Intern: Clay Keyser Major: Mechanical Engineering School: University of Nebraska-Lincoln



Background

As part of the Nebraska Industrial Assessment Center (NIAC) team, the intern assessed Horton Holding, Inc. which manufactures fan clutches for semi-trucks and farming equipment. Also, the intern assessed Aulick Industries and CS Precision. Aulick industries primarily produces tractor trailers while CS Precision makes hydraulic coupling components.

Project Description

As part of these assessments, examples of the recommendations that were prepared include:

- Recycling the pallets instead of incineration. By recycling the pallets, the disposal payments would decrease.
- Reducing the operating pressure of the air compressors.
- Replacing standard V-belts with higher efficiency cogged V-belts on its applicable machinery. Cogged Vbelts, on average, are 2% more efficient than standard V-belts because of the reduction of energy losses due to friction, bending and slippage.

Pollution Prevention Benefits

The benefits of the recommendations discussed above are summarized below in Table 1:

Recommendation	Annual Cost Savings	Implementation Cost	Payback Period (years)	Energy Savings (kWh/yr.)	GHG Reduction (MTCO2e /yr.)
Recycle Pallets	\$58,750	-	-	-	-
Pressure reduction in air compressors	\$600	-	-	42,310	31.5
Cogged V-Belts	\$3,200	\$1,575	0.5	54,000	40.2
Total	\$ 62,550	\$1,575	0.5*	96,310	71.7
*Total payback period was calculated by taking the total implementation cost divided by the total					
annual cost savings.					

Table 1: Recommendations Savings and Benefits