



Saving Energy for Daybrook Fisheries, Inc.

The Louisiana State University Industrial Training and Assessment Center (LSU-ITAC) is committed to helping local industries take the next steps to energy efficiency and sustainability. Daybrook Fisheries has recently partnered with LSU-ITAC for an assessment of their facility.



Daybrook Fisheries, Inc. - Empire, Louisiana. Photo taken during assessment by ITAC Team. Pictured from left to right: Suede Willoughby (LSU ITAC), Ashlee Robinson (LSU ITAC), Amelie Echeverria (LSU ITAC), Tucker Brown (LSU ITAC), Dr. Chao Wang (LSU ITAC), and Jason Walker (Daybrook Fisheries)

Assessment Benefits

- The report identified a total cost saving of **\$467,664** per year.
- The total implementation cost is **\$1,722,455** leading to an average payback period of **3.68** years.
- The implementations of our team's recommendations will reduce their carbon dioxide emissions by **6.53%**.

Summary

The Louisiana State University Industrial Training and Assessment Center (LSU-ITAC) is committed to helping local industries take the next steps to energy efficiency and sustainability. Daybrook Fisheries has recently partnered with LSU-ITAC for an assessment of their facility. The assessment took place in Empire, Louisiana on October 26, 2023. 6 recommendations were finalized in the report estimating a total cost savings of \$467,664 per year. An annual reduction of 1,676 tons/year is estimated for the recommended changes. By working with Daybrook fisheries, student engineers were able to help a local company save money and go green!

Daybrook Fisheries, Inc.

Daybrook Fisheries is a fishery and fish products manufacturing facility. The company specializes in pet food, animal feed, and supplements such as fish oil. The 100 employees keep this 1,256,825 square-foot facility running smoothly. LSU-ITAC was impressed with the facility's energy-efficient best practices in place prior to the assessment. These best practices included full implementation of LED retrofits in the facility, variable frequency drives installed on some motors, and the utilization of combustion controls and digitalization.

Evaluation Approach

The LSU-ITAC team consisted of four students and three assistant directors. Once on site, the team worked with the Technical Director, Jason Walker, to tour the facility and identify areas of possible recommendations. After a brief meet, students revisited potential recommendations to collect data for the final report process. The assistant directors worked with plant management on identifying areas of concern for additional recommendations. The team had a final meeting with Jason about the findings and returned to campus to conduct further research and calculations. The

Facility Highlights

- This site is a part of LSU-ITAC's rural outreach initiative to better help industries in remote areas of the state.
- Annual production for this facility is 600,000,000 pieces/yr.
- Daybrook is a huge, million+ square foot facility where they make multiple important products for agriculture and health.
- Jason Walker is an LSU alumnus working at Daybrook as the Technical Director who aided in the facilitation of this assessment with the LSU-ITAC team!

LSU team finalized and submitted the report on December 24, 2023.

Install Wind Turbine Offshore to Generate Electricity

The LSU-ITAC team discovered that Daybrooks Fisheries, Inc. could save \$452,959 annually by installing wind turbines offshore to generate electricity. By taking advantage of their geographically windy location, the facility can generate their own power and utilize the monetary savings for other initiatives. While the recommendation would cost \$1,680,000 to implement, it has a fairly

short payback period of 3.71 years and cost savings of \$452,959 per year.

Other Recommendations

Our team found 5 other recommendations, and when combined with the savings from the installation of wind turbines offshore, they would save the company 14.25% of their current total annual utility costs! AR-1 was to eliminate leaks in compressed air lines. AR-2 was to reduce the discharge pressure of the compressed air system.

AR-3 was to install programmable thermostats. AR-4 was to install occupancy sensors. AR-6 was to use flue-gas heat to preheat boiler feed-water.

ITAC Recommendations that were Implemented at the Facility

Assessment Recommendations	Annual Resource Savings	Total Annual Savings	Capital Costs	Simple Payback
Eliminate Leaks in Compressed Air Lines	33,093 kWh	\$3,640	\$180	0.05 yrs.
Reduce the Discharge Pressure of the Compressed Air System	16,006 kWh	\$1,761	\$100	0.06 yrs.
Install Programmable Thermostats	11,830 kWh	\$1,301	\$100	0.08 yrs.
Install Occupancy Sensor	3,362 kWh	\$370	\$75	0.20 yrs.
Install Wind turbine Offshore to Generate Electricity	4,117,813 kWh	\$452,959	\$1,680,000	3.71 yrs.
Use Flue-gas heat to Preheat boiler Feed-water	405,024 kWh	\$7,633	\$42,00	5.50 yrs.
Total	4,587,128 kWh	\$467,664	\$1,722,455	3.68 yrs.

