

EMCO Enterprises

COMPANY BACKGROUND



EMCO Enterprises is a fully owned subsidiary of Andersen Windows, which is located in Bayport, Minnesota. The company is North America’s leader in storm door manufacturing and employs more than 500 people at two locations in the United States: Des Moines, Iowa and Luray, Virginia. EMCO produces 15 different types of storm doors.

BILL MAURER
MECHANICAL ENGINEERING, IOWA STATE UNIVERSITY



PROJECT BACKGROUND

The intern focused on solid waste recycling and energy reduction projects that included compressed air leak reductions and lighting efficiency.

INCENTIVES TO CHANGE

EMCO is committed to becoming an environmental leader in the manufacturing business. To do this, the company has initiated an ECO 3 program and has set company-wide environmental goals that include a 10 percent increase in recycling and a 6 percent reduction in energy consumption over the next year.

RESULTS

Recycling: A process has been implemented to increase recycling amounts company wide, which will benefit the environment and EMCO’s bottom line. EMCO sent more than 470 tons of trash to the landfill last year, but with increased recycling efforts, the company’s goal is to cut this number to fewer



than 300 tons over the next year. Cardboard accounted for approximately 65 percent of the volume of trash EMCO sent to the landfill last year. Smaller amounts of other materials such as paper, wood and aluminum were also landfilled. EMCO has already increased its recycling of these materials. Packaging material for the aluminum product accounts for the majority of paper used at the plant. The company is testing alternatives to eliminate the paper packaging, thus reducing usage and cost.

Compressed Air Leaks: Compressed air leaks account for approximately 18 percent of EMCO’s compressor electrical costs. A total of 148 leaks were identified and tagged throughout the manufacturing floor, accounting for 320 CFM. By repairing these air leaks, EMCO’s electricity costs will be reduced significantly. In addition, ongoing audits and maintenance of the compressed air system will decrease the amount of wasted energy. Air leaks are not always predictable, but with increased attention, the leaks can be kept to a minimum, which will benefit EMCO and the environment. Maintenance and upkeep of the compressed air system will have a small upfront cost, but the payback is almost immediate.

Lighting: The lighting used on the plant floor is outdated and inefficient. It is recommended that EMCO update from T12 fluorescent bulbs to T8 fluorescent bulbs. Since all ballasts will need to be changed, the company would incur labor and supply costs, but fewer fixtures would be needed. With fewer fixtures and increased efficiency, EMCO could cut back on energy consumption by a considerable amount.

AIR POLLUTANTS DIVERTED IN TONS

Total for all sectors	
SO2	1.807
CO	0.1837
NOx	0.992
VOC	0.03
PM	0.043

GREEN HOUSE GASES DIVERTED IN TONS (CO2 Equivalent)

Total for all sectors	
CO2	334
CH4	12.558
N2O	0.167
CFC	4.108

PROJECT	ANNUAL COST SAVINGS	ENVIRONMENTAL RESULTS	STATUS
RECYCLING	\$15,466	180 TONS	IMPLEMENTED
AIR LEAKS	\$18,000	298,400 KWH	IMPLEMENTED
LIGHTING	\$15,000	250,000 KWH	RECOMMENDED