Titan Tire, Inc.

TITAN TIRE, INC.

Des Moines, Iowa
Polk County

Intern: Policarpio Soberanis
Major: Ph.D in Industrial Engineering
School: University of Iowa

DES MOINES

The Company

Titan Tire Corporation is a division of the parent company Titan International, Inc. Under the Titan Tire name, the company has grown to become the third largest manufacturer of off road tires. Currently, Titan Tire remains the only manufacturer that is dedicated to the off road market. Some of the major markets served include military, industrial, agricultural, construction, all terrain and specialty tires. In total, there are more than 50 different tires that are supplied to these major markets, the majority of them being agricultural tires.

Project Background

Titan Tire realizes the need to be environmentally conscious and they are willing to take steps to ensure that their operations produce as little waste and consume as little energy as possible. Currently, Titan is ISO 9000 certified and continues to strive to be more efficient. There is constant monitoring of the plant to see what can be done to lower energy consumption and reduce waste.

Incentives to Change

The company's ISO 9000 certification helps to keep things in line while ensuring that the environmental vision of the company is being met. There are a number of issues that need to be addressed. Some of the major opportunities include:

- Storage and production floor lighting
- Green waste reduction
- Humidity room controls
- Carbon black recycling

Current waste amounts and energy use levels are not meeting the company's goals. Management believes that, with a little help, these goals can be met.

Results
Carbon Black
The major coloring and strengthening ingredient in tire manufacturing is carbon black. After an analysis of samples from the excess collection system, it was determined that the current excess carbon black that is collected is not suitable for external recycling.

However, the results also indicated that the carbon black can be recycled back into the system. This will divert about 250 tons per year from the landfill.

Green Waste

Titan has a program to reduce the amount of green waste that is generated, including a system for tracking the origin of waste. However, there are human error issues within the system that can be easily fixed. A presentation was created to inform supervisors about data collection as well as to remind them of the importance of green waste to the company. Another presentation was created for the workers to ensure that they are aware of the importance of the green waste issue. Finally, the waste bins will be refabricated and a new color-coded label system will be used to help track the type of waste that is collected. With the worker training and better knowledge of waste origin, green waste numbers can be significantly reduced.

Storage and Production Lighting

Titan Tire is an around-the-clock operation. With large incentives from MidAmerican Energy and tremendous energy savings possible, Titan will implement a plant-wide upgrade of the lighting system, replacing the current HID lamps and ballasts with T5 fixtures. Once this is complete, annual savings of $430,400 will be realized with an energy use reduction of over 12 million KWh per year. The simple payback period is 5 months for the entire plant.

Humidity Room

Suboptimal conditions in the humidity storage room contribute an extra 10 tons per month in green waste. With an investment in three air conditioner units, this can be reduced significantly. More research on the feasibility of this project is required.

Project Summary Table

Project Description	Environmental Impact	Economic Cost Savings	Status
Carbon Black Recycling	250 tons/year diverted from landfill	$120,000 in reclaimed carbon black and landfill costs	In Progress
Green Waste Reduction	215 tons/year	$400,000 from a 50% reduction in green waste	In Progress
Storage and Production Floor Lighting	12 million kWh/year	$430,400 in energy costs	In Progress
Humidity Room	10 tons/month	More work needed	Recommended