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Background

Throughout the summer with the Nebraska Industrial Assessment Center (NIAC) I assessed two companies in the state of Nebraska. These companies are:

- Timpte – David City, NE: Trailer Manufacturing
- FlexMag – Norfolk, NE: Magnetic Sheets and Strips Manufacturing

Project Description

As part of these assessments, I was able to use my background in engineering for these recommendations:

- *HVLS Fans*: High-volume low-speed fans (HVLS) are a new solution for generating air circulation in large enclosing such as warehouses. This project focuses on addressing and quantifying the energy savings (cooling and heating) and the other benefits the HVLS fans have on improving productivity.
- *Downsize Motors*: Operating motors at low partial-load levels results in efficiency reductions, which can contribute to a significant portion of a company's electric bill. This project utilizes the DoE motor challenge program to estimate operating efficiency and motor load values in order to make the best decision about downsizing motors.

Pollution Prevention Benefits

The benefits of all recommendations over the summer are summarized below in Table 1:

Table 1: Recommendation Savings and Benefits

Recommendation	Energy Savings	Annual Cost Savings	Implementation Cost	Payback Period (year)	GHG Reduction (MTCO2e/yr.)
Downsize Motors	48,040 kWh	$3,342	$13,737	4.1	34
Usage of Motor Cogged Belts	84,658 kWh	$2,519	$696	0.3	59.9
Upgrade Facility Lighting	104,052 kWh	$18,589	$28,618	1.5	73.6
Install HVLS Fans	-	$35,287	$54,115	2.1	-
TOTAL	**-**	**$59,737**	**$97,166**	**1.6**	**167.5**