Biodiesel Benefits

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Benefits of Biodiesel

- **Biodiesel has multiple benefits**
  - Increased Safety and Energy Security
  - Environmental Benefits

Providing Safety Benefits

- Low toxicity, so less damage than petroleum diesel if spilled or otherwise released to the environment
  - Biodegrades about four times faster than petroleum diesel
- Less combustible
  - Flashpoint for biodiesel is higher than 200°F, compared with about 125°F for petroleum diesel
- Safer to handle, store, and transport

http://www.biodiesel.org/pdf_files/fuelfactsheets/Environment_Safety.pdf

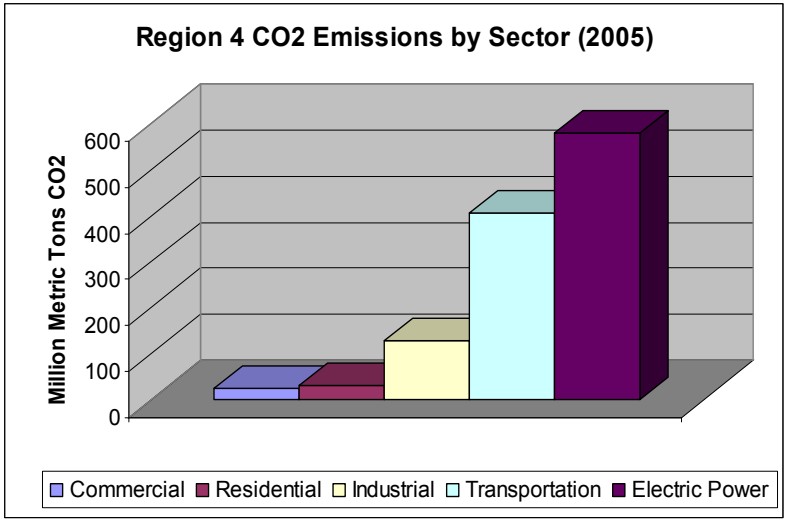
Increasing Energy Security

- **We import more than 60% of our petroleum**
  - Two-thirds used to fuel vehicles (gasoline and diesel)
- **Demand for petroleum imports is increasing**
- **With much of the worldwide petroleum reserves located in politically volatile countries, the U.S is vulnerable to supply disruptions**
- **As an alternative to diesel, it can help reduce U.S. dependence on foreign oil**

Environmental Benefits

- **Greenhouse gas (GHG) estimated emission reductions; for example**
  - B100 produced from soybean oil estimated to reduce lifecycle CO2 emissions by 78% compared to petroleum diesel
  - Effect is linear with blending level -- so a B5 blend reduces life cycle CO2 emissions by 3.8%

- **The proposed RFS2 standard requires 50% GHG lifecycle reduction over 2005 petroleum baseline**



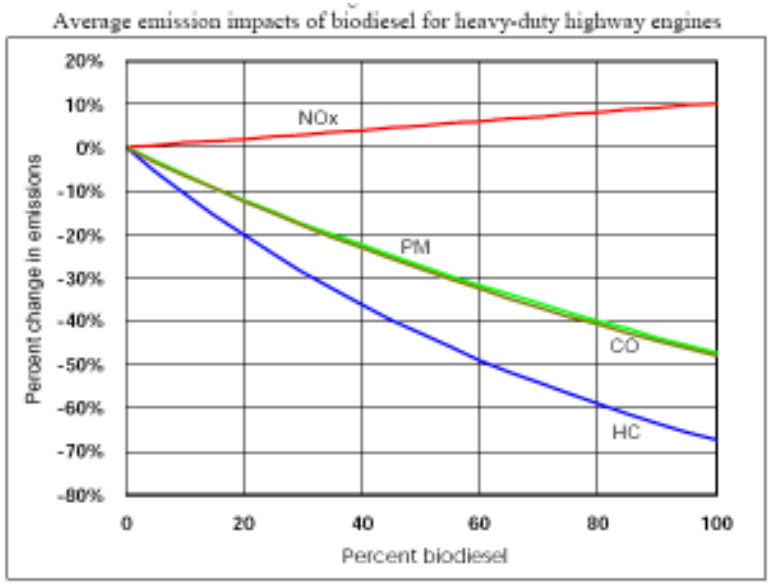
Lifecycle GHG emissions include production and transport of the feedstock; land use change; production, distribution, and blending of the renewable fuel; and end use of the renewable fuel.

http://www.epa.gov/smartway/growandgo/documents/factsheet-biodiesel.htm
http://www.epa.gov/OMS/renewablefuels/
http://www.nrel.gov/vehiclesandfuels/npbf/pdfs/37136.pdf

Environmental Benefits

- **Other Air Pollutants -- in general, reduces**
  - Particulate matter
  - Carbon monoxide
  - Hydrocarbons

Soybean Oil – B20



- **NOx increases slightly**

- **Benefits may vary by biodiesel type, engine type, percent biodiesel, and source petroleum**

A Comprehensive Analysis of Biodiesel Impacts on Exhaust Emissions; Draft Technical Report
http://www.epa.gov/OMS/models/analysis/biodsl/p02001.pdf

Environmental Benefits

- EPA's Report to Congress on combined sewer overflows (CSOs) and sanitary sewer overflows (SSOs) identified that fats/oils/grease (FOG) from restaurants, homes, and industrial discharges are the most common cause (47%) of reported blockages

- Controlling FOG discharges will help treatment plants prevent blockages

- Helps avoid public health and water quality problems

http://www.epa.gov/npdes/pubs/pretreatment_foodservice_fs.pdf

Questions?

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