

Climate Protection Grant Program

Climate Protection Committee Meeting
September 21, 2017

Abby Young, Climate Protection Manager
Planning and Climate Protection



History of Air District Climate Funding

Previous GHG Reduction Funding Programs

Traditional Transportation Funding

- Electric vehicles and EV charging
- Trip reduction through Transportation Fund for Clean Air
- Black carbon reduction through Carl Moyer grants and wood smoke incentives

2009 GHG Reduction Grants

- Funded through ConocoPhillips settlement
- \$4+ million for energy efficiency and renewable energy on public buildings

2007 Climate Protection Grant Program



2007 Climate Protection Grant Program

\$3 million Climate Protection Grant Program

- 53 grants to local governments and non-profits
- Grant range: \$24,000 – \$75,000
- Funding themes:
 - Youth Climate Activities
 - Climate Protection Planning
 - Capacity-building
 - Regionalizing Best Practices
 - Fostering Innovation



2007 Climate Protection Grant Program

Selected Outcomes

- Marin Clean Energy – first Community Choice Energy program
- BerkeleyFirst – first Property-Assessed Clean Energy (PACE) program
- Seed funding for 7 full-time climate staff
- 19 local climate plans established Bay Area as a leader in climate action planning



2017 Climate Protection Grant Program

Over-arching Goal: *To achieve GHG reductions by accelerating implementation of the 2017 Clean Air Plan*

Objectives:

- Achieve reductions in all pollutant categories
- Accelerate local implementation of GHG reduction policies and programs
- Engage impacted communities in GHG reduction activities and ensure they benefit from funded projects
- Fill funding gaps
- Implement innovative approaches with regional potential
- Create replicable solutions for the Bay Area and elsewhere
- Complement other Air District grants and incentive programs



Grant Program Structure

\$4.5 Million in Current Budget

Flexible Design

- Range of grant award size
- Range of total number of awarded grants

Eligible Applicants

- Local governments: cities, counties, schools, special districts
- Encourage collaboration across agencies, with non-profits

41.3



Grant Program Priorities

Reduce GHGs from Existing Buildings

- Fills a significant funding and policy gap
- Addresses priority areas such as multi-family and impacted communities
- Encourages local workforce development and job creation

Open Call for Innovative Strategies

- Seeking game-changers
- Must be replicable and scalable



Outreach and Input

Extensive Outreach on Program Design

- Survey of local government staff on funding and resource needs
- Meetings with local government staff across the Bay Area
- Meetings with variety of community-based non-profit organizations
- Discussion with other climate funders
- Coordination with Air District programs: Technology Implementation Office, Strategic Incentives, Community Engagement



Next Steps

Integrate input from Climate Protection Committee into Grant Program Concept	Today
Develop draft grant program guidelines	Sept. – Oct.
Present draft guidelines to Climate Protection Committee	Nov.
Issue call for projects	Dec.
Assess/score applications	Jan. – Feb.
Present award to Board for approval	March



AGENDA: 5

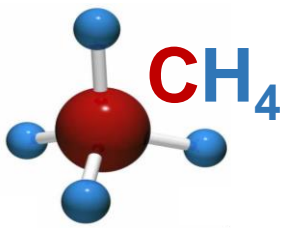
Update on the Air District's Basin-Wide Methane Strategy

**Climate Protection Committee Meeting
September 21, 2017**

**Idania Zamora, PhD, Senior Engineer
Office of Rules and Strategic Policy**

Outline

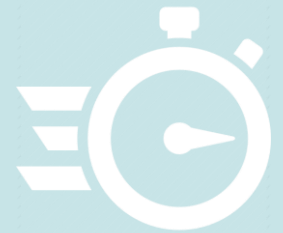
- Why focus on methane emissions?
- Methane in the Bay Area
- Methane Strategy
 - Framework and Tools
 - Methane Research
 - Planning and Climate Efforts
- Methane Regulatory Efforts
 - Highest Priority Rules
- Implementation Timeline



Why Focus on Methane?

A High Impact Strategy to Slow the Rate of Climate Change

- Methane is 34 times more potent than CO₂
- Methane is removed faster from the atmosphere (12 years vs. a range of 20 – 200 years for CO₂)



- Public health and further climate benefits from reduction of climate, criteria and toxic co-pollutants
- Economic benefits from recovered energy and products

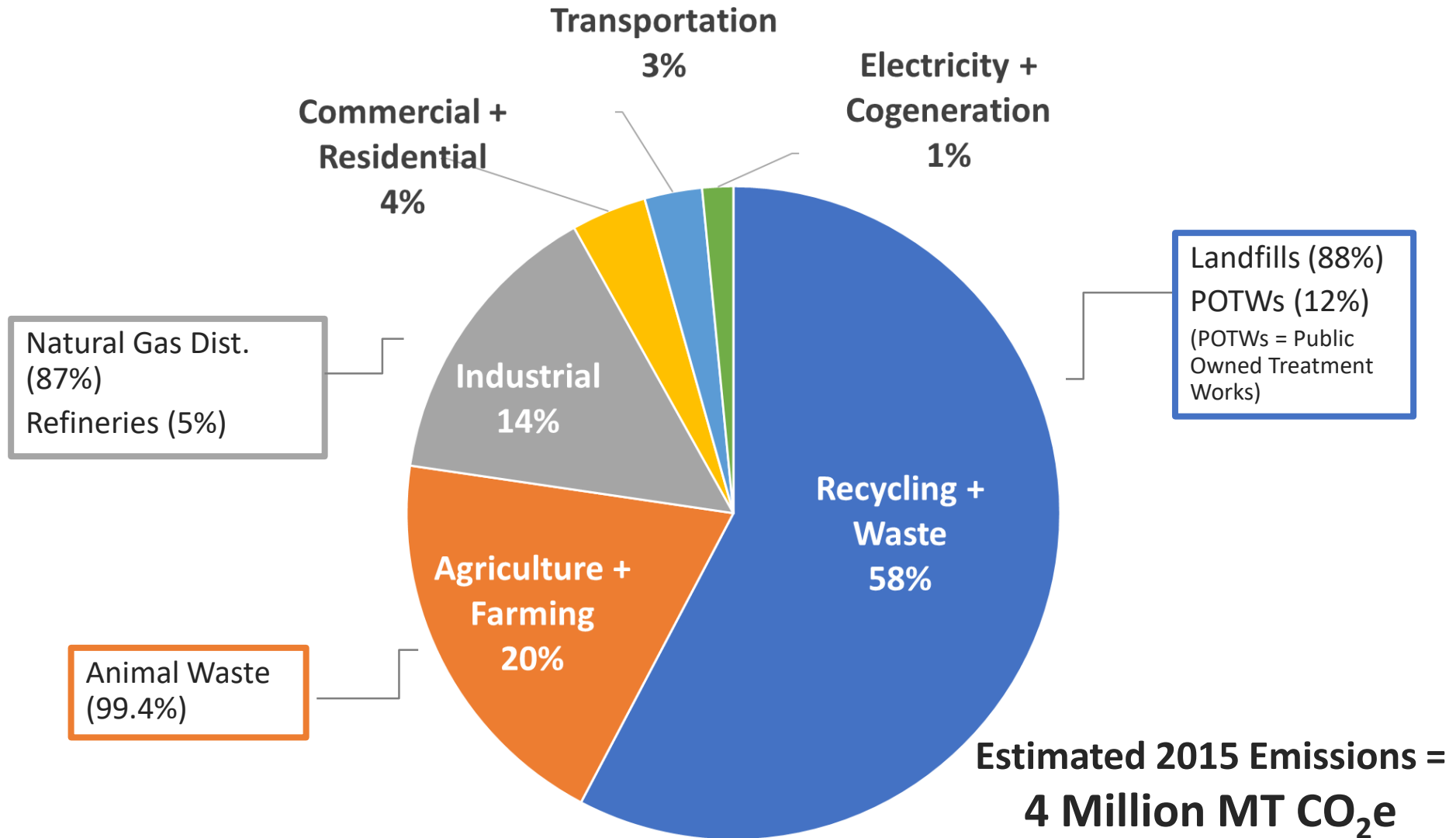
- Air Districts have critical role in meeting State's methane emissions reduction goal of 40% by 2030 (SB 1383)
- Air District has full suite of actions within its authority





Methane in the Bay Area

Current Inventory





Methane in the Bay Area

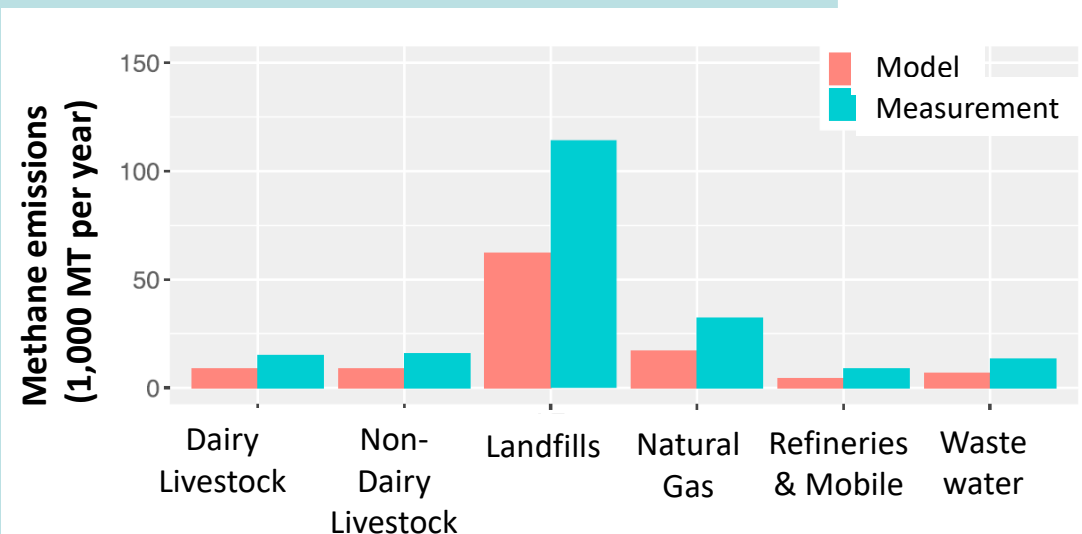
Scientific Findings

*Recent Bay Area “top down” studies**

- Found methane emissions **around 2 times higher** than Air District inventory for 2015
- **Biological methane dominates** methane emissions in the Bay Area (82%), followed by natural gas (15%)
 - Landfills appear to be a dominant source of biological methane

Knowledge Gaps

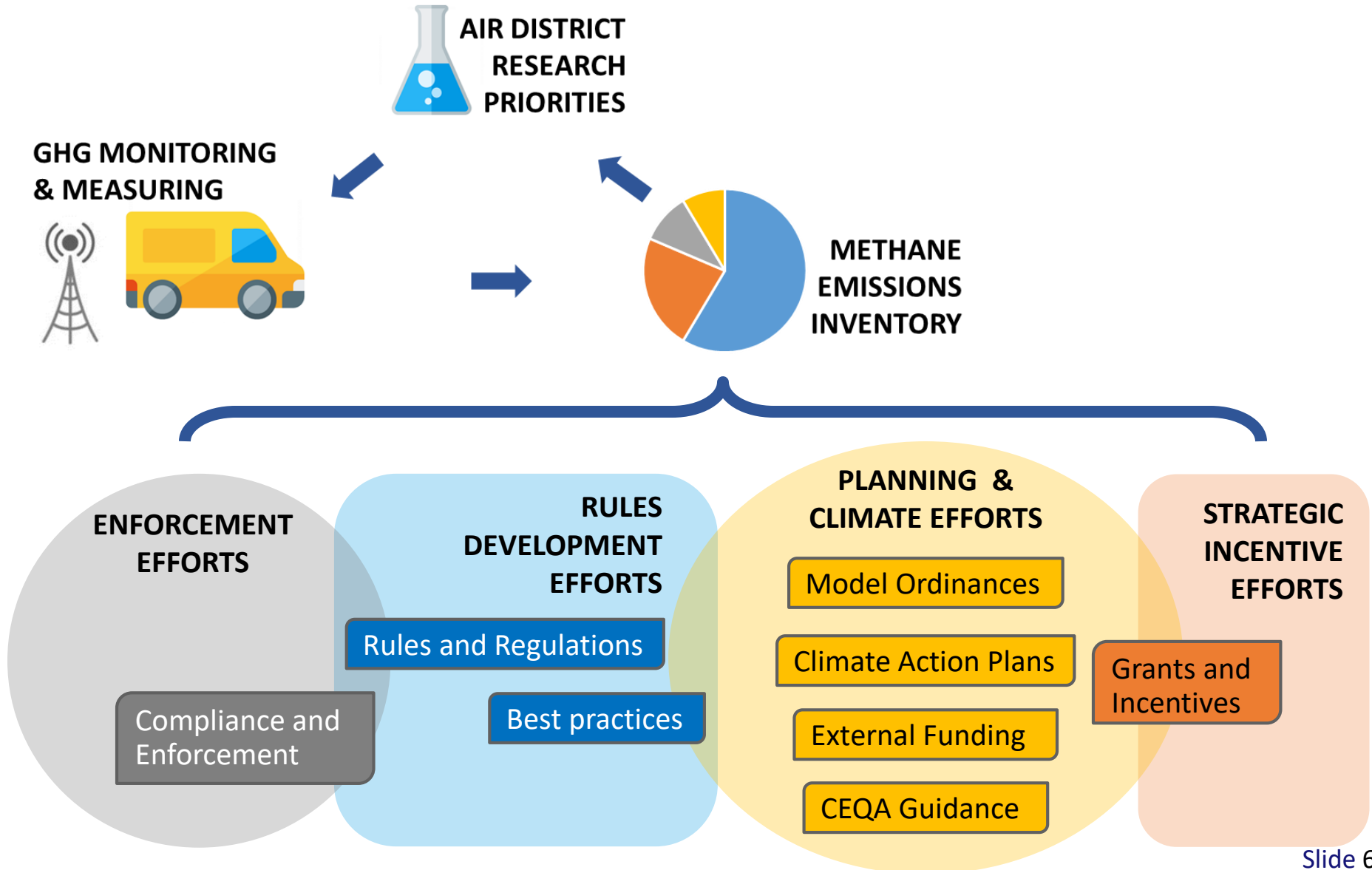
- Composting/
Anaerobic digestion
- Refineries



*Fairley and Fischer, 2015; Jeong et al., 2017

Basin-Wide Methane Strategy

Coordination Framework



Basin-Wide Methane Strategy *Optimization Tools*

Methane Expert Panel

Subject matter experts convened to advise Air District staff during the development of methane strategy

- Panelists from academia, public agencies, industry and NGOs
- Meeting topics include composting, oil & gas sector, landfills, etc.

Research Integration Process

- Streamlines the coordination of research efforts across CH₄ topics and leverages their findings into Strategy

Stakeholder Engagement

- Opportunity for stakeholders to provide input into different aspects of the Strategy (e.g., prioritization, specific rules)





Methane Research Efforts

Led by the Air District

Track long-term regional patterns of GHG concentrations

Fixed-site GHG monitoring network

- Four monitoring sites
- Measure CO₂, CH₄, CO & H₂O
- Data available through Air District's webpage:

<http://www.baaqmd.gov/ghgdata>





Methane Research Efforts

Led by the Air District

Identify emission ‘hotspots’, perform source attribution, and improve the emissions inventory

GHG Research Van

- Fast measurements of CO₂, CH₄, & N₂O
- Source apportionment using chemical tracers
- Currently conducting preliminary leak surveys
 - fine-tune equipment
 - refine source attribution and data collection methodologies



Basin-Wide Methane Strategy

Planning & Climate Efforts

WATER



Improve understanding of GHGs from waste water treatment

Streamline Air District's permitting to promote biogas recovery

Advocacy for funding to develop green infrastructure in POTWs

WASTE



External collaboration to secure funding for green waste diversion

Model ordinances and policies to reduce green waste going to landfills

Advocacy for state/federal policies to support green waste diversion

Basin-Wide Methane Strategy

Planning & Climate Efforts

BUILDINGS



Promote switching natural gas end uses in buildings to electricity

Reduce natural gas use through model ordinances, best practices and funding

AGRICULTURE



Develop guidance materials on carbon-based farming techniques for local climate action plans

Launch a public education/outreach campaign to promote low-GHG diets

Develop case studies on small-scale use of dairy digesters

Basin-Wide Methane Strategy

Regulatory Efforts

METHANE RULE DEVELOPMENT MAP

OIL & GAS



General Methane Leak Prohibition [Reg. 13-2]



Natural Gas Processing & Distribution [SB 1371]

Crude Oil & Natural Gas Production [Reg. 8-37]



Refineries

BIOLOGICAL



Composting



Landfills [Reg. 8-34]

Anaerobic Digestion

POTWs



Reg 13, Rule 2: General Methane Leak Prohibition

Establishes limit for methane leaks across all Bay Area sources

Background

- Aliso Canyon leak released ~2.4MMTCO₂e during 2015-2016
- Air District Rule 8-2 prohibits large leaks of organic emissions (15 lbs per day) throughout District *but exempts natural gas*

Purpose

- To allow Air District to take prompt action in case of large leaks
- To serve as a **backstop** while source-specific rules are adopted

How will it work?

- Operators will need to fix leaks > 10,000 ppm and 10 lb/hr



Reg 8, Rule 37: Crude Oil & Natural Gas Production

Address CH₄, VOC (Volatile Organic Compounds) and toxic emissions from smaller oil and gas production facilities exempted by Air Resource Board's Oil & Gas Rule (SS 13)

Background

- Air District Rule 8-37 limits organic compounds from natural gas and crude oil facilities but *exempts methane*

Air Resource Board's Oil & Gas Rule (adopted in March 2017)

- Covers < 25% of Bay Area GHG emissions due to exemptions
- Allows air districts to implement firmer requirements

How will it work?

- Consider a lower leak threshold to achieve cost-effective methane and VOC emissions reductions and protect public health
- Remove methane exemption from rule

Reg 8, Rule 37: Crude Oil & Natural Gas Production

Active Well Pilot Study (Fall 2017)

- Seeks to better characterize methane, VOCs, and toxic emissions from active oil & gas wells in the Bay Area
- Will cover approximately 10% of active wells (10 out of 105 wells)
- Initial screening using optical and other real-time instruments
- Measure VOC/toxics via canister sampling and organics speciation
- Measure CH₄ leak concentrations with ultraportable methane analyzer
- Key sources
 - Production Facility (e.g., Wellhead, Separator)
 - Produced Water / Condensate Tanks
 - Vacuum trucks



New Rule: Composting Operations

Control methane and VOC emissions from composting (WA 2)

Background

- State goal of 75% waste diversion by 2020 is increasing composting, etc.
- Increase in odor complaints from facilities handling organic waste

Facilities

Composting operations
(both stand-alone and at landfills)



Wood chipping &
grinding facilities



Organic waste handling
(e.g., material stockpiling)



How will it work?

- Implement best management practices for smaller operations
- Require emissions control equipment for larger operations



Implementation Timeline

CM #	2017 Control Measures
SS 15	Natural Gas Processing and Distribution <i>[CPUC Leak Abatement Program Phase I; June, 2017]</i>
SS 16	Basin-Wide Methane Strategy <i>[Implementation planning]</i>

CM #	2018 Control Measures
SS 16	General Methane Mega-leak Prohibition (Rule 13-2)
SS 13	Oil and Gas (Rule 8-37)
WA 2	Composting Operations