

Project Overview

Intern: Brandon Schurman

Major: Mechanical Engineering

School: University of Nebraska-Lincoln

In the summer of 2017 the P3 program partnered with the Nebraska Industrial Assessment Center (NIAC) to assess 8 Nebraska businesses. The NIAC is a part of an environmental sustainability initiative funded through the U.S. Department of Energy. The program performs free, one-day energy assessments for local manufacturing plants, develops energy saving recommendations for the facilities, and produces reports that detail these finds which are given to the manufacturers. Over the course of the summer, Brandon Schurman participated in five assessments including a pork packaging plant, a construction lumber supplier, a plastic injection molding facility, and a cardboard box manufacturer. Schurman was also the lead analyst on one assessment for a medical device manufacturer.

Schurman prepared a number of assessment recommendations over the summer. Each recommendation is included in the report. A summary of the annual energy savings, annual cost savings, implementation cost, and simple payback for each assessment recommendation in this report is shown in Table 1.

In addition to the assessment recommendations, Schurman also developed a comprehensive pump calculator tool and collected data for the Motor Market Assessment study that the NIAC is currently participating in. The pump calculator will assist future NIAC students during assessments and in the development of recommendations for clients. Data for the Motor Market Assessment was collected for the construction lumber manufacturer during the summer with four more clients to participate over the duration of the project.

Table 1: Overall Summary of Assessment Recommendations

Project or AR	Annual Savings		Implementation Cost (\$)	Simple Payback (years)
	Resource (unit/year)	Dollars (\$/year)		
2.0 - Stanley Healthcare	1,041 kW	\$36,130/year	\$382,920	10.6 years
	48,080 kWh/year			
3.1 - Fremont WWTF	953,109 kWh/year	\$34,245/year	\$37,984	1.69 years
3.2 - Jayhawk Boxes	47 kW	\$5,660/year	N/A	0 years
3.3 - Smithfield	5,433,000 gal/year (water)	-\$400/year	\$46,000	N/A