Alternative Diesel Fuel Regulation Workshop

October 20, 2014

Industrial Strategies Division

Agenda

- Background
- Data Analysis
- Proposal
- Next Steps

Background

- Previous Proposal:
  - Use effective blend level and safe harbor proposals to control biodiesel NOx emissions
  - Separated State into two regions with different reporting and requirements in each
- Previous proposal dependent on prior conclusions from studies that B5 NOx impacts were not statistically significant

Data Analysis

- New data on B5/B10 animal and soy feedstocks was presented in July
- Statistical analysis concludes NOx increases at B5 and B10 for soy feedstocks
- No statistically significant increase at B5 or B10 for animal feedstocks

Data Analysis

Emissions Impacts of Biodiesel Blends Compared to CARB Diesel

Blend Level	Saturation Level	NOx	PM
B5	Low	1%	-6%
	High	-1%*	
B10	Low	2%	-10%
	High	0*	
B20	Low	4%	-18%

*Not statistically significant

Note: Impacts not associated with NTDEs, light duty, and medium duty vehicles

Data Analysis Presentation

SRIA Proposal

- SB 617 requires a Standardized Regulatory Impact Assessment (SRIA) for major regulations
  - Preliminary proposal posted for SRIA alternative solicitation
  - SRIA proposal was a simple initial concept
- SRIA proposal:
  - Mitigation per gallon above B1 for soy and B5 for animal
  - Included same mitigation options as previous proposals: RD blending, additives, certification, and NTDE and LD exemptions

Data Analysis

- Additional analysis conducted to refine initial proposal and consider impact of offsetting factors
- Staff's analysis of NTDE penetration rates, combined with increased volumes of RD leads to a significance threshold of B5 for soy
- Significance threshold is the blend level below which it is expected there are no significant increases in environmental NOx

Proposal – Goals

- Result in local and area-wide air quality benefits, compared to existing fuel use
- Preserve anticipated benefits from existing fuels policies
- Support progress under the State Implementation Plan (SIP)
- Promote low GHG fuels
- Provide a practical approach to NOx control while sustaining the current benefits of the biodiesel industry
- Result in a simplified and enforceable approach
- Work synergistically with mobile source control measures

Proposal – Safe Harbor

- B5 for Low Saturation Biodiesel (e.g. Soy oil, canola based biodiesel CN<56)
- B10 for High Saturation Biodiesel (e.g. animal tallow, chicken fat based biodiesel CN≥56)
- Require mitigation per gallon if above safe harbor
- Safe Harbor level is based on significance threshold

Proposal – NTDEs

- NTDEs reduce need for biodiesel mitigation; levels of NTDEs increasing over time
- NTDE penetration expected to be above 90 percent by 2023, negating need for NOx mitigation

Proposal – Renewable Diesel

- RD NOx decreases can offset BD NOx
- RD volumes expected to increase, providing greater NOx decreases

- Combination of NTDEs and use of renewable diesel in State results in significance threshold of B5 for low saturation biodiesel
- Use of RD in significance threshold development precludes RD as mitigation option above safe harbor

Proposal – Low Ozone Season

- Considering B10 safe harbor level regardless of feedstock in Low Ozone Season (November to April)
- Low Ozone Season: increased NOx unlikely to result in Ozone episodes
- Preliminary analysis suggests potential for secondary PM formation from increased NOx likely to be overwhelmed by direct PM decrease from biodiesel
- Staff continues to investigate potential secondary PM formation

Proposal - Mitigation

- Mitigation required per gallon if above safe harbor
  - For example, a gallon of fuel containing 20 percent biodiesel (B20) must be fully mitigated
  - Additive strategy (di-tert butyl peroxide, DTBP)
  - RD is not a mitigation option - included in the significance threshold analysis
- Other options may be developed through certification procedure

Proposal – Exemptions

- NOx emissions do not change based on biodiesel blend level in NTDEs, at least up to B20
- Due to recent studies on NTDE emissions on higher blends of biodiesel, propose exempting use of B20 or less in NTDEs
- Staff will continue to monitor emissions impacts of NTDEs
- Studies suggest no impacts from biodiesel on NOx in Light and Medium Duty vehicles (less than GVWR 14,500), staff considering exemption for these vehicles

Proposal – Feedstocks

- Transition from qualitative description of feedstocks (e.g. animal, soy) to separation based on performance value, cetane number or index
- Low saturation feedstocks, non-additized cetane < 56, includes soy, canola, corn oil
- High saturation feedstocks, non-additized cetane ≥ 56, includes animal fats, tallow

Proposal – Timeline

- January 1, 2016 - Establish reporting requirements
- January 1, 2018 - Imposes per gallon NOx mitigation for blends above safe harbor
- Two-year lead-in necessary for industry to invest in necessary infrastructure, certify new mitigation options, or change business practices to focus on exempt fleets

Proposal – Air Quality

- Proposal results in no additional emissions impacts from current usage and impacts decline with time
- Not expected to have impact on federal 8-hr ozone standard attainment in 2023 due to nearly universal use of NTDEs by that time
- Biodiesel reduces direct PM, VOCs, GHGs
- Benefits from PM and GHG reductions continue post 2022 timeframe

Next Steps

- Comments due October 27th
- Draft regulatory language early November
- Regulatory language workshop mid to late November
- Staff Report in December
- Board Hearing February 19 or 20

Discussion

- Questions?

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Alternative Diesel Fuel Website:
http://www.arb.ca.gov/fuels/diesel/altdiesel/biodiesel.htm