

# Flexsteel Industries Inc.

## COMPANY BACKGROUND



Flexsteel Industries Inc. began manufacturing upholstered furniture in 1893. Headquartered in Dubuque, Iowa, Flexsteel employs 1,450 people corporately with operations throughout the United States. As a manufacturer of residential, commercial and vehicle seating, Flexsteel develops furniture products for home, office, motor home, travel trailer, yacht, health care and hotel applications.

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### PROJECT BACKGROUND

This summer, Flexsteel coordinated with the Pollution Prevention Intern Program to identify opportunities for operational improvements at the 100-year old facility in conjunction with their environmental initiative. This project focused on improving the lighting systems within the Dubuque facility to produce better lighting conditions while reducing the amount of energy consumed.

### INCENTIVES TO CHANGE

Flexsteel is involved with Enhancing Furniture's Environmental Culture (EFEC), a voluntary environmental management program developed by the American Home Furnishings Alliance (AHFA) to create and maintain a proactive environmental system. The EFEC committee at Flexsteel has been working toward reducing its environmental impact by creating a facility-wide recycling program, educating its employees about the environment, working with its suppliers to induce positive change at their companies and making systems and processes more efficient at Flexsteel Dubuque.

### RESULTS

**Lighting Upgrades:** A lighting audit of the plant was performed, which confirmed that the lighting conditions could be improved. While T8 fluorescent lights offer better light in addition to saving energy, inefficient high-intensity discharge and outdated T12 fluorescent lamps provide much of the plant lighting. The current lighting system, which includes more than 3,200 fixtures, accounts for more than one-half of the electric bill. Employee morale, safety and productivity can all be improved with lighting renovations. Since the lighting layout had not been adjusted for changes in function for different areas, production



lighting was left where warehouse sections are now located. This resulted in over-lighting and under-lighting, varying fixture types and sporadic light temperatures leading to headaches and eyestrain.

The current fixtures can all be replaced with new T8 fluorescent fixtures that deliver more light, allow for better visibility and reduce electric bills. This solution will provide a standard replacement light with increased lamp life that will reduce maintenance time and improve lighting quality. Rebates from Flexsteel's utility provider and a tax deduction provision in the Energy Policy Act of 2005 will help the company reduce the cost of lighting upgrades.

**Lighting Management:** Lights that are continuously lit in unoccupied areas also contribute to excessive electric bills. This problem has been reduced by education through the EFEC committee and written reminders throughout the facility.

**Energy Projects:** Energy reduction opportunities have been identified at the plant for appliances and electronics including computers, fans, space heaters, refrigerators and microwaves.

**Compressed Air Leaks:** An estimated 35 percent of the compressed air generated is currently lost to leaks. Repairing these leaks will save roughly \$7,000 in energy costs annually, but a leak detection program also needs to be implemented to detect and suppress leaks before they become bigger issues.

### AIR POLLUTANTS DIVERTED IN TONS

| Total for all sectors |      |
|-----------------------|------|
| SO <sub>2</sub>       | 5.16 |
| CO                    | 0.53 |
| NO <sub>x</sub>       | 2.45 |
| VOC                   | 0.09 |
| PM                    | 0.12 |

### GREEN HOUSE GASES DIVERTED IN TONS

(CO<sub>2</sub> Equivalent)

| Total for all sectors |        |
|-----------------------|--------|
| CO <sub>2</sub>       | 954.56 |
| CH <sub>4</sub>       | 35.89  |
| N <sub>2</sub> O      | 0.48   |
| CFC                   | 11.74  |

| PROJECT                       | ANNUAL COST SAVINGS | ENVIRONMENTAL RESULTS | STATUS      |
|-------------------------------|---------------------|-----------------------|-------------|
| LIGHTING UPGRADES             | \$74,500            | 783,000 KWH           | IN PROGRESS |
| MISCELLANEOUS ENERGY PROJECTS | \$14,000            | 147,000 KWH           | RECOMMENDED |
| FIX COMPRESSED AIR LEAKS      | \$7,000             | 74,000 KWH            | RECOMMENDED |