

PULP MILL IN CANADA



BENEFITS

- ▶ 50 MMBtu/hr heat recovery rate
- ▶ 50,000 lb/hr steam made available for power production
- ▶ Produces roughly 2000 USgpm of water at 60°C (140°F)
- ▶ Half the price of gaining the same benefit through drying bark
- ▶ Turn-key system delivery

FLU-ACE® Condensing Heat Recovery from Pulp Machine Exhaust

Thermal Energy International (TEI) implemented a FLU-ACE® Condensing Heat Recovery System on the pulp machine exhaust at a pulp mill in Canada. The system was conceived, developed, designed, implemented, and commissioned by the TEI team. Heat sources considered for the application included boiler plant flue gas, lime kiln scrubber exhaust, smelt dissolving tank scrubber exhaust, pulp dryer exhaust, and recovery boiler exhaust. Ultimately the pulp dryer exhaust was selected due to its proximity to users, high temperature and humidity, steady flow, and low fouling potential. The condensing heat recovery system was designed to deliver some 50 MMBtu/hr of energy to plant systems (peak winter performance), saving 50,000 lb/hr of steam to be fed back into existing steam turbines to generate more electricity. This energy was previously discharged and lost to the atmosphere in the form of hot air and water vapor in the pulp dryer exhausts. The “free energy” from the exhaust was used to heat and preheat:

- 470,000 cfm of outside air in 9 air heating units
- Process water (boiler and bleach plant make up)

The system was implemented on a turn-key basis and was completed on budget and schedule.

“Great project that was on time and budget. The FLU-ACE® project was a great investment our company made to have a large impact on our shortage of steam for power production during the winter months.”

- Mill Manager

