California Air Resources Board
Alternative Diesel Fuels
Symposium

Presentation of the
Engine Manufacturers Association

Sacramento, California
August 20, 2003
EMA Objectives

- Achieve air quality improvements through cost-effective, technologically feasible measures
- Promote/maintain global alignment of standards, programs, and procedures: design once, certify once, sell worldwide
- Maintain customer satisfaction and product acceptability
Rationale For Biodiesel Fuels

- Reduce energy dependency on petroleum-based fuels
- Potential to provide emission reductions
  - Direct emission advantages for current engines
  - Retrofit of older technology engines
- Provides lubricity improvement
- Boost domestic industries, (e.g. farming, fuel production facilities)
Biodiesel Feedstocks

- Vegetable Oils
  - Soybean
  - Rape Seed (canola)
  - Sunflower
  - Peanut

- Animal Fats
  - Beef tallow
  - Pork lard

- Recycled Products
  - Cooking oil
  - Grease
Composition

“Neat” Biodiesel or B100
Accepted industry-wide standards evolving
- ASTM D6751
- DIN 51606
- EN 14214

Biodiesel Blends
- Up to B5: 5% blend of B100 with diesel fuel
  - Approved for engine use by EMA and fuel injection equipment manufacturers if B100 meets accepted industry standards
  - Included in World Wide Fuel Charter
- B20: 20% blend of B100 with diesel fuel
  - Approved for EPACT biodiesel fuel credits
  - ASTM specification under development
Benefits of Biodiesel Use

- Good blending stock for diesel fuel
- Good lubricity
- Similar energy content to diesel fuel
- Low sulfur
- High cetane
- Lower PM and HC emissions
- Renewable feedstock sources
Concerns with Biodiesel Use

- Increased NOx emissions at higher blend levels
- Poor oxidation stability
- Potential performance problems
  - Filter plugging (gums, microbial growth, solvent properties)
  - Crankcase oil dilution
  - Elastomer compatibility
- Problematic use in cold weather conditions
- Manufacturers’ commercial warranties
- Long-term use implications unknown
Public Policy Considerations

- Energy independence
- Incentives and subsidies acceptable
- Legislative and regulatory mandates not appropriate
Status of Biodiesel

- Several large fleets using B20 to identify long-term effects
- Annual use has increased to approximately 25 million gallons
- Several states considering or have incentives or mandates
EMA Position Statement

For a complete version of EMA’s position statement on the use of Biodiesel fuel and Biodiesel fuel blends please see:

Conclusions

- Engines are designed to operate on specified fuels
- Significant effort is required to conduct performance/emission testing on multiple feedstocks and concentrations
- Incentives and subsidies are acceptable but mandates are not appropriate
- EMA is committed to working with other stakeholders in industry and government to develop a common understanding of the role of biodiesel fuels in California’s overall air quality strategy