VICTORY ENERGY®
Full Steam Ahead!

SUSTAINABLE SOLUTIONS

HORIZON® series

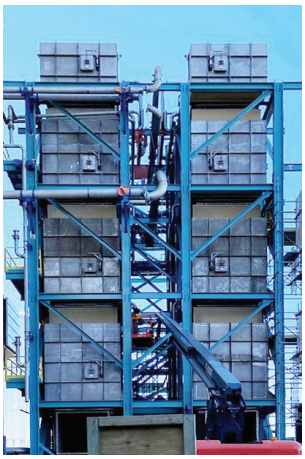
# CASE STUDY

**#02102022**

## THERMAL ENERGY RECOVERY

One of the largest single-line Kraft pulp mill in North America continues to branch out beyond the traditional pulp market.

They currently produce over 650,000 metric tons per year in sustainable forest products worldwide and recycle waste into renewable energy.



### THE APPLICATION CHALLENGE:

Our customer was looking to recover significant thermal energy from their black liquor recovery and hog fuel boilers. The goal was to capture the waste heat that was being exhausted up the stack to allow for additional steam to be dedicated to incremental power generation – up to 70,000 MW hours per year. A quick and substantial return on the capital expenditure was paramount for the client. Reduced emissions was a prime client concern as part of their sustainability initiatives.

- The flue gas from the black liquor recovery and hog fuel boilers contain ash and highly corrosive substances making the application one that required a highly engineered solution with extensive thermal expertise.

### THE PRODUCT SOLUTION:

Victory Energy delivered a ***"first in the world"*** Condensing Economizer that recovers 184 MMBtu/hr. of heat from the flue gas stream at the outlet of the existing economizer.

- Using experience gained from working with highly corrosive resistant materials in the industrial applications, a proprietary design was developed, and metallurgy was selected 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 is diverted through two (2) colossal heat recovery units arranged side-by-side in two identical towers.
  - ✓ Each tower stands 80' tall, 17' in width and 36' in length.
  - ✓ 1.1 million pounds of steel with 4,500 fin tubes.
  - ✓ The units perform within 3% of the predicted thermal performance with all performance guarantees met.
- Over 230,000 gallons per day of usable condensate produced.

### 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 per year of incremental energy being generated allowing the client to realize additional revenue streams.

### SUSTAINABILITY GAINS:

- ***GHG reductions of up to 76,000 tons $CO_2$ over the next 3 – 5 years.***
- ***Over 40 tons/hr of moisture that was previously exhausted up the stack is now condensed and returned.***