

Why Biodiesel?

- Compliance with the Energy Policy Act (EPAAct)
- Reduces gas emissions and tailpipe particulate matter (PM), hydrocarbon (HC), and carbon monoxide (CO) emissions, which is safer for human health.
- Biodiesel is a renewable fuel and is biodegradable.
- USA made and supports the American farmer.
- Displaces dependency on imported petroleum.

Steps Taken in an 18-Month Period:

- Onsite visits to other cities and counties already using biodiesel to ask questions and exchange information, especially with KAT.
- Attended meetings and seminars pertaining to biodiesel.
- Performed Internet research on the subject.
- Contacted Jonathan Overly, Executive Director of ETCFC.
- Read and studied a book Jonathan provided entitled "2004 Biodiesel Handling and Use Guidelines."
- Contacted the National Biodiesel Board (NBB) for information and registered with the organization to receive updated information and bulletins.
- Contacted TDOT's Environmental office in Nashville to ask questions and exchange information.
- Contacted biodiesel vendors to ask questions and exchange information.
- Analyzed the vehicle and equipment for age and type the County used.
- Decided to use a soybean feedstock.
- Wrote biodiesel bid specifications and processed a bid through the Knox County Purchasing Department in October 2005.
- Decided to be pro-active and had the 10,000-gallon diesel holding tank cleaned.
- Received first load of B10 in November 2005.

Steps Taken after Receiving and Using Biodiesel:

- Decided to be pro-active and change the fuel filters after the second tank fill-up.
- Kept extra filters in stock for emergencies.
- Changed to B20 in March 2006.

Knox County Government has 98 vehicles and pieces of equipment that now uses biodiesel. Our annual usage is from 98,000 to 100,000 gallons. The County has used biodiesel for one year. During this time, there has been only one driver who complained that his vehicle had a loss of power due to biodiesel usage. After performing a diagnostic test on the vehicle, our mechanics discovered there was a problem with the engine, which wasn't caused by biodiesel usage.

Biodiesel Usage Pros:

- No infrastructure cost.
- Very easy to use.
- Less noxious fumes present in the garage and office areas.

Biodiesel Usage Cons:

- Higher maintenance cost in the beginning due to additional filter changes.
- Biodiesel cost on the average \$.08 more than diesel.
- Fuel needs to be drain out of the seasonal equipment tanks, which is an additional labor cost.
- One year later the holding tank needs cleaning again, which is an additional cost.

When the diesel tank was cleaned, the cleaning process only pumped waste material from the bottom of the tank. The increased levels of the biodiesel obviously cleaned the sides of the tank. The Service Center did have some difficulties with the tank due to the additional cleaning property of the biodiesel. So if the entire tank can't be cleaned in the beginning, the recommendation is to analyze the tank for waste material approximately one year after loading biodiesel in the holding tank.



Picture 1. The main refueling facility for the county where a bio-blend is provided.



Picture 2. Larry Fox (left), Kaye Thompson and Phillip May (not pictured) were the main ones who did the work to get Knox County to start using biodiesel.