

Mid-Atlantic Diesel Collaborative Clean School Bus Workgroup Conference

Biodiesel/E85 Basics for Schools and Administrators

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School transportation fleets do not exist in a closed system. There are neighborhoods and parks through which the buses travel every day. How can we reduce the impact those buses have on the environment of the communities they serve. Renewable Fuels! But just “dumping” fuels into your infrastructure can pose several potential issues. This paper should be used as a guideline to plan your fleet conversion to Biodiesel and E85.

Biodiesel Basics:

1. Your refueling infrastructure must be inspected to determine to be capable of safely handling B20 Biodiesel. The inspection should encompass:
 - a. Determine age of system. Systems over 20 years of age, unless updated with newer rubbers and plastics WILL NOT be able to handle B20 safely. The site manager should also check the composition of the plastics and rubbers on all systems just to be safe.
 - b. Steel tanks need to be inspected for steel composition and general condition. Certain combinations used in steel tanks will add sulphur to B20 and low sulphur diesel.
 - c. Dual wall fiberglass tanks are compatible. No changes necessary just a through cleaning.
 - d. Pumps should also be inspected. Incompatible rubber and plastic must be replaced.
 - e. Determine the age and inventory of your fleet. You will need the age of the buses to determine if the fuel system will handle B20 Biodiesel. Buses older than 1993 will not handle B20 if they use certain rubber fuel lines. This can be fixed, but all of this information should be gathered in order to create budgets and work plan to retrofit buses.
2. Once you have determined that your system is capable of using Biodiesel the following steps should be taken:
 - a. Have all tanks, pipes and hoses cleaned or replaced as needed.
 - b. Install redundant filter systems that should be changed monthly. (In the start of the program, change weekly.)
 - c. Locate a supplier of fuel and lock in your contracts. (RFG will be supplying ASTM Fuels for the Mid-Atlantic Region.)
3. If you determine that your infrastructure will not handle B20, then RFG can help you install smart tanks and fueling equipment. This also is an option or solution to fleets that wish to use Biodiesel and non-Biodiesel low sulphur diesel fuels. It should also be noted that most states are now requiring all new tanks to be above ground and in containment areas.
4. Buses that are converted to B20 should do so in the following manner:
 - a. Month one should be a B10 mixture with fuel filters changed weekly.

- b. Month two should be B15 with fuel filters changed weekly.
- c. Month three B20 mixture with bi-weekly filter changes for one month then assume a normal maintenance schedule.

E85 Basics

1. E85 should be looked at as a totally new fuel and treated as such.
2. New tanks and systems capable of secure handling of E85. (RFG has designed and can install these specialty tanks and equipment that will be safe and meet federal/state standards for years to come.)
3. Best bet is to have professional company come in and design and install your facility.

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