



Saving Energy for Fabricated Pipe

The Louisiana State University Industrial Training and Assessment Center (LSU-ITAC) is committed to helping local facilities take the next steps to energy efficiency and sustainability. Fabricated Pipe partnered with LSU-ITAC for an assessment of their facility. The students' findings are detailed below.

Assessment Benefits

- The report identified a total cost saving of **\$61,811** per year.
- The total implementation cost was **\$261,257** leading to an average payback period of **4.23** years.
- The implementations of our team's recommendations would reduce their carbon dioxide emissions by **21.71%**.

Summary

The Louisiana State University Industrial Training and Assessment Center (LSU-ITAC) performed an assessment of a local industrial facility in need of energy savings. The assessment took place in McComb, Mississippi on December 2, 2024 recommendations were finalized in the report estimating a total cost savings of \$61,811 per year. An annual reduction of 70 tons/year was estimated for the recommended changes. By working with Fabricated Pipe, student engineers were able to help a local company save money and go green!



Fabricated Pipe – McComb, MS.

Photo includes: FPI personnel, and LSU-ITAC team: Tommy Nguyen, Dylan McDonald, Dania Abdulaziz, Suede Willoughby, Mona Mansouri, and Dr. Chao Wang

Fabricated Pipe

Fabricated Pipe manufactures industrial pipes using raw materials such as carbon steel, stainless steel, titanium, Inconel, aluminum, chrome, and other alloys. The facility uses state-of-the-art machinery and CNC technology to complete processes such as cutting, beveling, welding, assembly, quality control, packaging, and storage. The 87 employees keep this ~152,000 sq. ft. facility operating smoothly. LSU-ITAC was impressed with the facility's energy-efficient and sustainable best practices already in place prior to the assessment. These best practices include the full implementation of LED lighting, recycling pipe waste, and the use of occupancy sensors to reduce unnecessary lighting energy use.

Evaluation Approach

The LSU-ITAC team consisted of 5 students, 1 director, and 3 assistant directors. Once on site, the team worked with Facility Manager, Ben Fromenthal to tour the facility and identify areas of possible recommendations. After a brief meeting, students revisited potential recommendations to collect data for the final report process. The assistant directors worked with plant

Facility Highlights

- The Fabricated Pipe team operates from 6:00 AM to 4:00 PM, Monday through Thursday, for a total of 2,080 operating hours per year.
- The ~152,000 square foot facility includes 2 large shops, 2 smaller shops with x-ray and 10-ton overhead cranes, and 2 moderate sized covered painting areas.
- The entire area is housed on 45 fenced acres.

management on identifying areas of concern for additional recommendations. The team had a final meeting with the Mr. Fromenthal about the findings and returned to campus to conduct further research and calculations. The LSU team finalized and submitted the report on January 26, 2025.

Replace Fossil Fuel Equipment with Electrical Equipment

The LSU-ITAC team discovered that the facility could save \$44,252 annually by replacing four diesel-powered forklifts with electric forklifts. The facility currently uses diesel-powered forklifts to move products and materials throughout the facility and warehouse. Replacing these forklifts with electric alternatives would reduce diesel usage,

lower operating and maintenance costs, and reduce carbon dioxide emissions. Although this recommendation has an implementation cost of \$192,732, the payback period is 4.36 years. Based on the facility's total annual utility cost of \$125,259, this AR alone would save about 35.33% of the facility's current annual utility costs.

Other Recommendations

Our team found three other recommendations, and when combined with the savings from the fossil fuel equipment replacement, they would save the company 49.35% in total annual utility costs! AR-1 was to install programmable thermostats at the facility. AR-2 was to install sub-metering equipment. AR-4 was to upgrade the old air compressor.

ITAC Recommendations that were Implemented at the Facility

Assessment Recommendations	Annual Resource Savings (kWh/MMBTU/gallons/etc.)	Total Annual Savings	Implementation Cost	Simple Payback
Install Programmable Thermostat in the Facility	11,711 kWh	\$1,382	\$525	0.38 yrs.
Install Sub-metering Equipment	29,350 kWh	\$3,463	\$3,000	0.87 yrs.
Replace Fossil Fuel Equipment with Electrical Equipment	677 MMBTU of diesel -27,456 kWh	\$44,252	\$192,732	4.36 yrs.
Upgrade Old Air Compressors	975 MMBTU of diesel -81,314 kWh electricity usage	\$12,714	\$65,000	5.11 yrs.
Total:	1,652 MMBTU of diesel -67,709 kWh	\$61,811	\$261,257	2.68 yrs. (avg.)

