



Cap-and-Trade Adaptive Management

Board Update
November 19, 2015

California Environmental Protection Agency

 **Air Resources Board**

Outline

- Defining Adaptive Management (AM)
- Regulatory Framework
- Key Questions
- Development of AM Process
- Adaptive Management Working Group
- GHG Mapping Tool
- Facility, Community, and Sector Trend Analyses
- Next Steps

Defining Adaptive Management

- Process for tracking and responding to emission trends under Cap-and-Trade Program
- ARB concluded that Cap-and Trade is unlikely to contribute to increased localized emission impacts
- Board approved Adaptive Management (AM) Plan in 2011; AM process under development would implement the Plan

Defining Adaptive Management (cont.)

- Transparent process empowers public to follow and ground truth staff's analysis
- Emissions tracking and trends analysis of
 - Individual Cap-and-Trade facilities,
 - California communities with multiple Cap-and-Trade facilities
 - Industrial sectors
- Potential tie in with U.S. EPA 111(d) (Clean Power Plan)

Regulatory Framework

- Air pollution control programs at federal, State, and local levels
- Reduce greenhouse gas, toxic, and criteria pollutant emissions to improve health of all California residents
- Cap-and-Trade requires greenhouse gas emission reductions that will also help protect public health
 - Price on carbon incentivizes emissions reductions
 - Adaptive management would track trends and establish process for responding to those trends

Key Questions

- Has a facility or group of facilities changed their emissions and will that change likely continue?
- Does the change merit a more detailed analysis?
- Is that change a direct result from the implementation of Cap-and-Trade?
- What is the public process and potential outcomes?

Development of AM Process

- Developed collaboratively with CAPCOA
- Public comments
 - Four regional meetings in 2015
 - Status update at November 2015 Board Hearing
- Continue to work with the public, local air districts, and stakeholders in 2016
- Revise process, hold additional regional meetings
- Final process in 2016

Adaptive Management Working Group

- ARB staff will assemble an Adaptive Management Working Group:
 - Environmental health
 - Public health
 - Air district
 - Environmental justice
 - Regulated industry
 - Other interested stakeholders
- Advise on key aspects of AM analytics

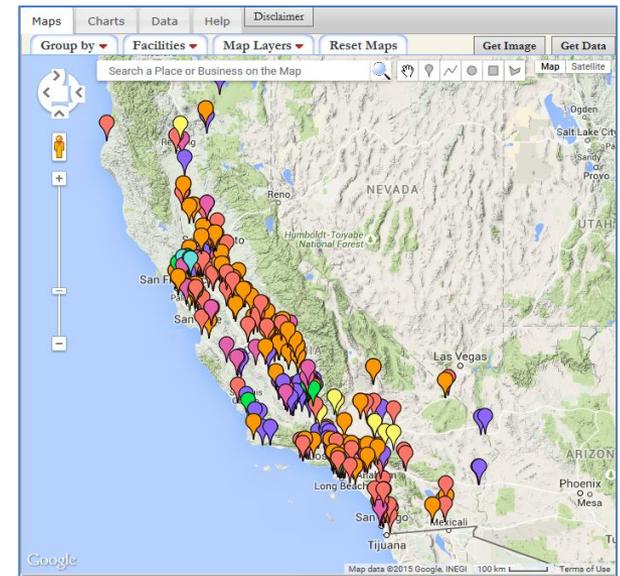
Systematic and Transparent Process

- Draft detailed process released for public comment
- Emissions tracking, analytics, and decision-making for responses to address emission changes



Greenhouse Gas Emissions Mapping Tool

- Publicly available tool *
- Stakeholders can replicate staff's analyses
- Track GHG emissions and trends in California communities
- Mapping tool is a first-order screening
 - GHG increases may suggest potential increase in criteria or toxic emissions
 - GHG changes may trigger more detailed analysis



*<http://www.arb.ca.gov/ei/tools/ghgfacilities/>

Data Collection & Screening

Data Analysis

Review

Decision Making

Video Demonstration

Facility Search Criteria

Facility Name:

Emission Year: Year: **Choose Years** x 2013

Geographic Region: Basin: **Choose Air Basins**, District: **Choose Air Districts**, County: **Choose Counties**, City: **Choose Cities**, Zipcode: **Choose Zip Codes**

Primary Sector: Sector: **Choose Sectors**

Cap-and-Trade: 2013 Covered Facilities? **Yes/No**

Air Pollutant: Pollutant: **Choose Pollutants** x CO2E_TOTAL

Emission Level (MT): CO2E_TOTAL: Min Max

Emissions by Facility

FACILITY	CO2E_TOTAL (MT)
1 3M Corona	13,094
2 ABI Foundry	13,925
3 ACE Cogeneration	325,824
4 AES Alamitos, LLC	895,129
5 AES Huntington Beach, LLC	498,407
6 AES Redondo Beach LLC	223,211
7 Aemetis Advanced Fuels Keyes, Inc.	55,566
8 Aera Energy Beldridge Gas Plant 32	34,678
9 Aera Energy Coastal Basins	198,501
10 Aera Energy San Joaquin Basin	3,331,119
11 Aera Energy Ventura Basin (opt-in 2015)	19,704
12 Aera Energy Ventura Gas Plant	6,995
13 Aerojet Rocketdyne	10,081
14 Agrium US Inc	14,835
15 Air Liquide El Segundo Hydrogen Plant	585,449
16 Air Liquide Large Industries US LP - Rodeo Hydrogen Plant	884,931
17 Air Products & Chemicals, Inc., Martinez	270,753
18 Air Products - APMC - Stockton CoGen	0
19 Air Products Carson Hydrogen Plant	719,875
20 Air Products Manufacturing Corporation, Sacramento	43,675
21 Air Products Wilmington Hydrogen Plant	608,550
22 Algonquin Power Sanger, LLC	61,757
23 All American Asphalt	19,117
24 All American Oil and Gas Company	154,545
25 Allergan	14,320
26 Alon Bakersfield Refinery - Area 3	0
27 Alon Bakersfield Refinery - Areas 1&2	30,514
28 Ameresco Chiquita Energy LLC	36,752
29 Ameresco Half Moon Bay	48,345
30 Ameresco Keller Canyon	16,131
31 Ameresco Santa Cruz	11,333
32 Amgen Inc.	22,377
33 Ampersand Chowchilla Biomass, LLC, 93610	108,387
34 Anheuser-Busch LLC - Fairfield (opt-in 2013)	17,095
35 Anheuser-Busch LLC - Los Angeles Brewery	48,111
36 Applied Energy LLC - NAS North Island	158,703
37 Applied Energy LLC - NTCMCRD	108,726
38 Applied Energy LLC - U.S. Naval Station	195,306
39 Avenal State Prison	18,401
40 Azteca Milling, L.P.	13,490
41 BWP/MPP Electricity Generating Facilities at	453,892

Proposed Analysis Overview

- Individual Facility Analysis
- California Community Analysis
- Multiple Year Trend Analysis



Individual Facility Analysis

- ARB will track emissions at Cap-and-Trade facilities located in California
 - First compliance period deadline: November 2, 2015
- Compare most recent report year greenhouse gas emissions data to previous years

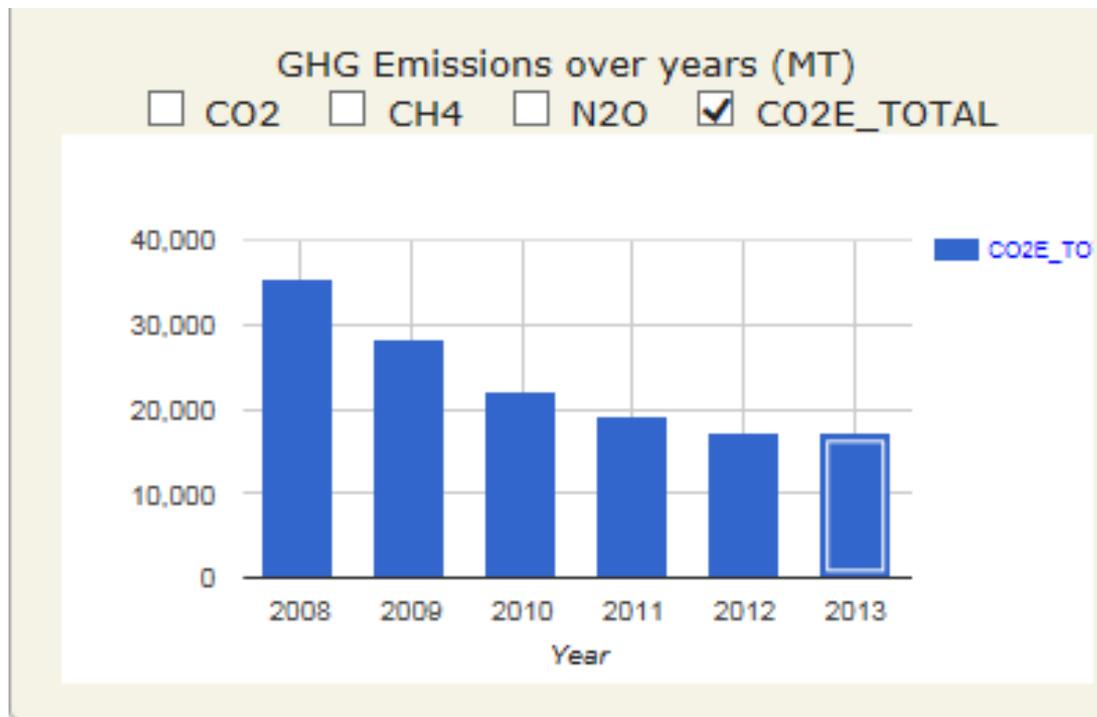


Community Analysis

- Using the mapping tool, staff will conduct the community analysis by:
 - Positioning a defined shape in a California community with multiple Cap-and-Trade facilities
 - Compiling aggregate GHG emissions for the specific area
 - Comparing emissions with previous years
 - Repeating above process for each California community with multiple Cap-and-Trade facilities
- Public can follow our analysis, or conduct their own using the mapping tool



Multiple Year Trend Analysis



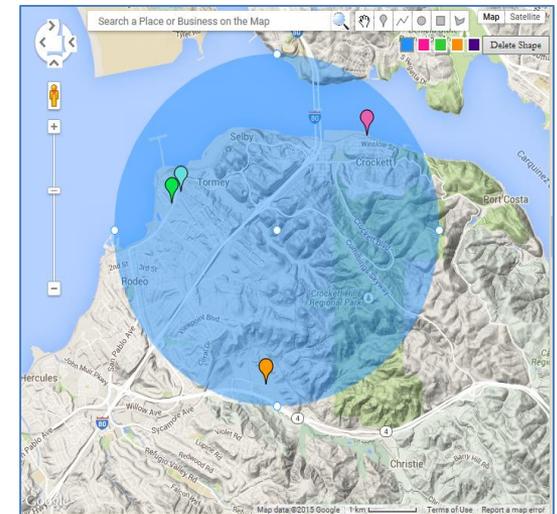
Emissions Inventory Review and Results

- Work with air districts to quantify criteria pollutant and toxic air contaminant emissions
- Drill down on reasons for emission changes
- Develop annual report summarizing results



Opportunities for Continuing Public Participation

- Interactive Greenhouse Gas Emissions Mapping Tool allows stakeholders to:
 - Track greenhouse gas changes at individual facilities, in California communities, and across industrial sectors
 - Follow and replicate staff's analysis
- On annual basis, ARB will:
 - Post Results from Analysis
 - Consider Public Comments Received
 - Present Results at Public Board Meeting



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Potential Responses to Issues Identified

- ARB's long-standing approach to implementing programs to ensure that goals are met
- Some potential responses if localized trends are identified can include:
 - Air monitoring studies
 - ARB sponsored research study
 - Health risk assessments
 - Regulatory amendments
 - Amendments to district rules

Data Collection &
Screening

Data Analysis

Review

Decision
Making

Public Comments to Date

- Questions about where to access information for the Cap-and-Trade Program
- Interactive GHG Emissions Mapping Tool does not contain enough information
 - Include criteria and toxic emissions, and whether allowances or offsets were used for Cap-and-Trade compliance
- Mapping Tool misses opportunities
 - May not capture disparity in the rate of emission reduction in disadvantaged communities relative to other communities
 - May not capture potential criteria/toxic increases caused under some circumstances

Next Steps

- Consider Public Comments Received
- Revise draft Adaptive Management Process, release early 2016
- Additional statewide public meetings in 2016
- Present final Adaptive Management Process to Board in 2016