Menominee Tribal Enterprises

MTE Biomass CHP District Heating System
The Menominee Nation

- The Menominee Nation once occupied 9.5 million acres of land.
- The present Menominee Reservation was established in 1854 with 234,000 acres.
• The Menominee retained their island of timber & community by dint of their own tenacity, federal protection and fortuitous circumstance.

• The Menominee hunted, fished and harvested wild rice on their reservation.
The Menominee Nation

- 95% of the reservation produces the finest old stands of hardwood, pine and hemlock located in the Great Lakes region.

- Forty-six of Wisconsin’s timber varieties grow and are harvested on the reservation.
The Menominee Nation

- 24 miles of the Wolf River flows through the Menominee Reservation.

- It is one of the last pristine rivers in the state.

- Located along the river at Keshena Falls is the Menominee Logging Camp Museum

- Visitors view over 20,000 artifacts housed in 7 log buildings
MTE is the business arm of the Menominee Indian Tribe of Wisconsin
MTE is owned and operated by the Menominee Indian Tribe of Wisconsin through a 12 member Board of Directors elected from the members at large.
• Committed producer and manufacturer of quality sustainable forest products since 1908.

• Employs ~300 individuals throughout its operation. The mill alone employs ~160 in peak season.

• MTE embodies the culture, values and spirituality of the Menominee
Project Scope

- Demo and Replace a 25,000 PPH boiler with a 8,600 PPH high pressure steam boiler
- Automate and rework existing boiler to operate for peaking and backup
- Install backpressure steam turbine generator
- New Fuel handling, storage and processing system
- Tie additional load to the steam plant
- Repair and replace steam plant infrastructure
Automation and Rework of Existing Boiler

• New PLC controller
• VFD motors
• Air locks
• Replaced worn cyclone vents
• Reduced number of cyclone tubes to match new airflow
Dramatic reduction in emissions after rework
Installed new boiler
Old Fuel Processing and Storage
New Fuel Processing
New Fuel Storage
Deaerator Serves New and Existing Boilers
Backpressure Steam Turbine Generator
The Bag House
RESULTS

• Reduced fuel use by 11,000 tons per year

• Fuel flexibility

• Labor Savings

• PM reduction of >100 tons per year
Cost Summary

- **Total Project Cost** – $3,800,000
- **DOE Grant** – $1,036,000
- **WBUG Grant** - $250,000
- **REAP Grant** - $250,000
- **FOE Incentive** - $150,000
- **BIA Grant** - $25,000

Balance funded with MTE reserves and Indian Land Capital Company Loan
Benefits

• Reduce fuel use by 11,000 tons per year
• Generate 1,000 MWh of electricity annually
• Reduction in PM emissions by 115 tpy
• Annual operating savings of >$500,000
• Replaced aging infrastructure