Project Overview

Industrial Placement
Intern: Carol Faulhaber
Major: Agricultural Engineering
School: Iowa State University

Company Background
With the goal of producing fuel and food to meet the world's increasing demands, Archer Daniels Midland (ADM) is a global leader in agricultural processing. ADM's Columbus, NE facility produces ethanol, corn syrup, and animal feed in a wet mill corn processing plant. ADM is currently expanding its Columbus operations to include a dry mill corn processing plant and a cogeneration plant. After completion, the cogeneration plant will process coal to generate steam and electricity for the dry mill and wet mill and the dry mill corn processing plant will increase ethanol production to approximately 500,000,000 gallons per year.

Project Description
Carol Faulhaber, 2007 Pollution Prevention Program Intern, conducted a Tire Derived Fuel (TDF) Feasibility study to determine potential impacts for supplementing coal used in the cogeneration plant with TDF. In addition, three waste assessments were conducted for fly ash and bed ash, Styrofoam cups, and waste corn cob.

Pollution Prevention Benefits
Table 1, below illustrates the potential cost savings and environmental benefits for each pollution prevention opportunity.

Pollution Prevention Opportunity	Maximum Potential Cost Savings	Pollution Prevention Benefits
Supplement Coal with TDF	$10 Million per year	Solid Waste Reduced: 150,000 tons/year Energy Available: additional 370,000 MBtu available
Recycle Fly and Bed Ash	$600,000 per year	Solid Waste Reduced: 30,000 tons/year
Replace Styrofoam cups with corn plastic mugs	$3,000 per year	Solid Waste Reduced: 690 lbs/ year
Compost Waste corn cobs	$40,000 per year	Solid Waste Reduced: 1050 tons/year

In addition to the environmental benefits and potential cost savings outline above, demonstrating proactive and ongoing environmental stewardship may strengthen community relations and increase employee morale.