

# The Business & Politics of Biodiesel

## UConn Biodiesel Workshop

May 9, 2006

Gus Kellogg  
Greenleaf Biofuels LLC



# Company overview

- Founded in 2004
- Based in Guilford, CT
- Mission: Greenleaf Biofuels will rapidly develop the demand for, and supply of, biodiesel in the northeastern U.S., thus providing a renewable fuel alternative to Americans who value the preservation of our natural environment and the freedoms provided by our national security.



# Why are you here today?

- Private citizen
- Business representative
- Government representative



# How is biodiesel used?

- Biodiesel is a “drop-in” fuel that can be used in compression-ignition (diesel) engines and oil-fired home heating systems with little or no modifications.
- Biodiesel easily blends with petrodiesel, and is most commonly consumed as a 20/80 mixture (20% biodiesel/80% petrodiesel, aka B20)
- Applications include:
  - On-highway motor vehicles
  - Off-highway agricultural and construction equipment
  - Home heating (bioheat)
  - Marine, rail, power generation



# Who is using biodiesel today?

- All branches of the U.S. military; USPS; DOA; GSA
- State fleets, including Connecticut DOT, New Jersey DOT, Missouri DOT
- Municipal fleets, including the City of Keene, NH; Clark County Public Works Department, Vancouver, WA; City of St. Louis, MO; Hennepin County, MN; Arlington County, VA
- School bus fleets, including Warwick Public Schools, RI; Chicago School Transit, IL; Medford School District, NJ; Deer Valley School District, AZ; St. Johns Public Schools, MI
- Private fleets, including Alcoa, Florida Power & Light Company, Clif Bar, L.L. Bean, New Belgium Brewery, Fetzer Vineyards, Jones Soda Co., Georgia Power
- U.S. National Parks, including Yellowstone and Channel Islands
- Marine vessels, including Western Prince Whale & Wildlife Tours, Seattle, WA



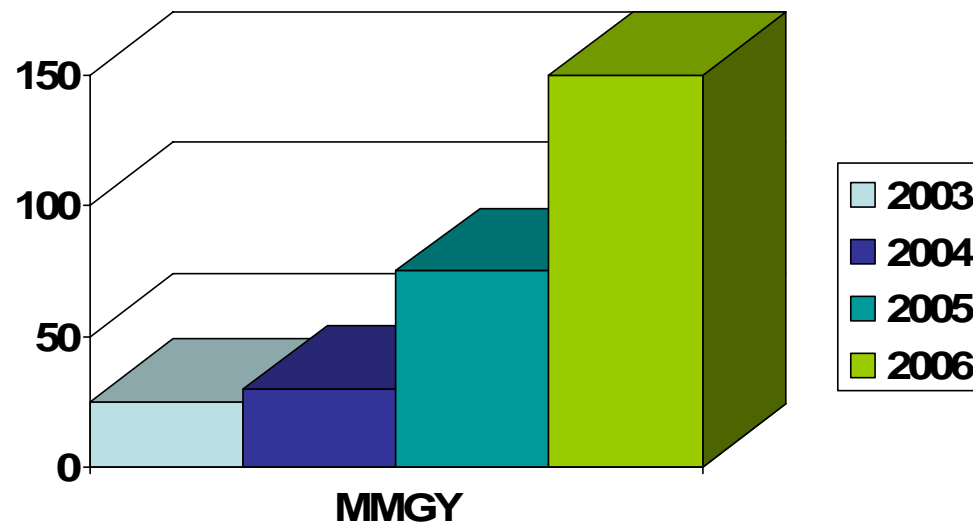
# Available Market: Connecticut

- Biodiesel is a direct substitute for middle distillate fuels
- 3.1 billion gallons of petroleum is consumed in CT each year
- 1 billion gallons of that is distillate fuel
  - 580 million gallons of home heating oil
  - 240 million gallons of on-highway diesel
  - 180 million gallons of off-highway diesel



# U.S. Biodiesel Production

- 47 biodiesel plants = 400MMGY; 7 under expansion = 53MMGY; 27 under construction = 320MMGY capacity
- Massive build-out of capacity in '06 and '07: over 60 proposed plants in various stages



# Energy Security

- Surging national, regional and local interest in energy independence
  - 1.6 billion gallons of CT's 3.1 billion gallon annual petroleum habit is imported
  - 1 billion gallons of these imports originate outside the Western hemisphere
  - 320 million gallons originate from the Persian Gulf region (\$530M)



# Positive energy balance

- Independent studies show that for every one unit of fossil energy put into the production of biodiesel, the yield is 3.2 units of energy out. This is the highest energy balance of any transportation fuel today.
- Ethanol: 1.2
- Diesel: .8



# Federal Politics

- American Soy Association founded the National Biodiesel Board
  - As demand for soy meal surged, producers needed to find new markets for soy oil
- EPA Act 2005
  - extension of \$1/gallon biodiesel federal excise tax refund
  - RFS (renewable fuels standard); AFV credits
- ASTM spec; EPA Tier I & II; CCC



# State Politics

- RGGI: reduction of greenhouse gas emissions – CO<sub>2</sub>
- DEP: public health issues related to air pollution, fuel spills
- State incentives needed!
  - Excise tax exemption
  - RFS (MN, WA)
  - In-state production



# Municipal Politics

- Air quality in non-attainment areas
- Environmental stewardship
- School curriculum
- Job creation




# The Politics of One

- Personal Choices = Change
  - Reduce consumption; increase use of domestic, even local, alternatives
- What is your carbon footprint?

## YOUR CARBON DIET

**Home energy:** 9,000 kWh and 900 gal of oil/yr; 32,000 lbs. of CO<sub>2</sub>



**Instructions**  
Click on each item to learn about its energy consumption and how to save on its energy use. Once you click on an item, hit the "optimize" button to increase its efficiency. Watch the total home energy use above decrease as you optimize. The total energy consumed by the house is expressed in kilowatt hours per year, gallons of oil per year,

## Carbon footprint calculator

### Carbon Calculator

The carbon calculator provides a simple guide to your household carbon footprint based upon key features of your home, your personal energy use profile, your use of green technologies and your transport profile. A household carbon footprint is the quantity of CO<sub>2</sub> emitted to the atmosphere as a result of household energy use, transportation and waste disposal in one year.

This version of the carbon calculator is based on evidence from household energy studies in the United Kingdom and USA. It enables you to explore how changes to your home, the way you use energy and your transport choices can affect CO<sub>2</sub> emissions. Because the calculator does not ask you for specific data on how much fuel or electricity you consume, it is easy to use but is only intended as an approximate guide.

To use the calculator, complete the questions within each section. As you select options within the calculator, the resulting CO<sub>2</sub> emissions are displayed above.

Continue ▶



# Closing comment

- Using biodiesel will significantly decrease emissions of greenhouse gases that contribute to global climate change and particulate matter that contribute to lung disease. Furthermore, using biodiesel supports our domestic and local economy, reduces our dependence on foreign oil and enhances our national security.



“The use of vegetable oils for engine fuels may seem insignificant today, but such oils may become, in the course of time, as important as petroleum and the coal-tar products of the present time.... Motive power can still be produced from the heat of the sun , always available, even when the natural stores of solid and liquid fuels are completely exhausted.”

*- Rudolph Diesel, April 13, 1912 in St. Louis, MO*

