

4.4% fuel and 88% makeup water daily savings for a beverage MNC

 Indonesia

 Beverage

Problem

A beverage MNC in Western Java, Indonesia was facing the following challenges:

- Issues faced recovering condensate from their hot water generator (HWG) and clean-in-place (CIP) system.
- Condensate recovery factor was 23%. Significant loss of heat energy seen, raising costs.

Solution

Forbes Marshall recommended and implemented the following thermal energy conservation solutions in the plant:

- A steam operated pump trap (SOPT- LH) was installed to eliminate condensate stalling.
- A steam-operated pressure-powered pump (PPPPU) was installed for condensate recovery.
- A condensate recovery meter (CRM) was installed to measure totalised flow, temperature, energy and fuel savings.



Steam operated pump trap (SOPT- LH)



Steam-operated pressure-powered pump (PPPPU)





Condensate recovery meter (CRM)

Benefits delivered

Average daily fuel consumption	reduced from 2040 to 1949 cubic meter (539K to 515K Gallons) i.e. a 4.4% reduction
Condensate recovery factor	increased from 23% to 91%
Daily makeup water consumption	reduced from 19,010 to 2,250 cubic meter (5022K to 594K Gallons) i.e. an 88% reduction
Daily water savings	16.76 Tonnes (4428 Gallons)
Daily energy savings	3866 MJ (3.66 MMBtu)
Annual monetary savings	USD 14,089 (~IDR 234,285,981 *converted based on exchange rates)

