJet™ Pump was installed to recover flash steam and condensate.
- A deaerator head was installed on the feedwater tank to enable the proper mixing of condensate, flash steam and makeup water.

FlashJet™ Pump (FJP) enabling recovery of flash steam and condensate



Benefits delivered

	Before	After	Savings per month
Flash steam recovery	0%	90 - 95%	
Condensate recovery	70 - 75%	95%	
Average makeup water to boiler	775 m ³ /month (204K Gallons per month)	383 m ³ /month (101K Gallons per month)	392 m ³ /month (103K Gallons per month)
Average fuel consumption	2080 MMBtu per month	1719 MMBtu per month	361 MMBtu per month
Annual monetary savings		MYR 155,520 (~USD 36,827 *converted based on exchange rate)	

