CASE STUDY: BOILER EFFICIENCY IMPROVEMENT

SYSTEM TYPE: Boilers

PROJECT FINANCIALS

- **Total Turnkey Installed Cost: $ 160,000**
- **Annual Energy Cost Savings: $ 57,500**
- **Simple Energy Funded Capital Payback: 2.78 years**
- **Average Project IRR: 35%**
- **CO2 Equivalent Reduction : 225 tCO2e (Natl. Avg. Emission Rate)**

FOOD PROCESSING Facility Optimizes Boiler Operation and Reduces Energy Use and O & M Costs

System Description

- One 800 HP natural gas fired steam boilers plus one older natural gas fired back up boiler
- Load can normally be carried on the 800 HP boiler but it requires full capacity of boiler
- Process uses steam for heating product and pasteurization
- Steam to hot water heat exchangers are use to generate hot water for clean up

System Opportunities

- Optimization of the boiler operation and combustion efficiency
- Installation of economizer in boiler flue gas exhaust to recover heat
- Install VFD on combustion air fan to improve efficiency
- Boiler stack support required use of horizontal economizer, physical room available and access was very tight
- Boiler combustion fan was at limit for supplying pressure and air flow

Project Description

- Installed new digital controls on 800 HP boiler to allow use of O2 trim for tuning
- Installed new boiler economizer to recover flue gas heat to preheat boiler feedwater
- Installed new fan wheel and VFD on combustion air fan to increase air flow
- Retuned boiler combustion system for optimized operation

Project Benefits

- New more efficient boiler controls and heat recovery equipment
- Optimized and more efficient operation of the boiler operation
- Reduction in energy usage
- Reduction in O&M costs and better overall operation of the boiler system

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Plant Profile

- Food Processing Facility
- Production, packaging, warehouse, and offices
- Facility utilizes a central boiler plant to provide steam and hot water for process heating and building heating

Key Benefits

Cost Savings	$ 57,500
Carbon Reductions	225 tCO2e (Natl. Avg. Emission Rate)
Fuel Type	Natural Gas
Payback	2.78 Years
Project IRR	35%

Financial Data

Investment	$160,000
System	Boilers
Life Expectancy	N/A
Incentives/Rebates	N/A
Payback Period	2.78 Years

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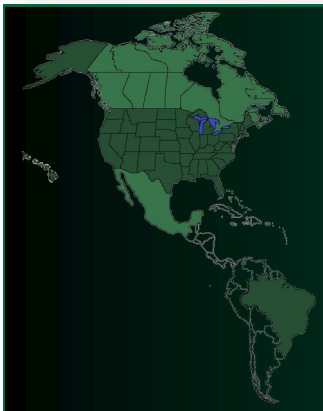
Achieve energy/sustainability goals & increase profit - *Guaranteed*



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