



BENEFITS

- ▶ In excess of 100,000 MMBtu/year waste heat delivered
- ▶ \$1,400,000 in annual fuel savings, equivalent to 18,000 barrels of fuel oil/year
- ▶ Greenhouse Gas Reductions (CO₂) of 10,400 tons/year
- ▶ Reduction in Nitrogen Oxides (NO_x) by 22.9 tons/year
- ▶ Elimination of 131 tons/year of Sulphur Dioxide (SO₂)

Smelt Dissolving Tank Heat Recovery Application

Thermal Energy International (TEI) implemented a FLU-ACE® Condensing Heat Recovery System on the smelt dissolving tank vent at the Fraser Papers Ltd. pulp mill in Thurso, Quebec. The system was designed to recover an average of 12 MMBtu/h of waste heat energy that would otherwise be exhausted to the atmosphere. The waste heat from the exhaust is used to preheat boiler makeup water, reducing steam use in the deaerator. This resulted in elimination of the mill's consumption of No. 6 fuel oil and a commensurate reduction in greenhouse gas and other emissions equivalent to removing 2,085 cars from the road.

The project delivers annual energy cost savings of \$1,400,000 as well as providing the added benefit of an 85% reduction in the visible plume previously produced by the smelt dissolving tank vent exhaust.

Utilizing TEI's Thermal AUD™ (Alternate Utility Delivery) Program, the project was implemented on a turn-key basis and was completed on budget and on schedule with the system going into commercial operation in April 2008. Under this program, the equipment is owned and operated by TEI over a given term whereby the recovered energy is metered and charged on a \$/MMBtu rate basis that provides a continuous energy cost saving to the user. This provides an immediate cost savings benefit to the user without the requirement to deploy any internal capital - positive cash flow from day one!

"The equipment started up on time and on budget, with no impact on mill operations, reaching target heat recovery and savings from the get-go." Jean Pierre Benoit, Thurso Pulp Mill General Manager.

The project was recognized by Pulp and Paper Technical Association of Canada (PAPTAC) in 2008 and presented with their Energy Conservation Award as one of the best examples of energy conservation opportunities applied in Canada.



An Innovative Technology Company Providing
Custom Energy and Emission Reduction Solutions

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