

2010 Case Study

Schwan's Global Supply Chain, Inc.

Intern: Ruth Alford
Major: Industrial Engineering
School: Kansas State University

Salina, Kansas



Company background

Schwan's Global Supply Chain, Inc. purchased Tony's Pizza Service in Salina, Kansas in 1970. Since that time, the plant has grown from a 12,000-square-foot facility to more than 450,000 square feet, becoming one of the largest pizza plants in the world. The Salina pizza plant produces brands such as Tony's, Red Barron, and Schwan's, to name a few.

Project background

Ruth Alford's main project throughout the summer was to research the possibility of implementing a waste-heat recovery system that could be used to capture heat currently being exhausted through bakery stacks. In addition, Alford researched computer power management and energy-efficient lighting to assist Schwan's in reducing energy consumption.

Incentives to change

By reducing energy usage, Schwan's hopes to reduce energy costs and improve its environmental footprint. Schwan's has partnered with the Pollution Prevention Institute under the summer intern program to assist with environmental projects that have a positive return on investment. With rising energy prices, Schwan's recognizes the increased benefits of reduced energy usage and lower greenhouse gas emissions.

Projects reviewed for E2/P2 potential

1. Computer Power Management

Alford discovered that the computers operating at the Schwan's facility currently do not operate on computer power management settings. This results in the computers draining energy all day long, even when not in use. Alford suggested the computers be placed into a low-power "sleep mode" after a period

of inactivity. Activating sleep features has the potential to save 108,363.6 kWh or an estimated \$6,500 in electrical costs annually.

2. Energy-Efficient Lighting

Schwan's currently has need for a great amount of lighting to provide for worker safety, while ensuring production of a quality product. Most of the lighting within the plant consists of inefficient, older-style lamps and ballasts such as T12s and metal halides. Alford recommended the older lights be replaced with new, more energy-efficient lighting for cost savings and greater lumen output. Alford developed a lighting-audit spreadsheet and researched replacement lamps for different areas within the plant. She identified suitable energy-efficient replacements that could potentially result in an estimated savings of 252,532 kWh and \$15,153 in reduced energy costs annually.

3. Waste-Heat Recovery

Schwan's currently produces waste heat that is exhausted through its bakery oven stacks. As of now, the heat is going unused. However, Schwan's sees the opportunity this waste heat could provide to its facility. Alford researched the temperature, characteristics, and availability of the waste-heat stream. Using this information, Alford identified a waste-heat recovery system that could provide the most potential benefit to the facility. This system has the potential to reduce Schwan's energy costs by an estimated \$343,048.61 annually. Additional research will need to be done to determine the exact placement of the system as well as more detailed specifications.

Table 1: Summary of 2010 Intern Recommendations for Schwan's Global Supply Chain, Inc.

Project	Est. Potential Annual Energy Savings	Greenhouse Gas Reduction (MTCO ₂ e)	Status
Computer Power Mgmt	\$6,501.80	76.972	Recommended
Energy-Efficient Lighting	\$15,153.16	179.377	Recommended
Waste-Heat Recovery	\$343,048.61	4,021.18	Recommended/Needs further research