Abstract

SIU Green Fund Research Project: Using Waste Motor Oil as Diesel Fuel

The Waste Motor Oil (WMO) project is about researching the process of creating a clean diesel fuel out of WMO. Using WMO as a diesel fuel is nothing new but has historically been done in a crude and unscientific fashion. This project will provide an opportunity for closely controlled, concrete data which others can reference in order to properly process diesel fuel out of WMO. Collection, processing, and testing of the WMO fuel will be done by students in the AUT-475 Waste Motor Oil special projects class. A limited number of diesel powered vehicles at the Transportation Education Center (TEC) will be fueled using the processed WMO and tested for performance, reliability, and the general impact of WMO on a diesel fuel system. After initial testing, and once the fuel has been verified, there is a possibility of expanding and fueling more than just a few vehicles on campus with this WMO. The SIU Green Fund has made it possible for the Waste Motor Oil project to afford all of the proper WMO processing equipment in the interest of sustainability. SIU generates over two thousand gallons of WMO each year, and must pay approximately $0.85 per gallon in disposal costs. This WMO can potentially be recycled into diesel fuel, a valued commodity, for the University's use in fleet vehicles. This project could reduce fuel costs and WMO disposal costs currently imposed on the University while at the same time powering fleet vehicles as needed. Most importantly, this project provides an opportunity for multiple groups within Southern Illinois University Carbondale to work together towards the common goals of waste recovery and energy production. As of now, Automotive Technology, Aviation Technology, Aviation Flight, and Travel Services have been approached and are willing to participate in this project. If this project is a success, it could work campus wide and provide a sustainable diesel fuel for fleet vehicles while reducing costs and waste for SIU.