

Project Overview

Intern: Troy Teeter

Major: Mechanical Engineering

School: University of Nebraska-Lincoln

Company Background: Lindsay Corp., and Smart Chicken

Performed assessments of two manufacturers at no cost to the client, in conjunction with Asset Environments, an energy management consulting firm. Lindsay Corp is one of the largest irrigation pivot producers in the Midwest. Smart Chicken Provides high quality, humanly raised poultry.



Project Descriptions

The intern focused on waste energy reduction at industrial clients including Lindsay Corp and Smart Chicken. At Lindsay, while resource reduction measures are being taken, the later expansions, while functional, produce opportunities for improvement and reduction. When provided the opportunity, Smart Chicken requested the investigation of a potential new motor solution that they had been presented by a third-party representative. The proposed motors claim to save the company an estimated 46% on electrical load. The total Operation and Maintenance (O&M) as well as implementation cost would create a net negative result to the existing VFD-Motor system. This does not include the fossil fuels associated with transport and delivery. Switching motors, the company would avoid \$1,900 saving 30,000 kWh annually, but would observe an implementation cost of \$42,240 and disposal of 30 working variable frequency drives and 34 active motors.

Pollution Prevention Benefits

By Implementing facility improvement measures to a variety of clients, the combined energy savings and avoided waste for projects mentioned in this report are shown below in Table I.

Table I: Pollution Prevention Benefits and Results

Project	Projected Annual Cost Savings	Energy Waste Eliminated (per year)	Energy Waste Eliminated (per year)
Other Projects	\$18,000	121,000 kWh	76.75 Metric Tons of Carbon Dioxide Emissions
Lindsay	\$35,000	450,000 kWh	283 Metric Tons of Carbon Dioxide Emissions
Smart Chicken	\$2,000	30,000 kWh	19.14 Metric Tons of Carbon Dioxide Emissions
TOTAL	\$55,000	601,000 lbs	379 lbs Metric Tons of Carbon Dioxide Emissions