WEST LIBERTY FOODS, LLC

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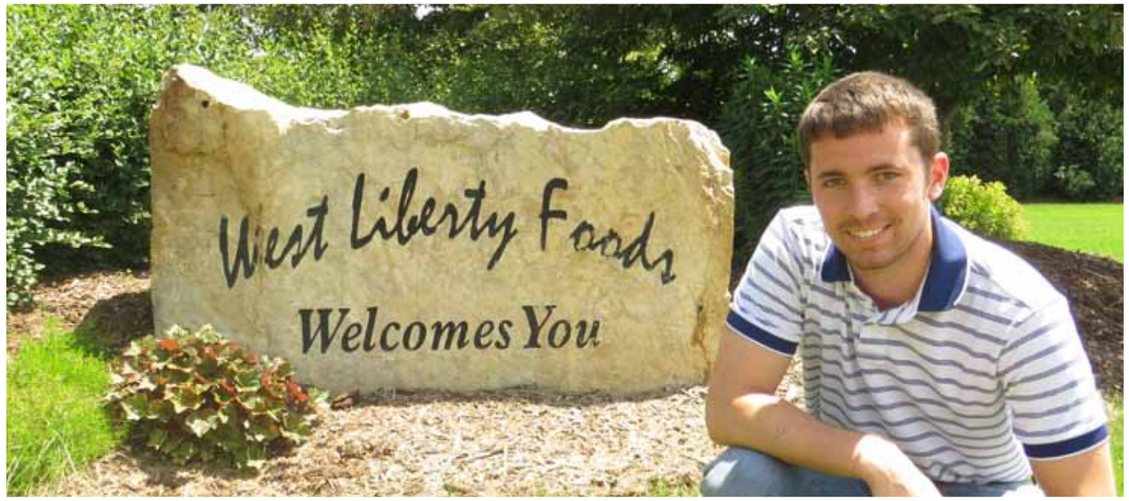
COMPANY PROFILE

West Liberty Foods was founded in 1997 by the Iowa Turkey Growers Cooperative. The West Liberty, Iowa, plant is one of four and also houses a research and development center and a state-of-the-art quality assurance lab. Along with processing turkeys, West Liberty Foods produces all types of cooked and ready-to-eat meat products. The West Liberty facility employs 850 people, and can process over 20,000 large turkeys per day.



PROJECT BACKGROUND

To increase sustainability, the West Liberty plant is focusing on reducing energy use. Last year, 31 million kWh of electricity was used to power the facility. An intern was placed at the company to conduct a motor efficiency analysis and recommend strategies to improve the operating efficiency and reduce utility costs at the West Liberty plant.

INCENTIVES TO CHANGE

West Liberty Foods is committed to preserving natural resources. West Liberty Foods' existing facilities are all third-party certified as landfill-free facilities. West Liberty Foods is also ISO 14001 certified which means the company is engaged in continuous-improvement strategies towards environmental excellence. Reducing electricity usage offers opportunities for West Liberty Foods to make strides toward their environmental goals while also lowering costs.

RESULTS

Motor Replacement: After compiling an analysis of the efficiency of all the motors in the plant, a focus was put on recommendations to optimize the efficiency of the motors with the highest usage and largest potential for savings. The capital expense often leads companies to place a lower priority on motor replacement and upgrades. Upgrading motors with NEMA-rated premium-efficiency motors can significantly reduce a company's energy usage and cut operating costs.

The analysis determined that the 17 largest motors at the plant, located in the engine room, had the potential for the quickest return on investment. Ranging from 75 to 800 horsepower, these motors operate compressors for either refrigeration or air compression. A list of motors targeted for replacement has been outlined and could provide an estimated annual cost savings of $109,734.

Synchronous Belt Drives: The strategic replacement of motor drive systems provides another opportunity for improving operating efficiency. Many of the motors at the plant operate on a V-belt drive system that is based on tension. Belts that are too tight or too loose can cause the motor to run less efficiently. Synchronous belt drives are designed to resist slipping and are not affected by minor changes in tension, so they maintain their efficiency throughout the life of the belt. Converting the V-belt drive system to a synchronous-belt drive system can provide a cost-effective option for increasing efficiency of existing motors.

Two production machines in the plant are each run by two 75-horsepower motors with standard V-belt drives. Upgrading these four motors to a synchronous-belt system could save more than $4,600 per year in energy costs.

Two large blenders, 8k and 10k, are used daily to blend the spices and meat together. The 8k has two 30-horsepower motors while the 10k has two 40-horsepower motors that keep them each running. Synchronous-belt drives are recommended for these four motors to increase the efficiency and reduce energy costs.

CONVENTIONAL AIR POLLUTANTS AND GREENHOUSE GASES DIVERTED IN METRIC TONS

From Recommendations in Recommended Status

TOTAL FOR ALL SECTORS								
CO_2	SO_2	CH_4	N_2O	CFC	NO_x	VOC	PM_{10}	$MTCO_2e$
1174.60	6.33	44.03	0.59	14.40	3.01	0.09	0.16	1232.81

PROJECT	ANNUAL COST SAVINGS	ENVIRONMENTAL RESULTS	STATUS
MOTOR REPLACEMENT	$109,734	3,919,070 KWH	RECOMMENDED
SYNCHRONOUS BELT DRIVES	$7,375	234,177 KWH	RECOMMENDED