VICTORY ENERGY®
Full Steam Ahead!

EXPLORER series

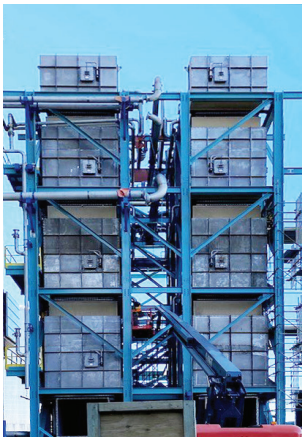
CASE STUDY

#02082022

ALBERTA PACIFIC

Alberta Pacific is the largest single-line Kraft pulp mill in North America that continues to branch out beyond the traditional pulp market.

Located in Spruce Valley, Alberta, they currently produce over 650,000 metric tons a year in sustainable forest products worldwide and recycle waste into renewable energy.



THE APPLICATION CHALLENGE:

Alberta Pacific was looking to recover significant thermal energy from their black liquor recovery boiler. The goal was to capture the waste heat that was being exhausted up the stack to allow for incremental generation of power – up to 70,000 MW hours. A quick and substantial return on the capital expenditure was paramount for the client. Sustainability requirements for reduced emissions was a prime client concern as part of their sustainability initiatives.

- The flue gas from the black liquor recovery boiler contained ash and highly corrosive substances making the application that required a highly engineered solution with extensive thermal expertise.

THE PRODUCT SOLUTION:

Victory Energy delivered a ***"first-in-the-world"*** Condensing Economizer that recovered 184 MMBtu/hr. of heat from the flue gas stream.

- Using experience gained from working with highly corrosive materials in the ethanol industry, a proprietary metallurgy was specified to withstand the rigors of operating in the corrosive environment with specialized cleaning systems to allow for clean tube bundles.
- Over 1.300,000 lb./hr. of high moisture flue gas was diverted through two (2) colossal heat recovery units arranged side-by-side in two twin towers.
  - ✓ Each tower stood 80'tall, 17' in width and 36' in length.
  - ✓ 1.1 million pounds of steel with 4,500 fin tubes.
  - ✓ The units proved to be within 3% of the predicted thermal performance.

CLIENT RETURN:

The waste heat captured in the Condensing Economizer from energy that was previously exhausted up the stack is now accounting for 70,000 MW Hours of incremental energy to be generated allowing for Alberta Pacific to realize additional revenue streams.

SUSTAINABILITY GAINS:

- ***GHG reductions of up to 76,000 CO2 over the next 3-5 years***
- ***Over 40 tons/hr. of moisture that was previously exhausted up the stack with the flue gas is now being condensed and returned to the Athabasca River.***