

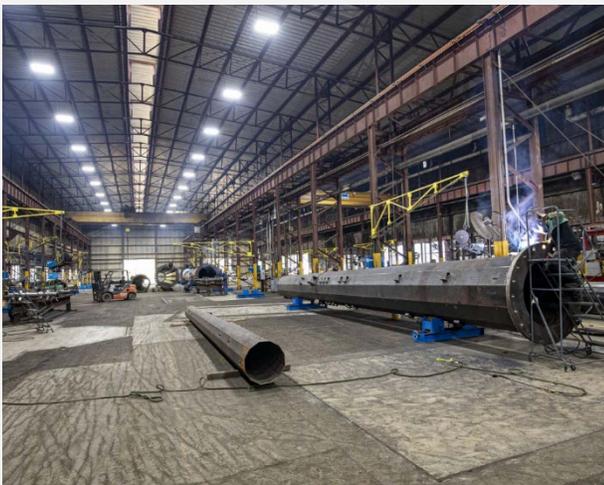
# Industrial Assessment Center

LSU partnered with Southland Industrial Coatings

U.S. DEPARTMENT OF  
**ENERGY**

## Summary

The Louisiana State University Industrial Assessment Center (LSU-IAC) is committed to helping local industries take the next steps to energy efficiency and sustainability. Southland Industrial Coatings has recently partnered with LSU-IAC for an assessment of their facility. The assessment took place in Amite, Louisiana on July 22<sup>nd</sup>, 2021. Ten recommendations were finalized in the report estimating a total cost savings of \$110,422 per year. An annual reduction of 406 tons/year is estimated for the recommended changes. By working with Southland Industrial Coatings student engineers were able to help a local company save money and go green!



Southland Industrial Coatings produces customized steel structures. *Photo from <https://www.gridstructures.com/capabilities/production>*

## Southland Industrial Coatings

Southland Industrial Coatings offers galvanizing, metalizing, sandblasting, fireproofing, and painting service for Electric Utility and Renewable Energy Industries. This company is a division of Southland Steel. They have over 40 years of experience to provide their customers with the best products and service. The 49 employees keep this 16.5 facility running smoothly. LSU-IAC was impressed with the facility's energy-efficient best practices in place prior to the assessment. These best practices include the implementation of metal recycling to reduce waste, the use of an economizer to reduce fuel usage, and the partial installment of LED lighting.

## Evaluation Approach

The LSU-IAC team consisted of four students and three assistant directors. Once on site, the team worked with plant management 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 the plant manager about the findings and returned to campus to conduct further research and calculations. The LSU team finalized and submitted the report September 20<sup>th</sup>, 2021 and has since coordinated with Southland Industrial Coatings. on implementation of the recommendations.

## Assessment Benefits

- 1.** The report identified a total cost saving of \$110,422 per year.
- 2.** The total implementation cost was \$76,273 with a payback of 0.69 years.
- 3.** These implementations would reduce carbon emissions by 12.96%.

## Use Optimal Size Air Compressors for Large kWh Savings

The LSU-IAC team discovered that Southland Industrial Coatings could save 759,646 kWh annually by replacing their four 400 HP compressors and chiller with one 100 HP compressor. The facility only requires a compressed air rate of 500 CFM, while the air compressors had a capacity of 1,900 CFM. Therefore, the team recommends downgrading to one 100 HP compressor to meet the 500 CFM requirement. The current compressors require a 200-ton chiller to cool the compressors, which would not be necessary with this change to the one compressor. Not only would implementing this save kWh, but it would also save \$79,003 per year!

### Other Energy-Saving Recommendations

While the air compressor recommendation is a great option for cutting costs and energy usage for Southland Industrial Coatings, our team found nine other recommendations with high savings and low implementation costs! AR-1 was to reduce air compressor discharge pressure. AR-2 was to install programmable thermostats. AR-3 was to eliminate air compressor leaks. AR-4 was to control lighting. AR-5 was to install occupancy sensors. AR-6 was to use higher efficiency lamps and ballasts. AR-8 was to use energy-efficient belts. AR-9 was to use flue gas to preheat combustion air. Finally, AR-10 was to optimize a power factor at the facility.

### Recommendations Presented by IAC

Assessment Recommendations	Annual Resource Savings	Total Annual Savings	Capital Costs	Simple Payback
<b>Air Compressor Discharge Pressure Reduction</b>	47,121 kWh	\$4,901	\$25	0.005 yrs.
<b>Install Programmable Thermostats</b>	16,061 kWh	\$1,670	\$75	0.04 yrs.
<b>Eliminate Compressed Air Leaks</b>	83,055 kWh	\$8,638	\$675	0.08 yrs.
<b>Lighting Control</b>	14,920 kWh	\$1,552	\$300	0.19 yrs.
<b>Install Occupancy Sensors</b>	4,850 kWh	\$504	\$100	0.20 yrs.
<b>Use Higher Efficiency Lamps or Ballasts</b>	122,116 kWh	\$12,700	\$4,332	0.34 yrs.
<b>Use Optimal Size Air Compressors</b>	759,646 kWh	\$79,003	\$63,000	0.80 yrs.
<b>Utilize Energy-Efficient Belts</b>	2,935 kWh	\$305	\$318	1.04 yrs.
<b>Use Flue Gas to Preheat Combustion Air</b>	46 MMBTU	\$264	\$1,400	5.30 yrs.
<b>Power Factor Optimization at the Facility</b>		\$885	\$6,048	6.83 yrs.
<b>Total</b>	<b>1,050,704 kWh &amp; 46 MMBTU</b>	<b>\$110,422</b>	<b>\$76,273</b>	<b>0.69 yrs.</b>