AMERICAN PACKAGING CORPORATION

COMPANY BACKGROUND

American Packaging Corporation is a flexible packaging manufacturer servicing food, beverage, medical, personal care, household, pet food, agricultural chemical, and lawn and garden markets. American Packaging Corporation employs over 550 people and is one of the largest privately held packaging companies in the world. Its operations include rotogravure and flexographic printing, adhesive and extrusion laminating, hot and cold seal coating, pouching, and bagging. The Story City facility has 130 employees and produces intermediate and wide webbing using 2- to 3-ply adhesives lamination. They operate the latest slitting and rewinding equipment and have the ability to manufacture bags and pouches with a wide range of structures.

STORY CITY

JARED NOACK
MECHANICAL ENGINEERING
IOWA STATE UNIVERSITY

PROJECT BACKGROUND

American Packaging Corporation has implemented sustainable practices for the past decade. This summer the company partnered with the Pollution Prevention Program to help make progress on stalled projects as well as to identify and implement new projects to reduce the amount of energy consumed.

INCENTIVES TO CHANGE

American Packaging Corporation has divisional packaging "green team" members. Their goal is to help American Packaging become green and sustainable. In order for American Packaging to stay competitive, it must meet the demands of their customers, who are also transitioning to sustainable practices. That is why they are making great strides towards recycling every piece of their solid waste, and are looking for ways to reduce electricity, water, and gas consumption, as well as to reduce solid and hazardous waste.

RESULTS

Compressed Air: Every machine in the plant depends on and uses compressed air. The demand for air accounts for 16 percent of the electric bill. A leak detection program was implemented and 122 leaks were found. A repair program was implemented to fix all leaks. Continuing the leak detection and repair program will help reduce costs. A leak reporting program was introduced to the machine and maintenance workers to help them identify and repair the noticeable leaks.

Lighting: A lighting audit was done, revealing that the lighting conditions around the plant could be improved. The lighting conditions were impaired by inefficient lighting layouts and fixtures around the facility, which increased the electric bill. Re-lighting the facility with new T5 high output fluorescents will improve the lighting efficiency and provide a safer working environment. The new fluorescent lights will provide a more efficient lumen output. Placing occupancy sensors in the warehouse and in other infrequent traffic areas will reduce their kilowatt-hour usage. The EPACT tax credit of 2005 will help American Packaging reduce the installation cost of re-lighting the plant area.

Fixture Diversion: A local company with a more feasible application for metal halide fixtures has been contacted. The company will take the fixtures free of charge, thereby diverting 4.5 tons of solid waste from the landfill and saving disposal fees.

Boiler: A boiler replacement project would have a number of beneficial environmental impacts. The boiler is currently used for the drying process on one printing press. The process takes place more than 200 feet from where the boiler is located. Replacing the boiler with a direct gas-fired heat exchanger will save great quantities of water, chemicals, natural gas, and maintenance labor. The boiler itself emits temperatures of 250 degrees Fahrenheit. If the boiler is not replaced in the near future, insulation is recommended for both safety and energy conservation purposes.

Air Pollutants Diverted in Tons

	Total for all sectors
SO2	3.3749
CO	0.4708
NOX	1.6313
VOC	0.2167
PM	0.0891

Green House Gases Diverted in Tons (CO2 Equivalent)

	Total for all sectors
CO2	637.886
CH4	114.564
N2O	33.5159
CFCS	7.8936

PROJECT	ANNUAL COST SAVINGS	ENVIRONMENTAL RESULTS	STATUS
REPAIR COMPRESSED AIR LEAKS	$26,339	376,270 KWH	IMPLEMENTING
RE-LIGHTING	$24,593	367,585 KWH	IMPLEMENTING
RE-LIGHTING	$2,892	611 THERMS	IMPLEMENTING
FIXTURE DIVERSION	$1,284	4.5 TONS	IMPLEMENTING
ELIMINATE BOILER	$1,317	19,551 KWH	RECOMMENDED
ELIMINATE BOILER - WATER	$10,992	25,550 GALLONS	RECOMMENDED
ELIMINATE BOILER - CHEMICAL	$1,041	11 GALLONS	RECOMMENDED
ELIMINATE BOILER	$14,739	21,168 THERMS	RECOMMENDED
INSULATE BOILER	$3,170	3,762 THERMS	RECOMMENDED