

**BENEFITS:**

- Identified potential annual cost savings of \$29,334
- Recommendations saved approximately 17% of operating costs
- 100% of recommendations implemented

ADDRESSING THE NEEDS OF INDIVIDUAL PLANTS AND PLANTING THE SEEDS FOR A SECURE FUTURE.

"Found the study from Syracuse University to be thorough and extremely helpful in reducing utility costs"

- Stan Dahle

Helping you achieve your energy goals

Summary

Through the Department of Energy's *Industrial Assessment Center* (IAC) located at Syracuse University, a metal finishing manufacturer was able to realize significant savings from reductions in energy and productivity costs. Through recommended changes to the compressed air system, administrative costs, machine changes, and lighting facilities, the metal finishing company will be able to save approximately \$29,334 annually.

Assessment Overview

A team of students and faculty from the IAC at Syracuse University performed an industrial assessment at Coatings Technology Inc. in Rochester, New York, in the winter of 2003. The assessment was led by Center Director, Frederick J. Carranti, P.E. a faculty

member in the Department of Mechanical and Aerospace Engineering. The IAC team employed a comprehensive assessment methodology that considered energy, waste, and process-related improvements. The team examined all large energy-using equipment and systems for potential savings. They compiled a waste inventory and investigated the potential for waste reduction or improved disposal/recycling methods. The team also examined manufacturing processes for potential improvements, and emerging technologies were assessed for potential contributions to efficiency improvements.

Energy Conservation

The Syracuse IAC was able to identify a potential annual savings of \$29,334.

The company implemented all recommendations made by the IAC and the recommendations saved approximately 17% of operating costs.

Applications:

The Syracuse University Industrial Assessment team discovered opportunities to decrease energy usage and thereby increase capacity, improve product quality, and enhance corporate competitiveness. The IAC team conducted a comprehensive assessment covering energy, waste and process-related improvements. The team's goal was to identify significant opportunities for cost savings, quality improvements, and productivity enhancement.



Company Background

Coatings Technology, Inc., specializes in advanced and proprietary industrial coatings and chemistry. The company was founded in 1988 and is now one of the leading metal finishing job shops in Western New York. The company offers metal finishing services including electroless nickel plating, anodizing, passivation of stainless steel, brass blackening and zinc plating.

The company workforce consists of 25 employees and is housed in a facility of approximately 32,000 ft².

Energy focus



Overview of Recommended Actions

The table below summarizes specific recommendations identified during the assessment. These projections of savings and capital costs identified during the assessment have been validated through rigorous engineering analyses.

There were five separate recommendations resulting from the energy assessment and they are summarized below.

Getting the most from our research analysis

"Highly recommend the service to other New York companies"

- Stan Dehle

USEFUL WEBSITES



Recommended Action	Annual Resource Savings (\$)	Annual Cost Savings (\$)	Project Cost (\$)	Simple Payback Period
Reduce Compressor Air Pressure	26.3 MMBtu/yr	\$1,047	None	Immediate
Utilize Acid Life Extender for Plating Tanks	Acid: 6,600 gallons	\$21,400	\$1,800	1 month
Discontinue Inappropriate Compressed Air Usage	77.0 MMBtu/yr	\$1,534	\$327	2.5 months
Insulate Plating Tanks	439 MMBtu/yr	\$2,283	\$995	5.3 months
Replace T-12 Fluorescent Lighting	77.3 MMBtu/yr	\$3,080	\$8,364	2.7 years
Totals	620 MMBtu/yr	\$29,344	\$11,486	

Syracuse University
Industrial Assessment Center
149 Link Hall
Syracuse NY, 13244-1240
Phone: 315 – 443 -1523
Fax: 315 – 443 - 9099
<http://iac.syr.edu>

Energy Efficiency & Renewable Energy
US Department of Energy
Washington DC 20585-0121
<http://www.eere.energy.gov/>

Industrial Technologies Program
Energy Efficiency & Renewable Energy
US Department of Energy
Best Practice Software Tools
www.oit.doe.gov/bestpractices/software_tools.shtml

Industrial Assessment Center
Field Office, Rutgers University
<http://iac.rutgers.edu/>

Industrial Technologies Clearing House
Phone 800-862-2086
Fax: 360-586-8303
clearinghouse@ee.doe.gov

Coating Technology Inc
(585) 546-7170
800 Saint Paul St
Rochester, NY 14605

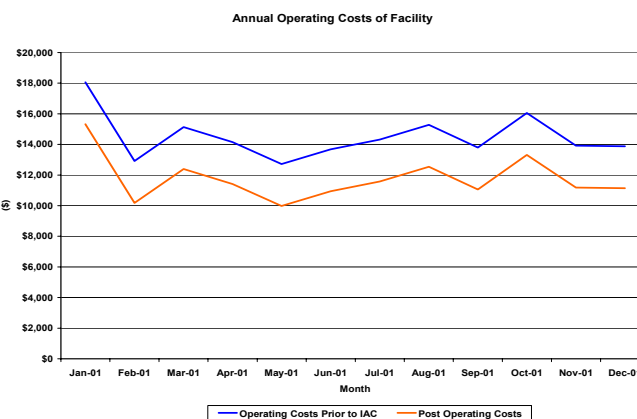
Compressed Air System

Compressed air can be the most expensive use of energy available in a plant. However, compressed air is clean, readily available, and simple to use, making it one of the most used utilities for manufacturing processes. So, it is important that alternative cost-effective forms of power be explored before using compressed air.

The company currently uses six drying stations, each containing air hoses that produce ¼ inch jets to dry parts after plating. It was recommended that engineered air nozzles be installed to minimize excess air use, but still provide the same results. A proper nozzle meets OSHA standard "1910" and can save 55% of the airflow.

Acid Life Extender

The company uses acid baths in order to manufacture their product. After 2-3 weeks the acid baths become "dirty" and must be disposed of by sending the acids to a treatment center where they are balanced for pH. A new chemical, PRO-pHx can be added to the acid baths and extend the life of the acid greatly.



This practice reduces costs associated with treating and disposing of the acids along with the replacement of acids. Additional savings can be achieved by decreasing employee setup time and increasing worker safety.

Pollution Prevention

Reductions in air pollution are projected due to the proposed energy efficiency opportunities. In general the electric energy savings will decrease carbon dioxide (CO₂), carbon (C), sulfur dioxide (SO₂), and oxides of nitrogen (NO_x) emissions at the utility's power generating station. Natural gas savings will decrease mainly CO₂ emissions at the plant.



SYRACUSE UNIVERSITY
COLLEGE OF ENGINEERING & COMPUTER SCIENCE
Department of Mechanical and Aerospace Engineering
149 Link Hall
Syracuse, NY 13244-1240

