4% fuel reduction through condensate recovery

Indonesia | Beverage

Problem

A beverage plant in Indonesia was draining condensate from the High-Temperature Short-Time (HTST) cup section. Feedwater temperature was 27.7°C (81.8°F) and the condensate recovery factor was 0%. This resulted in a boiler steam to fuel ratio of 5.81 leading to higher fuel (palm shell) and water consumption.

Solution

Based on our site observation we recommended the installation of a Pressure Powered Pump Package Unit (PPPPU). Once installed, the system was able to recover condensate from the HTST cup section at 88°C (190.4°F), improving the feedwater temperature to 54°C (129.2°F). This led to an improved steam to fuel ratio and increased overall energy efficiency.

Benefits delivered

	Before	After
Improved feedwater temperature	27.7°C (81.8°F)	54°C (129.2°F)
Increased condensate recovery factor	0%	41%
Condensate recovered at	NA	88°C (190.4°F)
Improved steam to fuel ratio	5.81 Kilograms Steam/Kilograms Palm Shell (Pound Steam/ Pound Palm Shell)	6.1 Kilograms Steam/Kilograms Palm Shell (Pound Steam/ Pound Palm Shell)
Reduced annual palm shell fuel consumption by		86,196 Kilograms (190K Pounds)
Reduced annual boiler makeup water by		5,249.16 Kilolitres (1.38 million Gallons)
Annual monetary savings		USD 8,351 (IDR 125,274,936)