



Intier Automotive: Automotive Equipment Maker Implements Big Energy Saving Recommendation

ASSESSMENT DATE: FEBRUARY 20, 2002

BENEFITS:

- Identified an opportunity to reduce annual demand costs by \$142K
- Recommendation reduces total utility costs by 12% per year
- Payback period less than 3 months
- Four additional recommendations were made to reduce energy usage, demand and electrical fees
- Total potential savings of \$155K

APPLICATIONS:

"Through the services provided by the University of Michigan Industrial Assessment Center, and increased knowledge of our personnel, we now consume less energy every month. This is a benefit to our company as well as our community."

Paul Jackson
Intier Automotive.

Summary

The assistance of the University of Michigan's Industrial Assessment Center was solicited to perform an energy audit of the Intier Automotive's facility in Michigan. The assessment team concluded that the production rescheduling would reduce electrical demand by more than 950 kilowatts and reduce costs by \$142,000. Further results from this assessment are highlighted throughout the case study.

Company Background

Intier Automotive is an industry leader in the development and manufacture of innovative vehicle interior and closure systems and components for the global automotive industry. The 180,000 square foot facility in Brighton, Michigan specializes in automotive trim for door panels. The facility had enacted a number of energy and waste savings prior to the assessment including recycling plastic materials, installing an energy management system and compact low-density trash. The total energy budget for the plant is approximately \$1.215 million per year, the bulk of which is electricity usage and the remainder natural gas consumption.

Assessment Approach

A team of students and faculty from the University of Michigan's Industrial Assessment Center performed an Industrial Assessment in the winter of 2002. Center Assistant Director, Dr. David Everest, Associate Research Scientist in the Department of Mechanical Engineering at the University of Michigan led the assessment.

Energy Conservation

During the assessment, the IAC team identified solutions for reduction of electrical demand by rescheduling production time. Through a detailed energy usage analysis and active monitoring of electrical demand at various places throughout the facility, the assessment team noticed "spikes" during peak demand periods. This sudden increase in demand was due to a one-shift production line that operated during peak demand hours.



The Observation

The IAC team observed that the plant was spending a great deal of money on electricity. Through a detailed energy usage analysis and active monitoring of electrical demand at various locations throughout the facility, the assessment team noticed “spikes” during peak demand periods. This sudden increase in demand was due to a one-shift production line that operated during peak demand hours when electrical demand costs were at the highest rate.

The Solution

The particular manufacturing line was isolated and determined to be responsible for 28% of the on-peak demand. This manufacturing line stood out because it was a single shift operation, and the demand clearly increased 950 kW when the line was operating. The recommendation to move the production line from peak to off-peak demand periods resulted in the largest savings for this facility. Savings resulted in a reduction of 12% of the company’s utility bills.

Results

Rescheduling the production line to off-peak demand periods translated to a realized cost savings of \$142K (which included adjustment for an increased labor rate associated with night production) and a payback period of 3 months. In addition to rescheduling production, Intier Automotive saved 950 kW of electrical demand. The completed report contained four additional recommendations with savings of approximately 112,400 kWh of electricity, 200 kW of demand, and \$13K. All five recommendations contained a combined savings \$155K.

Projects Identified

Opportunities for reducing energy consumption that were identified during the assessment are described in the following table:

Table 1. Opportunities at Intier Automotive’s Brighton Facility

Recommended Action	Annual Resource Savings	Annual Cost Savings (\$)	Implementation Cost (\$)	Payback (months)
<i>Scheduling</i> Shift S5S Production to Off-Peak Hours	950 kW	\$142,000	\$30,400	3
Totals	950 KW-mo/yr	\$142,000	\$30,400	3

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