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Background

As a part of the Nebraska Industrial Assessment Center (NIAC) team, one manufacturing facility called Timpte, Inc. has been assessed as a lead student. The Timpte manufacturing plant in David City, NE has been producing semi-trailers for agricultural, fertilizer, energy, and aggregate sectors for so long.

Project Description

Examples of the recommendations that were prepared include:

- *Reduce Compressed Air Leak*: Air leaks in the air loops mean more electricity usage & cost for running the compressors for the facility. In two hours, the NIAC team was able to identify around 50 air leaks when examining around 20% of the two air loops of the facility. By implementing the quarterly leak detection program, the facility can get the electricity & cost savings with reasonable payback period.
- *Reduce Water Meter Size*: The water customer charges for the facility increase with water meter diameters. The water meters in the facility are oversized, which incur more customer costs in their water bills. Based on the water usage of the facility, it is reasonable to replace their oversized water meters with lower sized meters, which will significantly reduce the customer charges.
- *Cool Air Intake for Compressors*: The mechanical room of the facility contains four compressors in a small space. Since the room is congested, it easily accumulates heat emitted from the two running compressors. A cool air intake for the mechanical room would lower the input temperature of the air for the compressors and lead to reduced operational costs, energy savings, and GHG emission reductions.

In addition to these, a special project about the following topic has been done,

- *Fuel Cost Calculator for Producing Hot Water*: An excel calculator has been generated which shows the fuel cost for producing unit volume of hot water based on four input parameters. By knowing the cost of fuel for producing unit volume of hot water, any relevant facility can calculate how much money can be saved if they want to save some hot water. Knowing this cost benefit may prompt the facility to reduce their hot water usage in the facility.

Pollution Prevention Benefits

Recommendation Savings and Benefits

Recommendation	Energy Savings	Annual Cost Savings	Implementation Cost	Payback Period	GHG Reduction (MTCO2e/yr)
Reduce Compressed Air Leak	104,495 kWh/yr	$3,660/yr	$4,000	1.1 years	113.48
Reduce Water Meter Diameters	-	$3,390/yr	$90	<0.1 year	-
Compressor Cool Air Intake	37,845 kWh/yr	$1,930/yr	$2,550	1.3 years	41.10
TOTAL	**142,340 kWh/yr**	**$8,980/yr**	**$6,640**	**0.7 year**	**154.58**