



Dura Automotive Systems: Industrial Energy Assessment Finds Significant Savings

ASSESSMENT DATE: NOVEMBER 10, 1999 AND DECEMBER 6, 1999

BENEFITS:

- Over 70% of recommendations implemented
- Opportunities for savings existed in energy consumption, waste, and productivity
- Annual cost savings of \$141,700
- Overall simple payback period of 7 months

APPLICATIONS:

"The assessment team's findings provided direction and emphasis to carry out our plans for improvement."

-Kirk Nielsen
Senior Industrial Engineer
Dura Automotive Systems

Summary

The University of Florida performed an Industrial Assessment survey of the Dura Automotive Systems plant in Jacksonville, FL. This survey, funded through a grant from the Department of Energy, was aimed at evaluating Dura's plant operations for the purpose of efficiency improvement and cost reduction. After analyzing gathered data from the plant, the assessment team developed 11 recommendations, of which 8 have been implemented. The recommendations focused on areas of energy conservation regarding lighting and compressed air, as well as waste minimization and productivity enhancement. Further results from this assessment are highlighted throughout the case study.

Company Background

Dura Automotive Systems is a mid-sized automotive parts manufacturing company specializing in control system and hardware for cars, trucks, & vans. Dura is a tier-1 JIT supplier to the big-3 automakers as well as foreign automakers. The Jacksonville facility manufactures parking brake controls, door frames, seat tracks, and window systems. The 265,000 sq ft plant employees approximately 500 employees and operates on a 2-shift basis.

Assessment Approach

A team of faculty, staff and students from the University of Florida Industrial Assessment Center performed a two-day assessment in the fall of 1999. The assessment was led by Center Director, Dr. Diane Schaub, Professor in the Industrial and Systems Engineering Department at the University. Engineering students studied the plant operations over a period of months and performed analysis to determine the efficacy of possible improvements. A formal report was drafted and submitted to Dura for evaluation and implementation.

Energy Conservation Awareness

The facility had several best practices already in place in the management and operation of the plant. These are all extremely worthwhile measures which help improve the profitability and competitiveness of the company. Employees utilize a program in which lights are turned off when an area is not in use. Additionally, a strong fluid-recycling program through the facility's wastewater treatment plant was also already in place and the practice of renting gas tanks has been replaced by an in-house gas mixing system.



Recommended Actions

The greatest value for Dura came from the process of being audited, and the subsequent analysis and report. This created a significant increase in awareness of the costs Dura was incurring in these areas, and a hint of the savings potential associated with making necessary improvements. As a result, Dura implemented a new utility tracking program to graphically display energy and waste disposal costs to all plant employees. This simple charting program was later implemented on a division-wide basis. Dura also completely revamped its solid waste disposal program, and shifted from its use of land fill disposal, to an aggressive recycling program for pallets, cardboard, and metal scrap. Solid waste improvements yielded a sustainable annual savings of nearly \$80K (most of which came from recycling pallets and cardboard). Finally, Dura redoubled its energy conservation efforts, with primary focus on reducing wasted energy consumption in lighting systems, motors, and compressed air. These improvements have made a significant contribution to the profitability of the facility and have helped maintain its viability for the future.

Results

Table 1 shows the annual cost savings the Dura Automotive facility obtained by implementing these energy conservation opportunities identified by the IAC team during the assessment. Based on these results, the facility can reduce its energy consumption by over 550 MWh each year and save the facility over \$141K in cost savings per year. The total estimated implementation cost of the recommendations is approximately \$83K yielding an overall simple payback of 7 months.

Projects Identified

Opportunities for reducing energy, waste and productivity costs that were identified during the assessment are described in the following table:

Table 1. Opportunities at Dura Automotive System's Jacksonville Facility

Recommended Action	Annual Resource Savings	Annual Cost Savings (\$)	Implementation Cost (\$)	Payback (months)
<i>Energy Conservation</i>				
Turn Off Dust Collectors	20,516 KWH/yr 35 KW-mo/yr	\$1,096	\$0	0
Repair Compressed Air Leaks	189,039 KWH/yr	\$6,393	\$2,600	5
Install Low Wattage High Pressure Sodium Lamps	347,304 KWH/yr 62 KW-mo/yr	\$9,663	\$59,850	74
<i>Waste</i>				
Install Trash Compactor	N/A	\$25,982	\$15,000	7
Recycle Wooden Pallets	587,500 lbs	\$53,580	\$0	0
Install Controllers on Water Sprays	56,400 gallons	\$24,816	\$370	1
<i>Productivity</i>				
Install Capacitors to Correct Power Factor	N/A	\$2,493	\$5,450	26
Eliminate Double Handling of Products	N/A	\$17,680	\$0	0
Totals	556,859 KWH/yr 97 KW-mo/yr	\$141,702	\$83,270	7

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