Using Biodiesel In A Fleet Environment

More and more municipal, government and private fleets across Canada are using various blends of Biodiesel in their vehicles and equipment.

The reasons are simple:

• reduce exhaust emissions
• increase lubricity of fuel
• increase life cycle of fuel pumps and injectors
• improve corporate image
• improve employee moral
• be a leader in the fight against Global Warming
Preparing To Use Biodiesel
When making the decision to use Biodiesel, a fleet manager must make the necessary preparations.

These preparations include:

- preparation of the fleet's fueling infrastructure
- education / training of Technicians, Drivers, Purchasing and PR personnel
- development of a contract / tender
- selection of a reliable and reputable Biodiesel distributor
- an emissions reduction monitoring system
In order to have a successful Biodiesel program, the Fleet Manager must ensure that the fleet's fueling infrastructure is properly prepared.

Preparations of the fueling infrastructure should include:

- Testing of fuel tanks, delivery lines and vent lines integrity
- Testing for moisture in the tanks
Preparing The Fuelling Infrastructure

- Cleaning of the fuel tanks
- Installation of filters on the fuel pumps
- Installation of desiccant filters on the fuel tank vents pipes
Training and education programs must be scheduled:

- Technician training
- Driver Training
- Education of Purchasing personnel
- Education of Public Relations personnel
Development of a Contract / Tender

One of the most important parts of the preparation is the development of the Biodiesel Contract / Tender

In addition to pricing, term of contract and the multitude of legal clauses, it is essential that the following be included in the contract / tender:

• Feed-stock used in the Biodiesel production
• The required ASTM specification for the Biodiesel
• The blend of the Biodiesel
• The cloud point of the Biodiesel
• BQ 9000 Certification requirements
• Delivery procedures
Selection of Reliable Distributor

As part of the bid evaluation process, the evaluation team has a number of criteria to consider for each bid

In addition to usual pricing and logistical details, other criteria that need to be considered are:

- vendor track record
- vendor knowledge
- consistent supply
- dedicated delivery tankers
- method of blending
- fuel quality
Fleet Managers are constantly required to justify their actions and changes they put in place - the switch to Biodiesel is no different.

The following items should be constantly monitored:

- average emissions reductions by vehicle class
- average fuel consumption by vehicle class
- average maintenance costs by vehicle class
- comments from employees
- comments from the general public
Engine Warranties & Biodiesel
Many fleets managers remain concerned about losing the warranty on their engines should they use Biodiesel.

All major diesel engine manufacturers, and diesel pump and injector manufacturers, have approved the use of a B5 Biodiesel blend provided that the Biodiesel used for blending meets the current ASTM D6751 requirements.

Manufacturer Warranty Statements are available on the National Biodiesel Board website:  www.nbb.org
Engine Maintenance
**Engine Maintenance**

- Biodiesel could affect some rubber components in the fuel systems of pre-1993 engines. Engines manufactured after 1993 are generally not affected.

- The use of Biodiesel does not require any additional maintenance other than possibly additional fuel filter changes approximately 4 to 6 weeks after switching.

- The use of Biodiesel may enable you to increase the interval between oil changes, however this should only be done in conjunction with a regular oil sampling program.
Engine Maintenance

- The use of Biodiesel will improve the lubricity of your petroleum diesel fuel which will increase the life of fuel pumps, fuel injectors, fuel transfer pumps etc.
  - This is even more important since the introduction of Ultra Low Sulphur Diesel in 2006,
Fuel Quality
The quality of your fuel will greatly affect the success or failure of any Biodiesel program.

- Perform regular maintenance on your storage tanks and distribution pumps
- Ensure regular turnover of stored fuel – just like petroleum diesel fuel long term storage is not recommended
- Perform random sampling and testing of fuel being delivered
Fuel Quality

• Use only Biodiesel that meets ASTM D6751, EN 14214 or CAN/CGSB-3.520 specifications – include these specifications in your purchasing documents

• Specify in your contract/tender that your Biodiesel producer becomes BQ-9000 Accredited and your Biodiesel distributor become BQ-9000 Certified within one (1) year of the issue date
Fuel Blending
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Best performance is achieved when fuel is thoroughly blended

- Injection blending at the rack
- Splash blending in the tanker truck
- Splash blending in the storage tank

Note:
The feedstock used in the production of the Biodiesel will affect the cold flow properties. The cold flow rating must be taken into consideration when blending during the winter months.
Fuel Blending

• B5 can be used year round with your summer or winter fuel

• Many fleets use B20 blended with #2 diesel in the summer and switch to B10 or B5 blended with #1 diesel in the winter

• Fuel conditioners can also be used in your winter Biodiesel

• When splash blending in the winter, both the Biodiesel and petroleum diesel temperatures must be closely monitored to ensure complete blending
General Pointers to Ensure Success
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Biodiesel can be successfully used year round in all fleets by following these simple steps:

• Prepare your fueling infrastructure for the switch to Biodiesel

• Perform regular maintenance on your fueling infrastructure

• Ensure that only the best quality diesel fuel and Biodiesel is used for blending

• Ensure that fuel is well blended

• Regular testing of blended fuel
Leaders in greening Canadian Fleets

Questions / Comments ?