

California Environmental Protection Agency



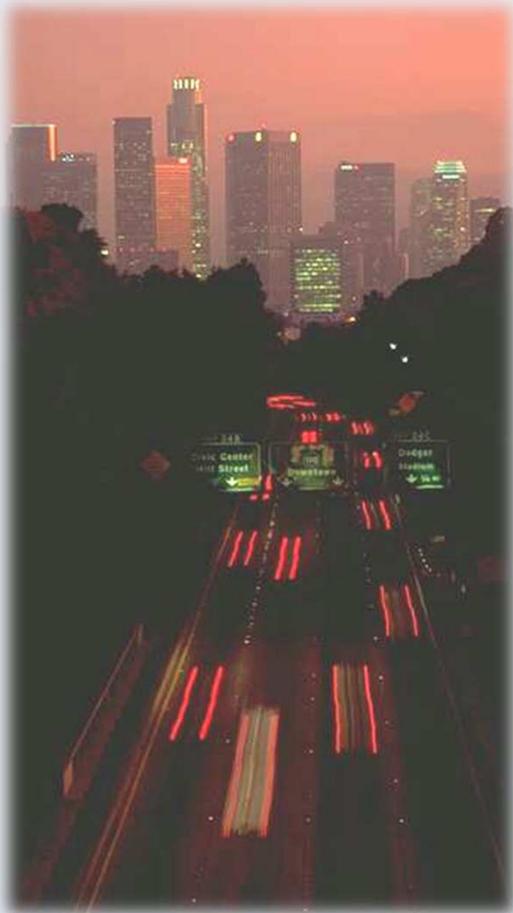
Air Resources Board

***Proposed 2011 Amendments
to Phase 3 California
Reformulated Gasoline
Regulations***



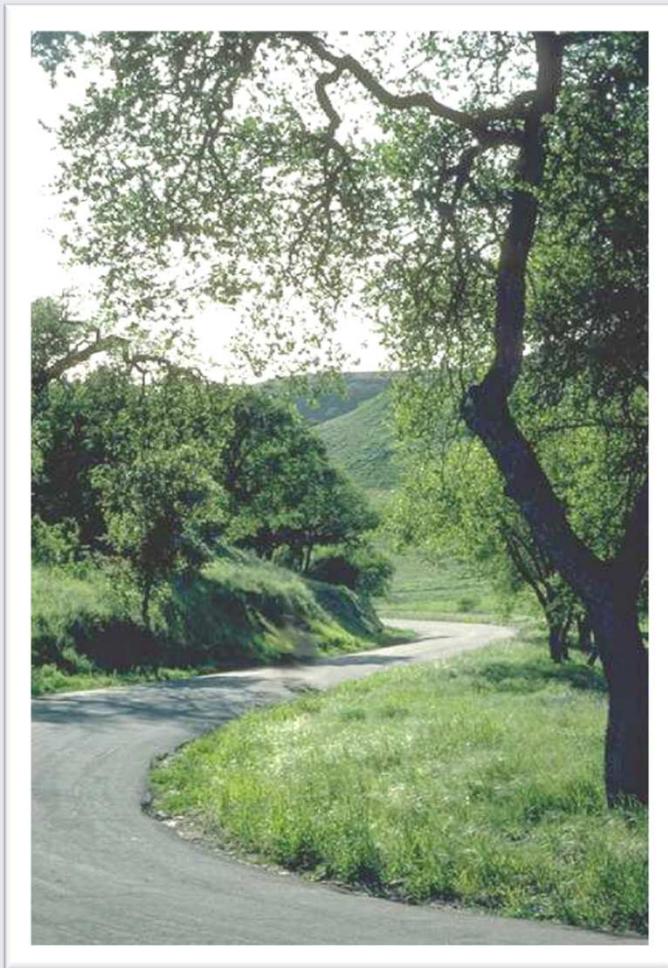
October 21, 2011

Overview



- History of CaRFG regulations
- Role of Predictive Model
- Rationale for Changes to CaRFG3
- Proposed Amendments
- Proposed Modifications
- Recommendation

California Phase 1 Reformulated Gasoline Program



- Approved in 1990
- Implemented in 1992
- Required lower RVP limit
- Required deposit control additives
- Eliminated lead
- Benefits: 210 tpd or 10% VOC reductions

California Phase 2 Reformulated Gasoline (CaRFG2) Program

- Approved in 1991
- Built on CaRFG1
- Implemented 1996



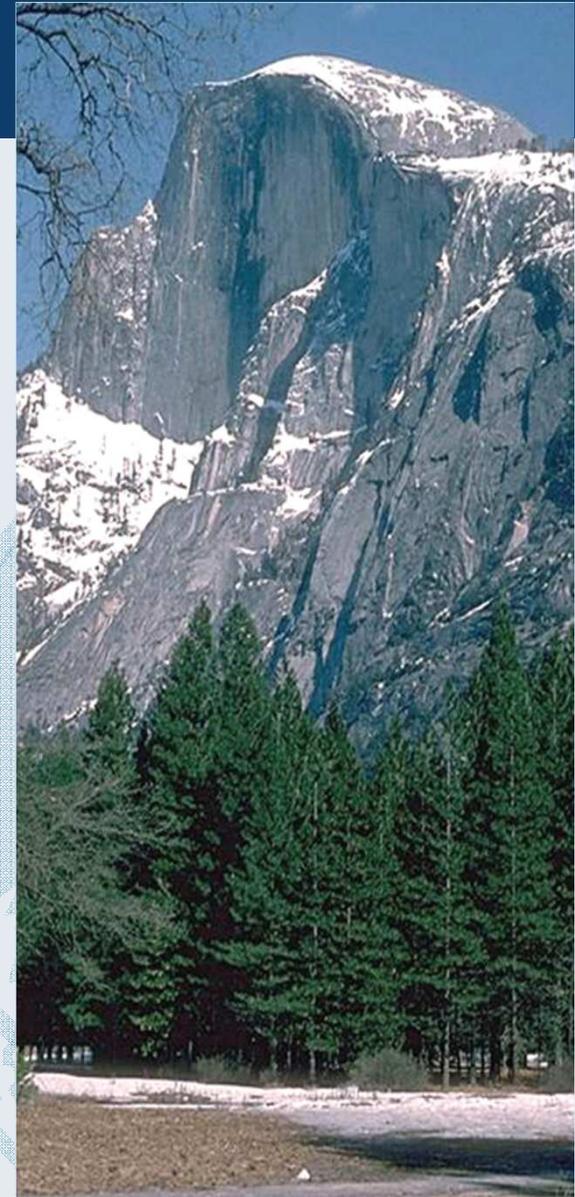
- Established Limits on:

Sulfur
T50
T90
Olefins

RVP (Summertime)
Benzene
Aromatic Hydrocarbons
Oxygen Content

Benefits of CaRFG2

- Reduced hydrocarbon emissions by 400 tons per day
- Reduced NOx emissions by 200 tons per day
- Reduced CO emissions by 1300 tons per day



Tools that Provide Flexibility Predictive Model

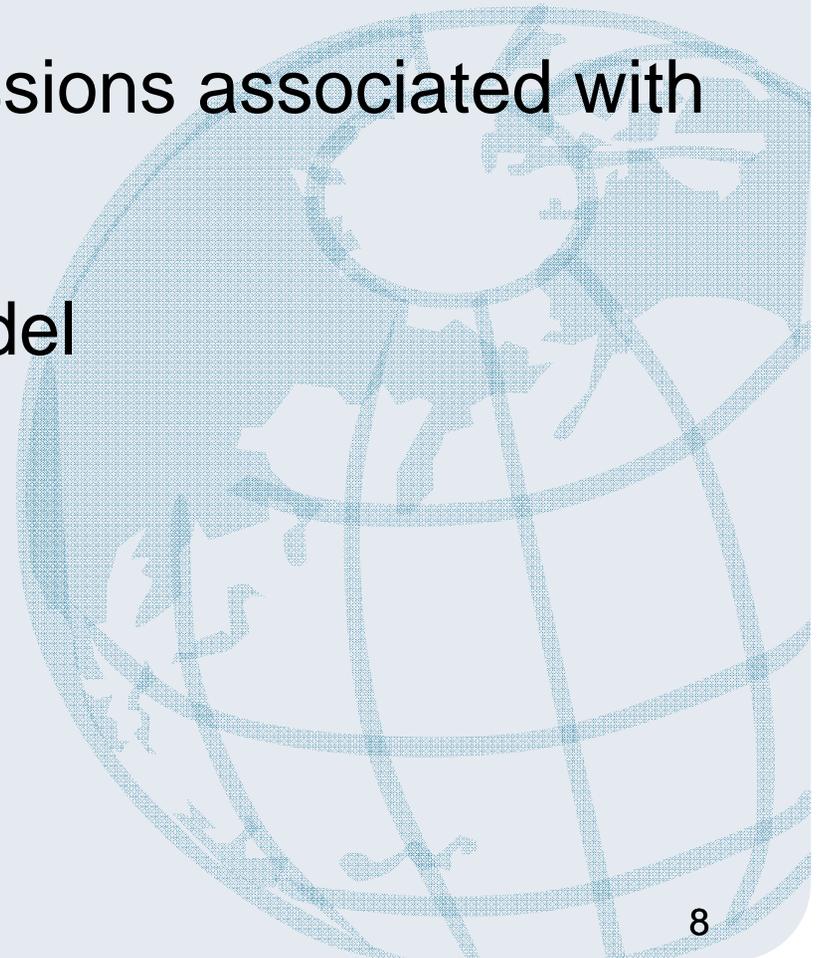
- Predictive model allows refiners to use alternative formulations of CaRFG
- Use model to demonstrate alternative formulation will get required reductions
- Used for virtually all California gasoline
- Producers must meet emission standards for NO_x, ozone-forming potential, and air toxics
- Model is periodically updated

California Phase 3 Reformulated Gasoline (CaRFG3) Program

- Approved in 1999, became effective in 2003
- Banned MTBE in California gasoline
- Improves upon CaRFG2
- Increased flexibility to allow for transition from MTBE to Ethanol
- Updated Predictive Model with latest emissions data

2007 CaRFG3 Amendments

- Regulations last amended June 2007
- Required mitigation of emissions associated with permeation
- Updated the Predictive Model



Proposed Amendments

- Correct Predictive Model coefficients in regulation
- Allow RVP-controlled (“summer”) gasoline to be produced year round
- Gasoline with an RVP of 7.2 psi or less to be considered RVP-controlled gasoline and would have to meet all applicable fuel standards
- Repeal outdated provisions in the regulation

Proposed Amendments (continued)

- Notify ARB to allow sufficient time for sampling and testing of test-certified alternative formulation
- Specify materials allowed to be blended with CARBOB
- Amend definition of Racing Vehicle to Align with U.S. EPA
- Make miscellaneous changes: correct formatting issues, spelling errors, etc.

Impacts

- Economic Impacts – None expected
- Environmental Impacts – None expected



Proposed Modifications (15-Day)

- Add language to 2266.5(f)(1) to address materials incidentally mixed with CARBOB as a result of the normal operations of a business using pipelines, storage tanks, and cargo tank trucks.

Recommendation

- Approve the proposal with staff's proposed modifications

