

Chicago Park District Biodiesel Program



Park District Sustainability Efforts

The Chicago Park District (CPD) has a number of different programs implemented to increase sustainability:

These are both internal and external partnerships including:

- Renewable fuel fleet
- Lumber re-use
- 75 % alternative electrical sourcing (Wind/Solar)
- LEED certified buildings
- Car sharing
- Bike share
- Clean Marinas Program – 6 of 10 state certified clean marinas
- Waste and recycle practices



Chicago Park District Vehicle Fleet

Chicago Park District has over 550 vehicles, including:

- (80) E85 vehicles
- (50) hybrid electric vehicles
- (12) compressed natural gas vehicles
- (200) diesel vehicles using 10-20% biodiesel
- (56) diesel vehicles using 10-50% biodiesel



Chicago Park District Biodiesel Program

- Started with B10 blend in April 2013, phased up to B20
- Increased to B35 blend in summer 2014
- Achieved B50 blend in summer 2015
- Currently dispensing B50 blend at 39th, distributing B20 to satellite AST locations



Fueling Facility

Dedicated fueling facility at 39th and Lake Shore Dr. retrofitted in 2011 with new tanks and blending dispenser



Fueling Facility

Blending dispenser allows for any ratio of Biodiesel/Diesel



CPD Biodiesel Implementation - Partners

Creating Partnerships

➤ Chicago Area Clean Cities

- ❑ Active in providing CPD fleet data since 2013

➤ Darling International Inc. – Feedstock Collection

- ❑ Darling International has established a multi-year feedstock donation to the CPD program

➤ Renewable Energy Group

- ❑ REG has 12 active refineries in the US.
 - 2 in IL at Seneca and Danville
- ❑ Currently the largest production capacity producer
 - 375 million gallons in 2015
- ❑ Fuel exceeds ASTM D6751 specs with BQ-9000 and REG-9000 specs

➤ Indigenous Energy

- ❑ Maintaining excellent agency service management and outsources with industry-qualified providers



Biodiesel Implementation

- Source high quality fuel supplier
- Consider testing biodiesel at a third party laboratory
- Maintain fuel quality through proper handling and storage
- Train drivers, supervisors and mechanics to detect changes in vehicle performance and report back to fuel manager
- Collect data to track down any specific fuel related issues

Are my Vehicles Compatible?



- Any diesel engine can run on biodiesel
- Most OEMs warranty B20
- Warranties won't cover bad diesel or biodiesel
- Over 45 million problem free miles logged with B20 blends
- Go to biodiesel.org for specific OEM resources



Biodiesel Solvency



- Biodiesel tends to clean fuel systems
- Cleaning action releases years of diesel varnish
- Accumulated varnish clogs filters
- Increase fuel filter change interval



Biodiesel and Fuel Lines



- Vehicles produced prior to 1992 may have natural rubber fuel lines that will degrade with biodiesel usage
- Viton and synthetic rubber lines and seals should be used
- Check for fuel lines sweating or leaking

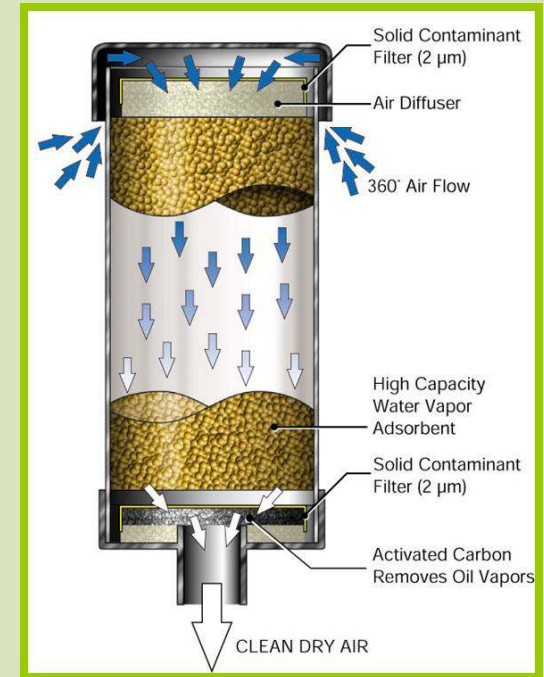
Fuel Storage

- Microbes live at the fuel/water interface
- The hydrocarbons in the fuel provide the food and the water provides the oxygen
- ULSD also has microbial problems
- It's thought that the lack of sulfur in biodiesel and ULSD contribute to microbial growth



Fuel Storage

- Prevent fuel contamination from water and air in storage
- Add biocides to kill microbes
- Use fuel within 6 months
- Keep tanks as full as possible to prevent condensation



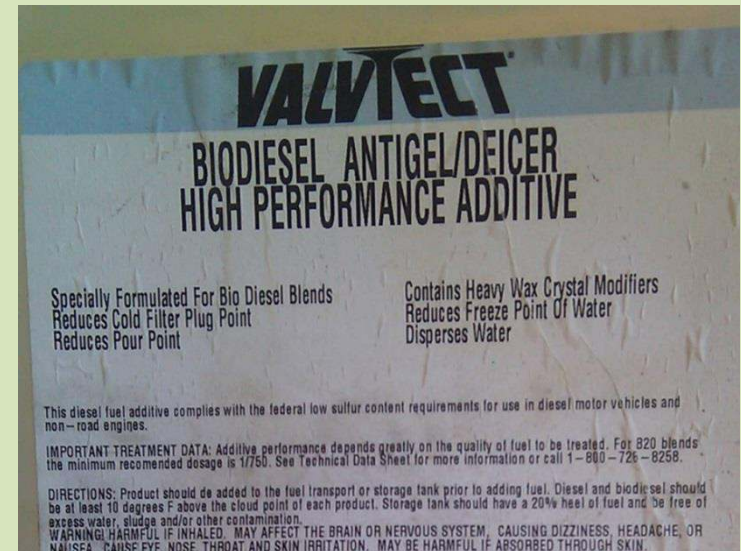
Cold Weather



Could purchase internal heating for pump
Blend before cold weather approaches
Additives should be applied and mixed well

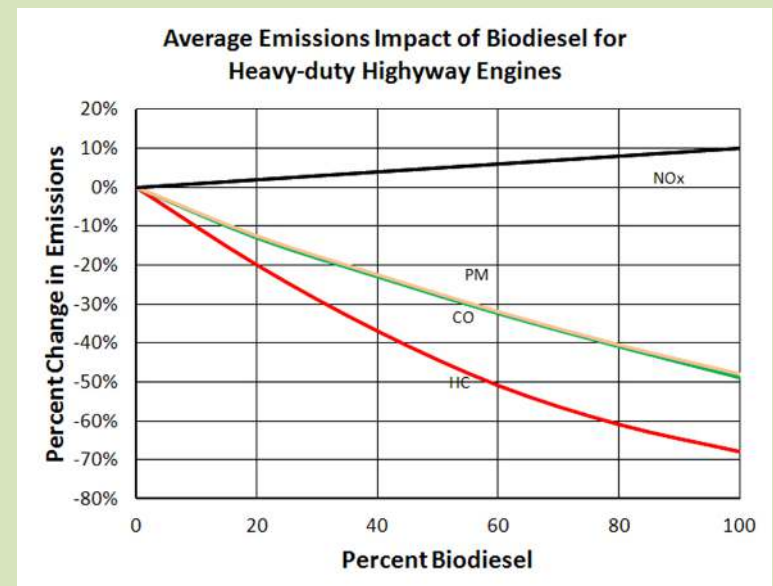
Cold Weather

- Keep water out of fuel storage and vehicle fuel lines
- Endure proper blending from supplier
- Use ASTM spec biodiesel
- Use anti-gel additives
- Chicago Department of Fleet uses Valvtect



Biodiesel Attributes

- Better emissions for drivers and Chicago residents
- Cost savings
 - ❑ 6.25% State Sales tax waived for B11 and above
 - ❑ Most retail biodiesel is B11 or greater because its cheaper than diesel
- Fuel security
- Local economy booster
- Park District Leadership role in renewables



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