

SCAQMD
Biodiesel Forum and Technology
Roundtable

Biodiesel Regulatory
Perspective

November 7, 2006

Need to Reduce our Dependence on Fossil Fuels

- California fuel consumption in 2005
 - Diesel: 4 billion gallons
 - Gasoline: 16 billion gallons

Need for Emissions Reductions

- Mobile sources are a major source of greenhouse gas emissions and air pollution. Mobile sources contribute to:
 - 58% of the greenhouse gases emitted in California
 - 50% reactive organic gases
 - Over 80% of nitrogen oxides
 - Over 3% of particulate matter, however diesel particulate matter contributes to 70% ambient air toxics risk

Alternative Fuels

- Can reduce greenhouse gas emissions
- Can reduce air pollution
- Reduce dependence on fossil fuels
- Some alternative fuels are renewable
- Can be derived from waste products

Bioenergy Action Plan

- Governor's Executive Order S-06-06 establishes targets for the use and production of biofuels
- Established a bioenergy working group to develop an integrated and comprehensive state policy
- Plan identifies key action items for state agencies

Bioenergy Action Plan (cont)

- ARB will:
 - Consider adoption of fuels specifications for biodiesel and biodiesel blends
 - Evaluate greenhouse gas reduction benefits
 - Conduct a multimedia evaluation

AB 1007

- Requires the development of recommendations for a state plan to increase the use of alternative transportation fuels
- Assigns lead responsibility for developing the recommendations to the California Energy Commission in consultation with the Air Resources Board
- Considers the full benefits and impacts of alternative transportation fuels
- Requires the plan to be developed and adopted no later than June 30, 2007.

Biodiesel Assessment Under AB 1007

- Biodiesel considered a renewable alternative transportation fuel
- Supports energy diversity
- Determine biodiesel market feasibility
- Assess air quality impacts
- Full life cycle analysis

Governor's Executive Order (S-03-05)

- Reduces greenhouse gas (GHG) emissions
- Aggressive goals
 - 2010: reduce GHG to 2000 levels
 - 2020: reduce GHG by 25 percent
 - 2050: reduce CHG to 80 percent below 1990 levels

Climate Action Team

- Climate Action Team created to meet the directives of governor's EO S-3-05
- Published a report in 2006 that:
 - Recommends the development of an aggressive alternative fuels program
 - Proposes a strategy of using a 2-4 percent biodiesel fuel that will reduce greenhouse gases by .8 MMT/year

AB32 California Global Warming Solutions Act of 2006

- Comprehensive program of regulatory and market mechanisms to achieve real, quantifiable, cost-effective reductions of greenhouse gases
- Greenhouse gas emission reduction goals
- Air Resources Board (ARB) responsible for monitoring and reducing GHG emissions.

Biodiesel Greenhouse Gas Benefits

- Reduces greenhouse gas emissions by about 70-80%

Other Biodiesel Benefits

- Reduces PM and toxic emissions
- Emissions benefits

	B20	B100
HC	-21%	-67%
PM	-10%	-48%
CO	-11%	-48%
NOx	+2%	+10%

- Biodiesel can be used with no engine modification

Biodiesel Production Capacity in California

- Current capacity
 - 16 million gallons/year
 - 0.5% California diesel consumption
- Limited feedstock supply

Can Biodiesel be Used in CA?

Yes if:

- Meets ARB diesel regulations for sulfur and aromatics
- Meets Division of Measurement Standards regulations

Division of Measurement Standards (DMS)

- DMS regulates the retail sale of commercial motor vehicle fuels
- DMS adopted biodiesel regulations
 - Fuel specifications (ASTM D6751 & ASTM D975)
 - Advertising
 - Labeling

Draft ARB Biodiesel Advisory

- Clarifies what is allowable under current ARB regulations
- Clarifies biodiesel use for verified PM reduction technologies
- Consistent with SB975

What is needed for ARB to Develop Biodiesel Fuel Specifications?

- Suitable fuel specifications that control emissions and protect engines
- Biodiesel Emissions Study
 - Conduct basic research to determine the impact of biodiesel use in California
- Multimedia Evaluation

ASTM D6751

- Defines biodiesel as a fatty acid ester
- Key specifications limit levels of alcohols, glycerin, free fatty acids, and catalysts
- Need to develop additional specification for fuel blends

Biodiesel Emissions Study

- Compare the emissions impacts from the use of biodiesel to CARB 15 ppm sulfur diesel fuel
 - Range of feedstocks
- Evaluate potential NO_x impact
 - Evaluate cause of NO_x increase
 - Evaluate ways to limit NO_x increase

Multimedia Evaluation

- Health and Safety Code Section 43830.8 requires a multimedia evaluation for any ARB regulation that establishes a specification for a motor vehicle fuel
- External scientific peer review
- Must be approved by the California Environmental Policy Council

Biodiesel Workgroup

- Established in 2004 to assist the ARB in determining the need to develop biodiesel specifications
- ARB staff will coordinate with the workgroup to:
 - Develop specifications
 - Conduct biodiesel emissions study
 - Conduct multimedia evaluation

Next Steps

- Continue to work with ASTM, CEC, and industry to resolve remaining issues
- Address air quality impacts-biodiesel emissions research
- Multimedia evaluation
- Start work to develop regulations for low volume blends of biodiesel as a greenhouse emission reduction strategy