



BAY AREA
AIR QUALITY
MANAGEMENT
DISTRICT

Lehigh Southwest Cement Compliance Status

Regulation 9, Rule 13: Nitrogen Oxides, Particulate Matter, and Toxic Air Contaminates from Portland Cement Manufacturing

Jeff McKay
DAPCO

Stationary Source Committee Meeting
February 24, 2014



Outline

- Background
- Facility Description
- Issues Prior to Rule 9-13
- Rule 9-13 Requirements
- Compliance Status
- Next steps

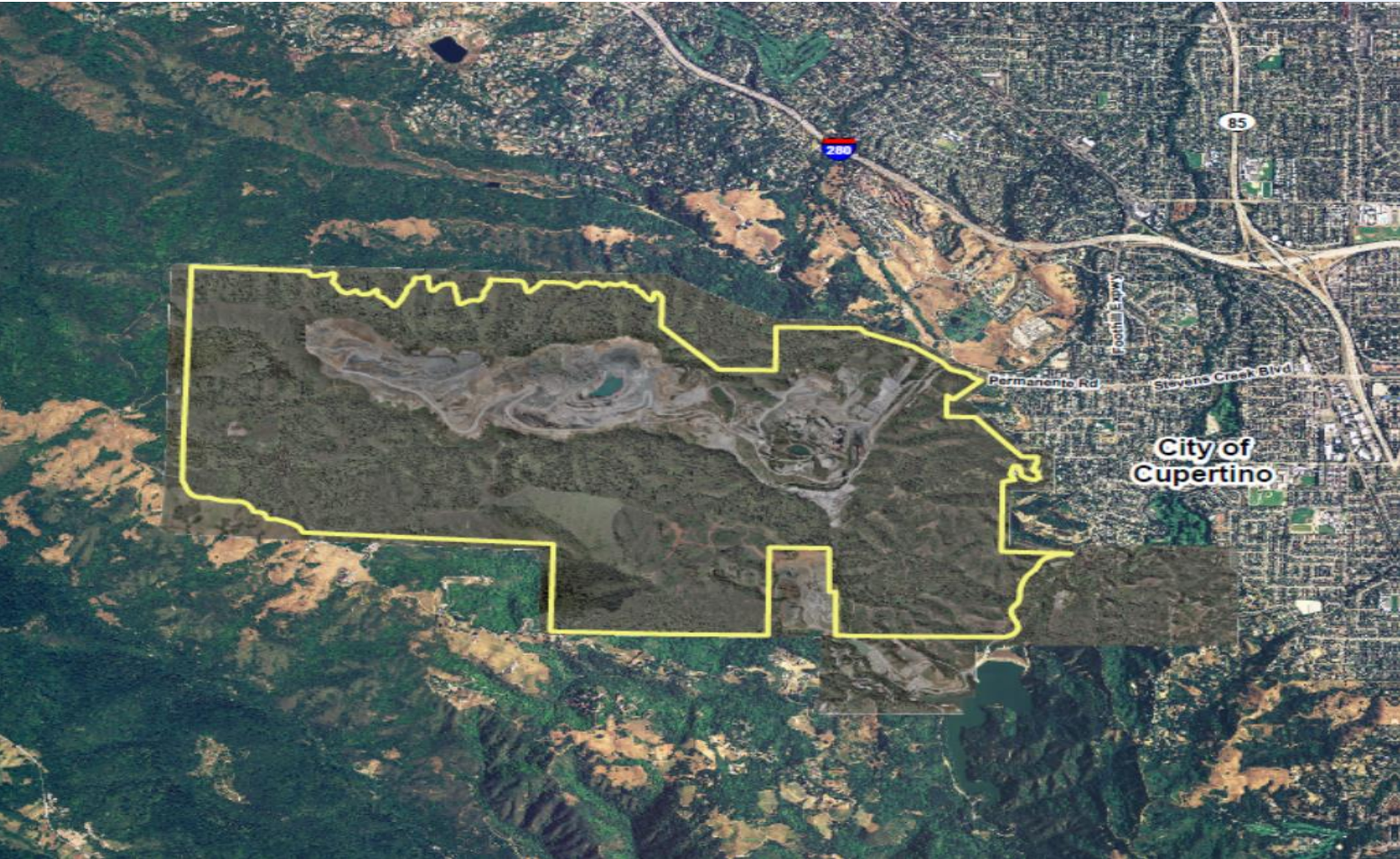


Background

- Lehigh Southwest Cement Plant is located in unincorporated Cupertino at the end of Stevens Creek Boulevard
- Regulation 9, Rule 13 effective September 9, 2013
- The Rule sets emission limits for NO_x, PM and Toxic Air Contaminants (TACs)



Facility Location





Facility Description

- Limestone is quarried, crushed, and combined with other raw materials in a high temperature kiln system to produce “clinker”
- Clinker is cooled, ground, and mixed with gypsum to produce Portland cement
- Facility also produces and sells aggregates





Issues Prior to Rule 9-13

- Visible emissions from quarrying and cement manufacturing
- Largest source of uncontrolled NO_x in Bay Area
- High emissions of PM and Toxic Air Contaminants (TACs)



Control Technologies Utilized

- Activated carbon injection system (Hg, TACs)
- Lime slurry injection system (HCl, SO₂)
- Baghouse improvements & kiln dust recycling (PM)
- Selective Non-Catalytic Reduction System (NO_x)



Elements of Rule 9-13

➤ Emissions Standards

- Toxic Air Contaminants (mercury, hydrochloric acid, others)
- NO_x standard of 2.3 pounds per ton of clinker
- PM standard of 0.04 pounds per ton of clinker
- Ammonia standard of 10 ppmv above baseline

➤ Stack Requirements

- Configuration ensures health protections as demonstrated by Health Risk Assessment
- Continuous monitoring of all emission points

➤ Fugitive dust mitigation control measures



Compliance Status

Pollutant	Standard	Compliance	Comments
Total Hydrocarbon, or Hazardous Air Pollutants (HAP)	24 ppm, or 12 ppm for HAP	YES	Source tests show compliance with HAP standard
Particulate Matter	0.04 lbs/ton clinker	YES	Source tests show compliance
Dioxins and Furans	0.2 ng/dscm	YES	Source tests show compliance
Nitrogen Oxides	2.3 lbs/ton clinker	YES	CEMS show compliance
Ammonia	Baseline concentration + 10 ppm	YES	CEMS show compliance

Compliance Status (continued)

Pollutant	Standard	Compliance	Comment
Hydrogen Chloride	3 ppm	YES	Source tests show compliance EPA is working on CEMS certification
Mercury	55 lbs/million tons of clinker	YES (since Dec. 2013)	October 17 - December 2013, Mercury CEMS show exceedance of standard

- Enforcement staff is currently reviewing mercury CEMS data for possible emission standard and reporting violations



Next Steps - Stack Requirements

- Health Risk Assessment under review for new stack
- Permit application to be submitted
- Public notice will be required
- Compliance agreement deadline – February 28, 2015



BAY AREA
AIR QUALITY
MANAGEMENT
DISTRICT

Update on Sims Metal Management Facility

Stationary Source Committee Meeting
February 24, 2014

Jeffrey McKay
Deputy Air Pollution Control Officer



Sims Metal Management



Sims Metal Management
699 Seaport Blvd
Redwood City, CA 94063



Sims Metal Management

Large Scrap Metal Recycling Facility:

- Receives scrap metal including automobiles and appliances
- Scrap metal processed in permitted hammer-mill shredder
- Sorted into ferrous and non-ferrous components
- “Fluff” – Shredder residue stabilized and used for daily cover at landfills
- Processed scrap metal shipped via cargo ship overseas
- Pre-shredded and shredded material stored onsite in uncovered piles



Sims Metal Management Fires

- Two large fires occurred at Sims Metal in 2013:
 - November 10, 2013 and December 17, 2013
- Both fires occurred in a pre-shredded scrap pile during off hours. Causes are under investigation.
- Significant offsite impacts: Smoke and odors
- 97 air pollution complaints
- Cited for creating a Public Nuisance (each fire)
- Working with other agencies to coordinate remedies





Regulation 6, Rule 4

Metal Recycling and Shredding Operations

GOAL: Minimize and reduce fugitive particulate emissions by development of and compliance with Emissions Minimization Plans (EMP)

Rule requirements:

- Submit EMP by May 1, 2014
 - Detail management practices, control measures, equipment and procedures employed at facility to minimize emissions
- 30-day public comment period and District approval process
- Report planned fugitive emissions reductions and prevention measures by May 1, 2015
- Five-Year review of EMP



Next Steps

- Move to “no-pile” policy and ability to improve enforcement in EMP
- Enclosed conveyers and ability to improve enforcement in EMP
- City is seeking “qualified operators” requirement
- City is seeking improved site security requirement
- Coordinating future efforts with San Mateo County and other County Health Officers



BAY AREA
AIR QUALITY
MANAGEMENT
DISTRICT

Update on Petroleum Refining Emissions Tracking Rule

Stationary Source Committee Meeting
February 24, 2014

Brian Bateman
Health & Science Officer



Presentation Outline

1. Purpose of rule and general approach
2. Rule development process update
3. Summary of rule elements
4. Public comments
5. Revisions to initial draft rule
6. Crude slate and greenhouse gas emissions
7. Next steps



Purpose of Petroleum Refinery Emissions Tracking Rule

- Changing crude slates (or other factors) may lead to increased air emissions at refineries over time
 - More energy is needed to refine heavier, or more sour, crudes
 - Sulfur or other contaminants, if not removed, could be emitted
 - Increased corrosion could lead to incident-related releases
- Approach
 - Track air emissions and community air quality over time, and make information available to the public
 - If annual emissions from a refinery increase by more than a small amount:
 1. Require that the cause be analyzed and disclosed
 2. Require that feasible measures be taken to reduce emissions expeditiously



Rule Development Process Update

- May 2012: Issued Regulatory Concept Paper
- Oct. 2012: “Work Plan for Action Items Related to Accidental Releases from Industrial Facilities” adopted
- Mar. 2013: Issued workshop report and initial draft rule
- Apr. 2013: Public workshops held (Martinez, Richmond, District office – webcast)
- Air Monitoring Guidelines
 - Jul. 3, 2013: Desert Research Institute report finalized
 - Jul. 11, 2013: Expert Panel convened – webcast
- Emissions Inventory Guidelines
 - Sep. 2013: Draft emissions inventory guidelines issued
- Stakeholder Technical Work Group meetings
 - Sep. 26, 2013
 - Jan. 27, 2014
- Additional meetings held with stakeholders
- Sep. / Oct. 2014: Anticipated timeframe for Board consideration of adoption



Baseline and On-going Emissions Inventories

- Submitted emissions inventories must use methodology consistent with Emissions Inventory Guidelines
- Pollutant Coverage
 - Regulated air pollutants (criteria pollutants, toxics, greenhouse gases)
- Source Coverage
 - Stationary sources at refineries
 - Cargo carriers that load or unload materials at refineries
 - Co-located third-party refinery operations
- Baseline Emissions Inventories
 - EPA method
 - Ten year look-back period (2004 – 2013)
 - Average emissions over 24 consecutive month baseline period for each pollutant
 - Cannot include:
 - Non-compliant emissions
 - Emissions during reported incidents
 - Emissions in excess of current emission limits
- On-going Emissions Inventories
 - Each calendar year starting with 2014



Trigger-Levels and Emission Reduction Plans

- Trigger-Levels
 - Emissions-based
 - Impact-based
 - Incremental impacts
 - Cumulative impacts

- Emission Reduction Plans
 - Required if emissions from a refinery increase above trigger-levels
 - Causal analysis
 - Identify air emission reduction measures to be implemented
 - Measures sufficient to reduce emissions below trigger-levels within 2 years, or
 - All feasible measures based on results of refinery-wide emission reduction audit
 - Measures must be implemented on an expeditious schedule
 - Plans must be updated annually to consider additional feasible measures based on advances in technology (until emissions are reduced below trigger-levels)



Air Monitoring Systems

- Submitted Air Monitoring Plans must be consistent with Air Monitoring Guidelines
- Fence-line and community air monitoring systems must be installed and operated in accordance with approved Air Monitoring Plan
- Fence-line monitoring systems
 - Would cover additional pollutants (e.g., volatile organic compounds) and provide greater spatial coverage than existing District-required monitoring
- Community air monitoring systems
 - Would improve ambient air monitoring during incidents
 - Would provide valuable data for: (1) estimating health risks, (2) making inter-site air quality comparisons, and (3) evaluating air quality trends over time

The image shows a scenic view of the Golden Gate Bridge in San Francisco, California. The bridge's iconic orange-red towers and suspension cables are prominent against a clear blue sky. In the foreground, the bridge's approach spans across a body of water, with a large, light-colored building situated on the shore. The overall scene is bright and clear, capturing the bridge's architectural details and its setting in the city.

Public Comments

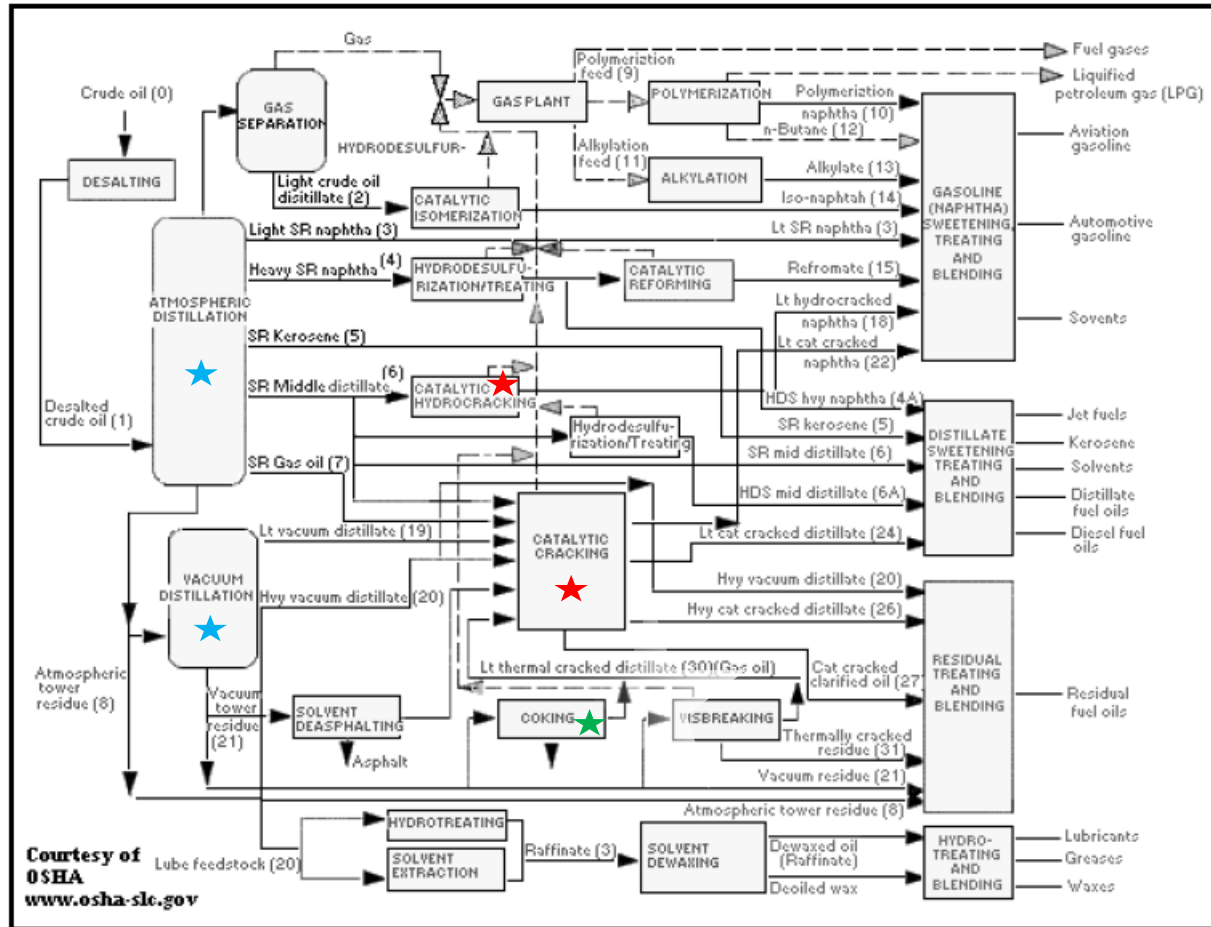
- 10 comment letters received (96 separate comments)
- Preliminary responses to comments issued
- Industry comments
 - Question need for rule – resource concerns
 - Too much staff discretion over details of emissions inventory and air monitoring guidelines
 - Emissions baseline methodology not flexible enough
 - Trigger-levels too stringent
 - Rule should allow the use of Emission Reduction Credits (ERCs)
 - Emission Reduction Plans
 - Too much uncertainty regarding what emission reduction measures may be required
 - Can't adequately evaluate impacts of potential emission reduction measures prior to rule adoption
- Environmental / Labor comments
 - Emissions baseline methodology too flexible
 - Need more proactive approach
 - Track crude slate / equipment – changes trigger action
 - Up-front demonstration that no increase in emissions would occur
 - Independent community / worker oversight board selects experts to review and approve or disapprove
 - Use rule as an emissions cap – require lower emissions over time



Revisions to Draft Rule

- Added cargo carriers (e.g., ships, trains) to source coverage
- Revised emissions baseline methodology
 - Fully conform to EPA method
- Clarified that feasible measures must be cost-effective
- Allow limited use of Emission Reduction Credits (ERCs)
 - May be applied to net below regional emissions-based trigger-levels
 - Must first:
 - Complete emission reduction audit, and implement on-site emission reduction measures determined to be feasible
 - Demonstrate local impacts do not exceed national ambient air quality standards
- Considering adoption of emissions inventory and air monitoring guidelines in rule by reference, but allow staff to make administrative and minor updates
- Considering alternative greenhouse gas trigger-level
- Continuing to explore options for refinery control requirements

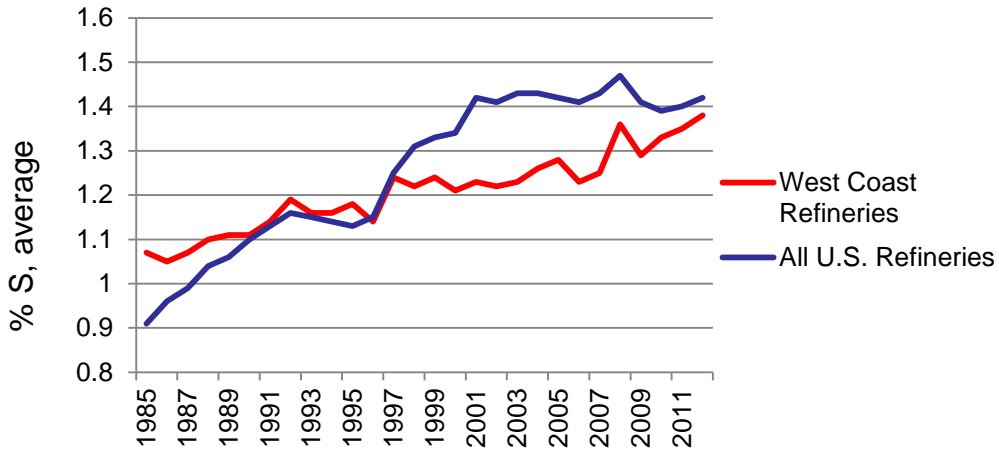
Schematic Flow Chart of a Typical Complex Refinery



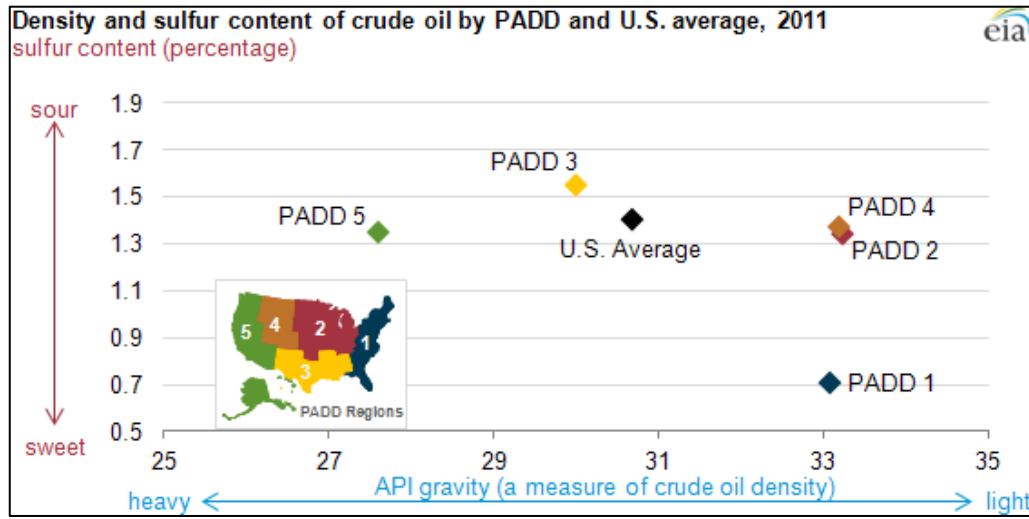
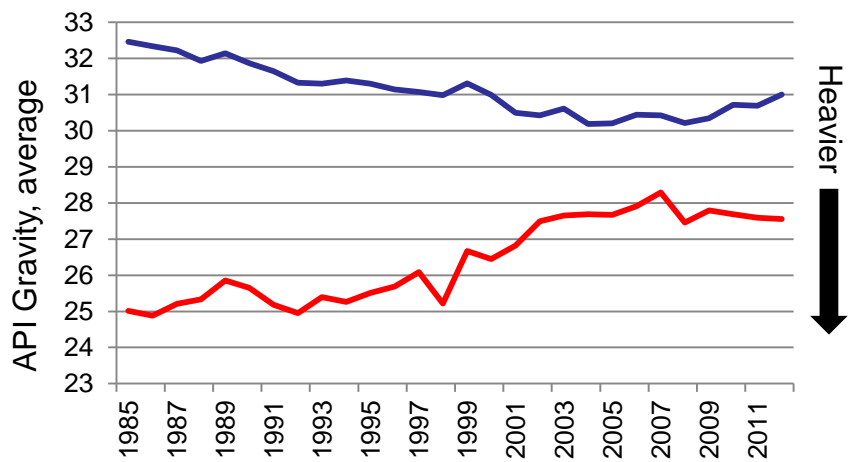


Trends in Crude Oil Quality

Sulfur Content



Density

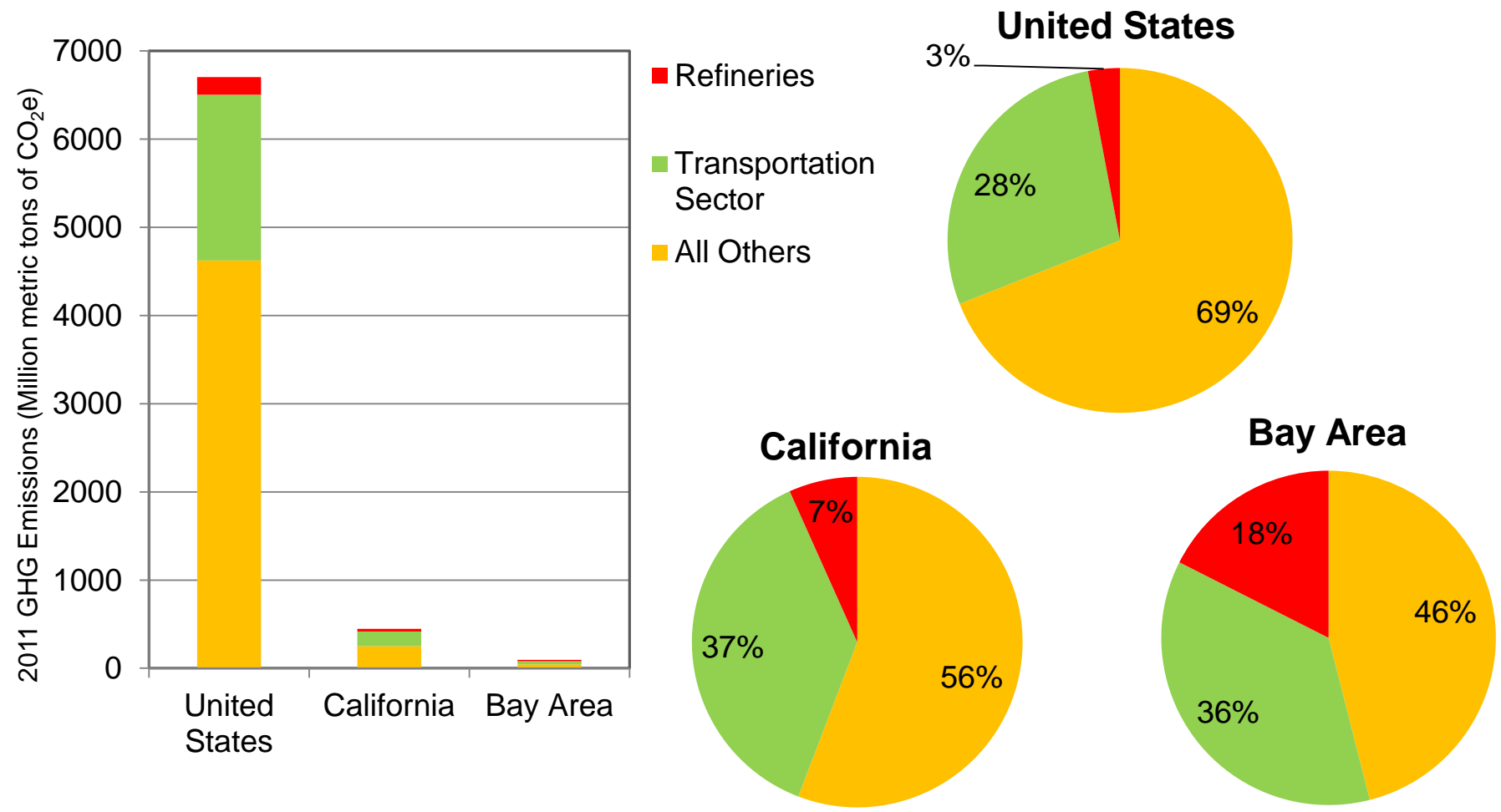


- API gravity is a measure of the density of a liquid. It is expressed in degrees, where a higher number indicates lower density.
- Crude oil with an API gravity greater than about 31 degrees is considered “light”.
- Average crude slate of California refineries (2011):
 - Sulfur content: 1.49%
 - API Gravity: 24.6 degrees

PAD District 5 (West Coast): Alaska, Arizona, California, Hawaii, Nevada, Oregon, Washington.

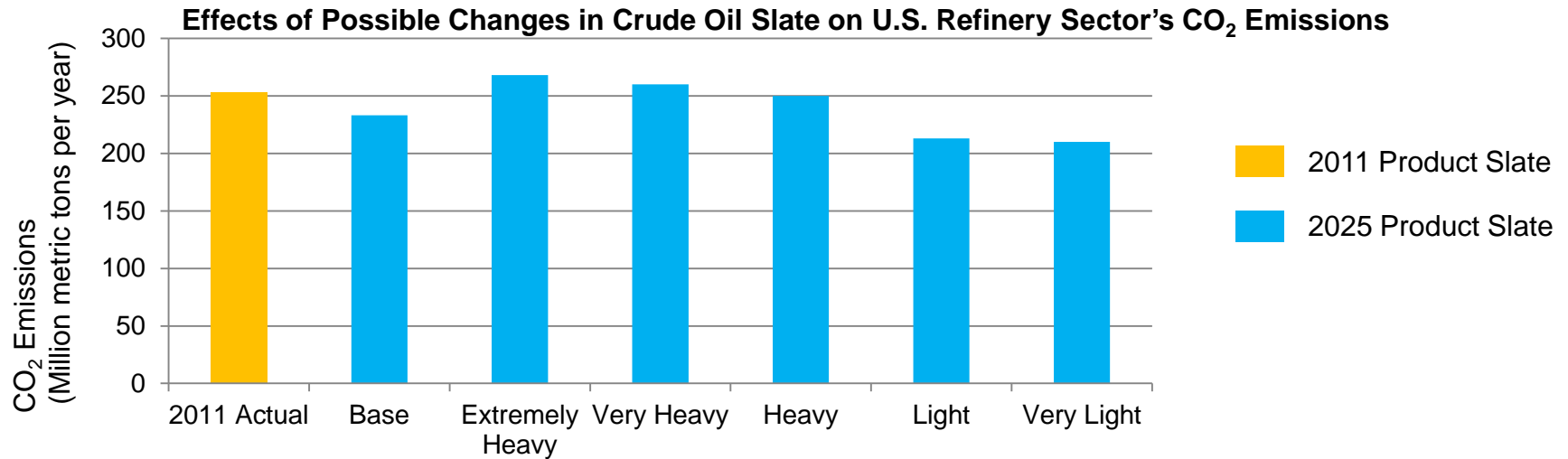
- California currently has 64% of PAD District 5's refining capacity

Refinery Greenhouse Gas Emissions



- California has 11% of the U.S. petroleum refining capacity, and consumes 11% of the nation's energy used in the transportation sector.

Crude Slate and CO₂ Emissions



Crude Slate Scenario	API Gravity	Sulfur Content (%)	CO ₂ Emissions	Change from Base Case Scenario
2011 Actual	30.5	1.41	253	-
Estimates for 2025 Product Slate				
Base (same as 2011)	30.5	1.41	233	-
Extremely Heavy	24.6	1.49	268	15%
Very Heavy	26.3	2.04	260	11%
Heavy	28.2	1.90	250	7%
Light	34.2	1.02	213	-9%
Very Light	35.5	0.93	210	-10%

- The “Extremely Heavy” crude slate scenario denotes the current California crude slate, extended to the U.S. as a whole.



Next Steps

- Continue discussions with stakeholders
- Finalize emissions inventory and air monitoring guidelines
- Hold another set of Public Workshops
- Complete analysis of socioeconomic and environmental impacts
- Complete staff report
- Hold public hearing for consideration of adoption
 - Anticipated in Sept / Oct 2014