Alternative Diesel Fuels Rulemaking Meeting

Second Public Workshop
June 13, 2013

California Air Resources Board
Stationary Source Division
Alternative Fuels Branch

Meeting Agenda

- Recap of April 23 Public Workshop
- Staff Evaluation- Key Considerations
- Overview of Updated Regulatory Concept
- Rulemaking Schedule
- Next Steps
- Q&A
- Contacts

Recap of April 23rd Workshop

- *White Paper* on mitigation options
- Updates by CDFA-DMS, CEC, & SWRCB
- Stakeholder comments

Stakeholder Comments

- NBB/CBA:
  - Supports B5 proposal
  - 2010 diesel fleet turnover
  - No ambient ozone impact up to B5
  - Recommend continued research and monitoring
- EMA:
  - Supports B5 provisions
  - Proposes cap of B20 and requirement on ADFs to be compatible with engines

Stakeholder Comments

- Chemoil/Chevron/Others:
  - Recommend that biodiesel additives be covered by multimedia assessment
  - Renewable diesel in USTs

Staff Evaluation- Key Considerations

- ADFs have many potential benefits to LCFS, RFS, criteria pollutants, toxics
- Emerging ADFs need pathway to commercialization
- Studies indicate potential NOx increase above B5, esp. in pre-2010 engines
- Current biodiesel use is at ~B0.5
- Mitigation affects biodiesel competitiveness and availability
- Consider carefully managing ADF introduction as needed, e.g., enhanced monitoring, market and fleet analysis

Benefits of Biodiesel as ADF

- Capable of providing carbon intensity reductions
- Multimedia evaluation shows multiple benefits to biodiesel
- Biodiesel reduces most criteria pollutants compared to petroleum diesel, including PM, HC, CO
- Biodiesel reduces most toxic emissions compared to petroleum diesel

Changing Fleet

- On-road and Off-road Heavy duty fleet transitioning to exhaust after-treatment for NOx; primarily SCR
- SCR equipped trucks shown to have no NOx emissions difference depending on fuel
- Biodiesel expected to be emissions equivalent to CARB diesel in 2010 trucks and tier 4 off-road equipment

Offsetting Fuels Entering CA

- Diesel substitutes such as renewable diesel and other high cetane, low aromatics fuels can reduce NOx emissions
- As sales of such fuels increase, this offsetting effect can impact the “if/when,” “where,” and “how much” mitigation of NOx (or other pollutant of concern) is needed for an ADF

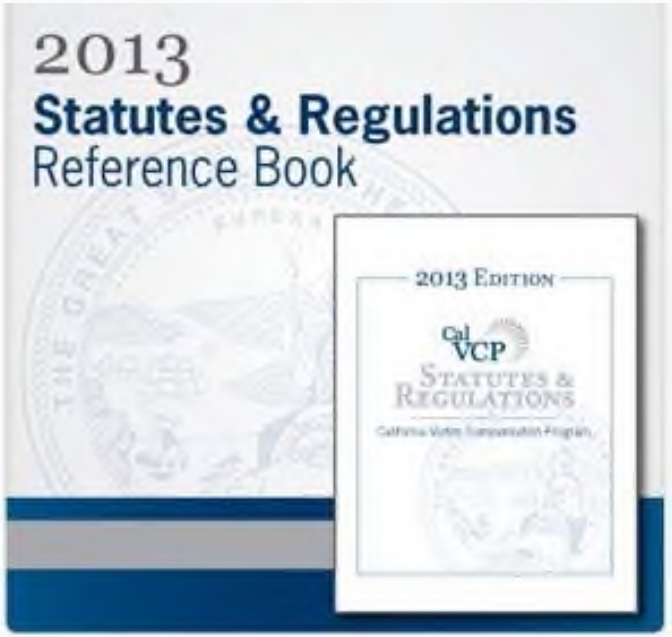
Ground Level Ozone Impacts

- Overall ozone levels dependent on complex interaction of NOx, ROG, other factors
- NBB modeling suggests minimal impact on ozone even assuming high levels of biodiesel during a high ozone event in 1997 in South Coast
- As fleet transitions to SCR based engines, impacts to ground level ozone are reduced
- Splash blended renewable diesel offsets NOx emissions from biodiesel use

Emissions Monitoring

- CA goals include:
  - Maintaining air quality
  - Decreasing greenhouse gas
  - Reducing petroleum use
- For ADFs these goals would be best met by monitoring emissions and market conditions over time as new ADF fuels are introduced, and mitigating to below significance level only if necessary

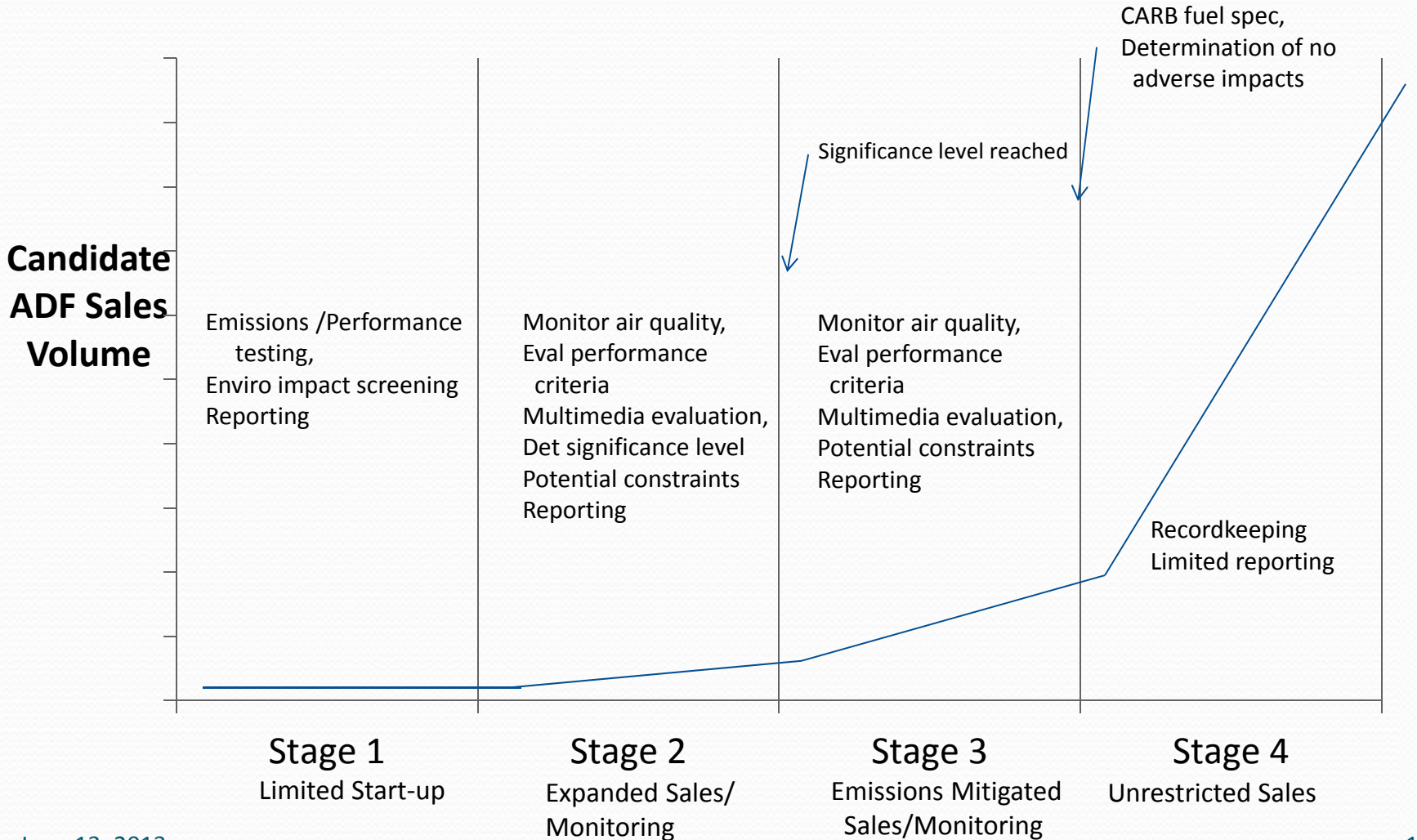
Overview of Updated Regulatory Concept



New Section of Alternative Fuels

- 13 CCR section 2293
- Four-stage phase in of new ADFs into CA commerce
- Includes monitoring of use, emissions, fleet turnover, market factors
- Establish performance criteria for triggering mitigation measures as needed
- Yearly review of emissions and performance criteria to determine if mitigation to below significance level is necessary

Path to Commercialization



Stage 1

- Uncharacterized ADF
- Requires memorandum of exemption (MOE) governing limited fleet use for testing and characterization
- MOE includes engine emissions studies, identification of performance issues, environmental impacts screening
- Data help inform development of fuel specs (similar to DMS developmental fuel variance)

Stage 2

- Additional, more in-depth emissions testing than Stage 1
- Limited use without MOE
- Volume may be limited by potential impacts on NOx and other pollutants, if applicable
- Multimedia evaluation required
- Any specified volume limit based on identified performance criteria tied to a significance level of one or more air pollutant of concern
- Enhanced monitoring, annual evaluations

Stages 3 & 4

- ADF either goes to Stage 3 or 4
- Stage 3
  - If performance criteria are met and significance level is reached, mitigation measures triggered and applied to extent needed
  - Mitigation measures include those already discussed (additives, cleaner CARB/neat ADF, certified blends) and appropriate volume caps, if necessary
- Stage 4
  - If EO determines no mitigation required, implement final fuel specs with no volume cap

Rulemaking Schedule

Major 2013 Milestones

- Develop Staff Report/Proposed Regulation Order- July 15
- Draft Staff Report to Public- August 1
- *Multimedia Report Peer Review- August 10*
- Public Workshop- mid August
- Board Hearing- September 26
- *CEPC Hearing- late November*

Staff Report- Table of Contents

- Executive Summary
- Introduction
- Current Regulations
- Technological Assessment
- Summary of Proposed Regulation
- Economic Impacts
- Environmental Impacts
- Analysis of Alternatives
- Appendices

Economic Impacts

- Economic assessment evaluation
- Range of costs based on assumptions
- Minimum ADF cost for additional testing, reporting and recordkeeping
- Additional costs from mitigation and any infrastructure improvements

Environmental Impacts

- Multimedia assessments to inform CEQA analysis
- Multimedia findings on biodiesel to be reflected in staff's proposed rule, if needed
- Currently anticipate finding of no adverse environmental impacts for renewable diesel compared to CARB diesel
- The proposed regulation will address potential air quality impacts of future ADFs

Next Steps

- Solicit comments from stakeholders
- Consult with affected parties as needed during regulatory text development
- Consider timing of next workshop

Questions and Answers

Rulemaking Contacts

Alternative Diesel Fuel Contacts:

- Alexander "Lex" Mitchell
  Air Pollution Specialist
  (916) 327-1513
  amitchel@arb.ca.gov

- Jim Aguila, Manager
  Substance Evaluation Section
  (916) 322-8283
  jaguila@arb.ca.gov

Diesel Fuel Regulation Contacts:

- Jim Guthrie
  Air Resources Engineer
  (916) 327-1508
  jguthrie@arb.ca.gov

- Ms. Manisha Singh, Manager
  Fuels Section
  (916) 327-1501
  mansingh@arb.ca.gov

http://www.arb.ca.gov/fuels/diesel/altdiesel/biodiesel.htm
http://www.arb.ca.gov/fuels/diesel/diesel.htm