Polaris Industries, Inc.

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Polaris Industries was established in Roseau, Minnesota, in 1954. Polaris designs, manufactures and markets ATVs, snowmobiles, Victory Motorcycles and Polaris Ranger recreational vehicles. There are three manufacturing facilities throughout the U.S., located in Iowa, Minnesota and Wisconsin, as well as wholly owned subsidiaries in the UK, France, Canada, Australia and New Zealand.

Project Background

Polaris is seeking alternatives to the current liquid paints in an effort to minimize hazardous air pollutants to the environment. The liquid paint area also requires a significant amount of chemicals and water to clean the raw plastic parts prior to painting. Polaris would like to identify opportunities to improve chemical and water management, as well as continue to improve its environmentally proactive reputation in the community.

Incentives to Change

Polaris Industries meets the regulations set forth by the Environmental Protection Agency (EPA). Currently, Polaris is using high hazardous air pollutants (HAPs) paints, and emissions still fall under the limit; however, Polaris would like to replace all high HAPs paints with low HAPs paints by January 2007 to further minimize hazardous pollutants in the environment. Other environmentally friendly projects that Polaris has been evaluating include plastic pretreatment, vertical fixture design for the heat booth, installation of an RO system, and dynamometer process modifications to reduce the use of chemicals and water.

Results

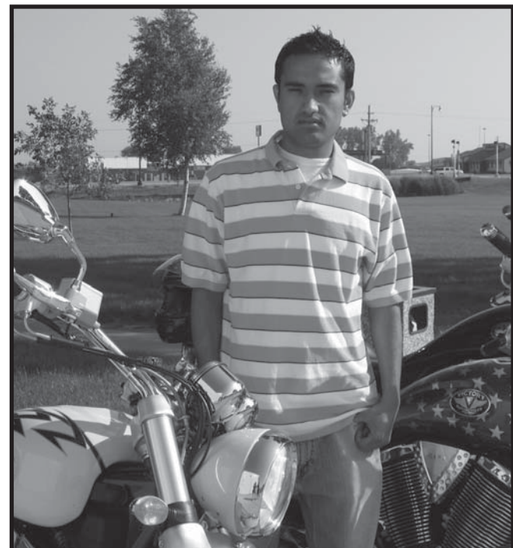
Vertical Fixture Design
Polaris currently uses a horizontal fixture system to hold parts while they are heated in a booth. If vertical fixtures are designed, more parts can be included per cycle and there will be a reduction in energy demand and operating costs.

Low HAPs paints
Fewer hazardous pollutants will be emitted to the environment if high HAPs paints are replaced with low HAPs paints. Testing has been done and it was determined that low HAPs paint would emit 70 percent less hazardous pollutants than high HAPs paints and improve paint quality as well.

Dynamometer Water Reuse
The dynamometer is used to test product engines and includes a single pass cooling water system. The wastewater from the system was found to be contaminant free and lower in temperature than incoming water. Thus, it was proposed to recirculate this water back to the dynamometer.

Reverse Osmosis
A Reverse Osmosis (RO) filtering unit has been installed at Polaris Industries. The system requires less chemical to purify the city water and has proven to be cost-effective.

Plastic Pretreatment
Neither chemical nor water is required to clean parts with a plastic pretreatment system. The plastic pretreatment project would save up to $630,779 per year if successful. Testing and analysis has been conducted to evaluate the feasibility of this system.



Project	Annual Cost Savings	Environmental Results	Status
VERTICAL FIXTURE	$250	Not quantified	Recommended
LOW HAPS PAINTS	$0 (Purchase costs are equivalent for low HAPs and high HAPs paints)	70% emission reduction	Implementation in progress
DYNAMOMETER WATER REUSE	$8,709	2.304 million gallons of water	Implementation in progress
REVERSE OSMOSIS	$44,609	8,692 gallons of chemicals	Implemented
PLASTIC PRETREATMENT	$630,779	1.73 million gallons of water 1,904 gallons of chemicals	Implementation in progress