# Biodiesel: Fuel Availability

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# Biodiesel: The One and Only

- Transesterfication converts fats and oils into long-chain mono alkyl esters or biodiesel. This is also called fatty acid methyl esters or Fame.
- Methyl esters that do not meet ASTM 6751 are not biodiesel
- Raw vegetable oil or recycled grease is not biodiesel

# ASTM D6751-07a

| Property | ASTM Method | Limits | Units |
|---|---|---|---|
| **Flash Point** | 93 | 130 min. | degree C |
| **Water & Sediment** | 2709 | 0.05 max. | vol.% |
| Carbon Residue (100% sample) | 4530 | 0.05 max. | wt. % |
| Sulfated Ash | 874 | 0.02 max. | wt. % |
| Kin. Viscosity, 40C | 445 | 1.9 - 6.0 | $mm^2$/sec. |
| **Sulfur S500** | 5453 | 0.05 max. | wt. % |
| **S15** | 5453 | 15 max | ppm |
| Cetane | 613 | 47 min. | |
| **Cloud Point** | 2500 | By Customer | degree C |
| Copper Corrosion | 130 | No. 3 max. | |
| **Acid Number*** | 664 | 0.50 max. | mg KOH/g |
| **Free Glycerin** | 6584 | 0.020 | wt. % |
| **Total Glycerin** | 6584 | 0.240 | wt. % |
| Phosphorous | 4951 | 10 max | ppm |
| Distillation, T90 AET | 1160 | 360 max | degree C |
| Combined Na/K | EN 14538 | 5 PPM | ppm |
| Combined Ca/Mg | EN 14538 | 5 PPM | ppm |
| **Oxidation Stability** | EN 14112 | 3 min | hours |
| **Workmanship** | Free of undissolved water, sediment & suspended matter | | |

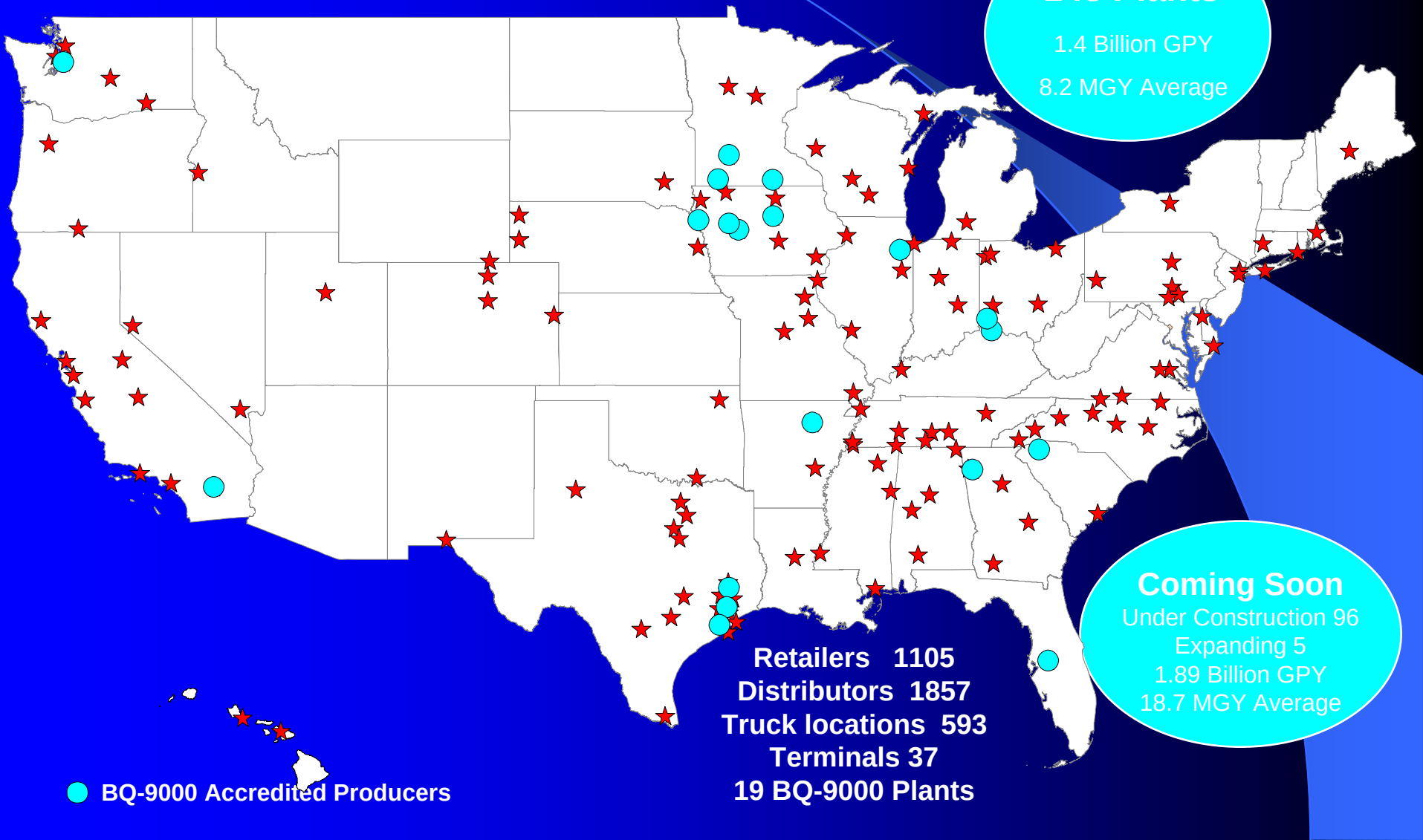
**Bold** = BQ-9000 "Critical Specification Testing

# Finding a supplier

- The National Biodiesel Board website lists nearly 300 biodiesel marketers and 18 accredited BQ9000 certified marketers www.biodiesel.org/buyingbiodiesel

- The address of the contact on the website is not always an indication of where the biodiesel is produced and not an indication of the transportation cost to deliver the product

# Biodiesel Production



# The BQ-9000

***Advantage***

- To **promote** the commercial success and public acceptance of biodiesel
- To help **guarantee** that biodiesel fuel is produced and maintained at ASTM D 6751 levels
- To **provide** a mechanism to track biodiesel in the distribution system, identifying biodiesel which meets ASTM standards.

# The Price of Biodiesel

- Feedstock Cost
- Transesterfication
- Delivery cost
- Less tax credits

# Who Uses Biodiesel

- The Energy Policy Act of 1992 requires certain fleets to purchase alternative fuel vehicles
- The Energy Conservation Reauthorization Act of 1998 allows credit for B20 use
- Every 450 gallons of B100 purchased counts as on credit

# NORA
## Mission Statement
### Pathway To Rebuilding An Industry

*"Change the public's perception of oil heat, from a dirty, inefficient and environmentally damaging fuel source to a clean environmentally friendly versatile, efficient and cost competitive fuel"*

***NORA, Mission Statement***
***October 2001***

# Distillate Fuel Use in the Northeast

in Billions of Gallons (EIA 2002)

| Transportation | | Heating Oil | |
|---|---|---|---|
| NY | 0.956 | NY | 2.114 |
| PA | 1.383 | PA | 1.313 |
| NE | 1.054 | NE | 2.827 |
| NJ | 0.833 | NJ | 0.519 |
| MD/DE | 0.555 | MD/DE | 0.396 |
| Total | 4.781 | Total | 7.169 |

# A “5 in 5” Program

- Establish a new heating oil formulation in the region comprised of 95% low sulfur heating oil and 5% biodiesel in 5 years
- This will require regional cooperation and acceptance by the petroleum industry and the heating oil marketers
- A 5 in 5 program establishes a new market for over 300 million gallons of biodiesel

# Building an Industry

- The existing petroleum infrastructure needs to be part of the growth of a biodiesel industry
- Quality assurance is best served by terminal storage and blending of biodiesel
- As consumers increase their demand for biodiesel volume will be sufficient and sustained