



#### At A Glance:

- Implemented 60% of recommendations to save an estimated \$14,882
- Tessy Plastics successfully implemented six out of ten recommendations, four of which required a payback of one year or less

# Energy Saved

*“Working with the IAC students was not only informative but rewarding and even fun. Their detailed professional approach coupled with their obvious passion for the work was so nice to see. They brought a fresh perspective to our challenges with energy consumption and offered practical, doable recommendations”*

*-Cindy M. Bush, Director, Environmental Health and Safety*



#### Assessment Overview

A team of students & faculty from the IAC at Syracuse University performed an industrial assessment for Tessy Plastics Corporation. The assessment was sponsored by the Department of Energy and was led by Center Director Suresh Santanam, Sc.D., P.E., a faculty member in the Department of Biomedical and Chemical Engineering. The IAC team employed a comprehensive assessment methodology that considered energy, waste, & process-related improvements. The team examined all large energy-consuming equipment & systems for potential savings. They compiled a waste inventory & investigated the potential for waste reduction or improved disposal/recycling methods.

The team also examined manufacturing processes for potential improvements, & emerging technologies were assessed for potential contributions to efficiency improvements.

#### Summary

Through the Department of Energy's *Industrial Assessment Center* (IAC) located at Syracuse University, an injection molded plastic part manufacturer was able to realize significant savings from reductions in energy & productivity costs. Through recommended changes to the compressed air system, insulation of pipes, and the update of inefficient equipment, the company is saving approximately \$19,613 annually.

#### Applications:

The Syracuse University Industrial Assessment team identified opportunities to decrease energy usage, increase capacity. The Industrial Assessment Center team accomplished this after conducting a comprehensive assessment of the company's systems and utility scheme. The team's goal was to identify significant opportunities for cost savings, quality improvements, & productivity enhancement.



## Company Background

Tessy Plastics Corporation is headquartered in Central New York and was founded by Henry Beck in 1973. With the capacity to engineer, manufacture, assemble, and distribute products, it serves a wide variety of industries ranging from medical, consumer products, business machines, electronics, packaging and more. Tessy Plastics is a family owned company with facilities also in Virginia and China. They are constantly looking to expand their global presence to provide businesses with the high quality solutions necessary for success.

### Overview of Recommendations:

The table below summarizes specific recommendations that were identified during the assessment and were implemented or will be implemented in the near future. These projections of savings & capital costs identified during the assessment have been established through engineering analyses and research. As a result, seven recommendations were implemented by the company and are listed below.

### Implementation:

The company contacted the IAC team expressing concerns regarding their energy usage. In total, 404,708 kWh of electricity were saved annually. In addition, annual demand was reduced by 77.64 kW.

Helping you achieve your energy goals



Implemented Recommendations						
Assessment Recommendations	Annual Resource Savings	Total Annual Savings	Capital Costs	Other Costs	Simple Payback	
<i>Eliminate Use of Electric Space Heaters</i>	<i>Electricity:</i> 8,100 kWh	\$516	None	None	Immediate	
	<i>Demand:</i> 45 kW					
<i>Implement a Regular Leak Maintenance Program</i>	<i>Electricity:</i> 251,288 kWh	\$10,554	\$500	\$2,585	0.3 years	
	<i>Electricity:</i> 18,396 kWh					
<i>Install Energy Efficient Exit Sign Bulbs</i>	<i>Demand:</i> 25 kW	\$3,064	\$1,800	\$348	0.7 years	
	<i>Labor Hours:</i> 55 h					
	<i>Avoided Cost:</i> \$660					
<i>Insulate Pipes</i>	<i>Natural Gas:</i> 16.6 MNMBtu	\$119	\$95	\$27	1.0 years	
<i>Install Occupancy Sensors on Vending Machines</i>	<i>Electricity:</i> 8,850 kWh	\$372	\$670	\$134	2.2 years	
<i>Replace CRT Computer Monitors with LCD</i>	<i>Electricity:</i> 5,431 kWh	\$257	\$1,000	\$70	4.2 years	
	<i>Demand:</i> 7.44 kW					
<b>Totals</b>	<i>Electricity:</i> 292,065 kWh	\$14,882	\$4,065	\$3,164	N/A	
	<i>Demand:</i> 77.64 kW					
	<i>Labor Hours:</i> 55 h					
	<i>Avoided Cost:</i> \$660					
	<i>Natural Gas:</i> 16.6 MMBtu					

### Points of Interest:

The company was able to realize significant savings by implementing a regular leak maintenance program. The associated savings from this recommendation results from saving energy in the compression process. In addition, installing more efficient equipment, such as LCD computer monitors and LED exit signs, also represent significant energy savings.

Other Recommendations						
Assessment Recommendations	Annual Resource Savings	Total Annual Savings	Capital Costs	Other Costs	Simple Payback	
<i>Reduce Compressed Air System Line Pressure</i>	<i>Electricity:</i> 137,819 kWh	\$5,788	None	None	Immediate	
<i>Reduce Lighting Levels</i>	<i>Electricity:</i> 28,641 kWh	\$1,418	None	None	Immediate	
	<i>Demand:</i> 55.1 kW					
<i>Install Occupancy Sensors in Clean Room Hallway</i>	<i>Electricity:</i> 9,579 kWh	\$402	\$102	\$56	0.4 years	
<i>Duct Outside Air to Compressors</i>	<i>Electricity:</i> 112,643 kWh	\$4,731	\$1,034	\$1,940	0.6 years	

**For More Information;  
Or to request your own energy assessment:**

### Syracuse University Industrial Assessment Center

263 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  
<http://www1.eere.energy.gov/industry/>

### Industrial Assessment Center

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

### Tessy Plastics Corporation

488 NY-5  
Elbridge, NY 13060  
<http://www.tessy.com/>



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

