# Project Overview

**Intern:** Ashlyn Kampschneider
**Major:** Chemical 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, Ashlyn Kampschneider participated in five assessments including a pork packaging plant, a medical device manufacturer, a grain silo, and two plastic injection molding facilities. Kampschneider served as the lead analyst on both plastic injection molding assessments.

At the time of the writing of this report only one recommendation Kampschneider has developed has been quantified. Kampschneider assisted other NIAC interns during assessments in recommendations dealing with lighting and other optimizations. Two of these recommendations have been included in this report and a summary can be seen in Table 1.

In addition to work on the assessments, Kampschneider developed a utility guide that will help business owners and municipal utility managers read and understand their electricity bills. This knowledge can help facility managers better understand how their electricity usage changes over time and how this affects their total bill. This can help identify areas where cost savings can be found.

***Table 1:*** *Summary Assessment Recommendations*

| **Assessment Recommendation (AR)** | **Annual Savings** | | **Capital Investment ($)** | **Simple Payback (Years)** |
|---|---|---|---|---|
| | **Resource (Unit/year)** | **Dollars ($/year)** | | |
| AR #1: Upgrade Facility Lighting | 291,700 kWh<br>36.5 kW | $16,300 | $67,600 | 4.15 |
| AR #2: Stockpile Printed Circuit Boards to Reduce Oven Running Time | 57,720 kWh | $1,530 | ------ | Immediate |
| **Total Sum*** | **350,000 kWh**<br>**36.5 kW** | **$18,000** | **$67,600** | **3.8** |
| *The overall payback was calculated based on the total sum of all capital investments divided by the total sum of dollar savings from all the recommendations | | | | |