

Handout

Agenda Item

9.8

Date

February 14, 2019

Air Quality, Climate Change, & Energy (ACE) Workgroup Meeting

January 15, 2019 (9 – 11 am)

GoToWebinar & Conference Call

Dial-In: 605-472-5814

Passcode: 840 541 702 #



**Priority Issues/
Action Items**



SB 1383: Short-Lived Climate Pollutant (SLCP) Reduction Implementation

- 40% methane reduction by 2030 (relative to 2013 levels)
- Organic waste diversion from landfills (*includes biosolids, digestate, and sludges*)
 - 50% by 2020 (relative to 2014 levels)
 - 75% by 2025 (relative to 2014 levels)
- CEC/CPUC to incentivize biogas production/use
- **45-day comment period to begin January 18th**
- Adoption 2019 – Effective 2022 – Enforceable 2024



SB 1383: Proposed Organic Waste Reduction Regulations & Economic Analysis

Proposed Regulation

- Emergency disposal to landfills for 90 days
- Limits on local ordinances
- Not only anaerobically digested solids and/or composted biosolids to qualify as landfill reduction
- Need for jurisdictions and POTWs to negotiate whether biosolids can continue to be landfilled
- Procurement of compost and biogas (RNG) as transportation fuel remains

Economic Analysis

- Regional Economic Models, Inc.
- REMI Policy Insight Plus model
- January 1, 2019 through full implementation (2030)
- Key assumptions:
 - Primary impacted industry – Waste Management & Remediation category
 - 10-year amortization, 7% interest rate (per SLCP Reduction Strategy)
 - Equipment purchases by state and local government not modeled



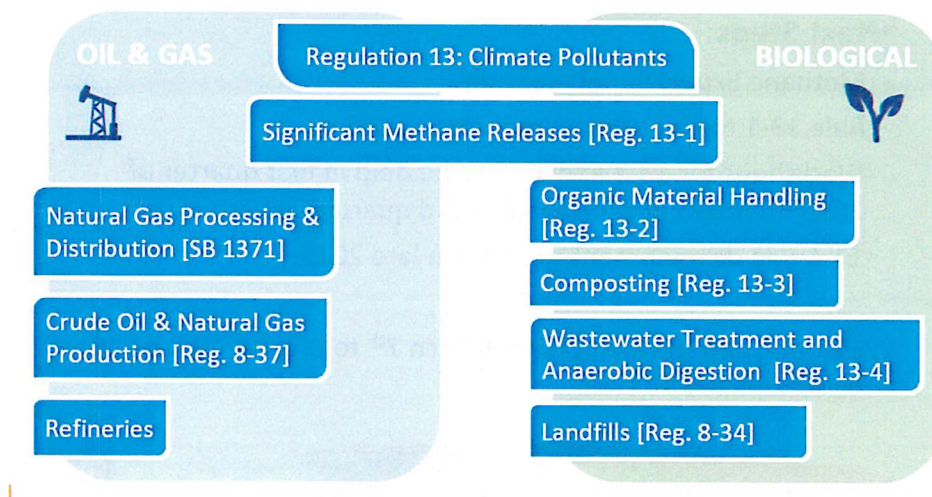
AB 901: Recycling/Disposal Reporting Proposed Amendments Dec 12th

- Released with Proposed Organic Waste Reduction
 - Various definitions remain vague or confusing
 - Unclear reporting requirements for biosolids/WWTPs

- **45-day comment period to begin January 18th**
(with the Proposed Organic Waste Reduction Regulation)



CH₄ Bay Area AQMD:
Climate Pollutants Rule Development
Map to systematically reduce methane emissions





Bay Area AQMD Regulation 13: Climate Pollutants Rule Development

Map to systematically reduce methane emissions

Rules and Regulations	GHGs	Odors	VOCs	Toxics
Regulation 13: Climate Pollutants	N ₂ O, PCPs	n/a	n/a	n/a
Rule 13-1: Significant Methane Releases	CH ₄	Yes	Yes	Yes
Rule 13-2: Organic Material Handling	CH ₄	Yes	Yes	Yes
Rule 13-3: Composting Operations	CH ₄	Yes	Yes	Yes
<i>Rule 13-4: Wastewater Operations*</i>	CH ₄ , N ₂ O	Yes	Yes	Yes
<i>Rule 8-34: Solids Waste Disposal Sites*</i>	CH ₄	Yes	Yes	Yes

* Future rule development efforts.



Bay Area AQMD Regulation 13: Climate Pollutants

Map to systematically reduce methane emissions

- **Next Steps:**
 - Methane Expert Panel meetings
 - Rule 13-1 to go to Public Hearing in 2019
 - Workshops for 13-2 and 13-3 to be held in first quarter of 2019, to Board of Directors in third quarter 2019
 - 13-4 rule development to begin in late 2019

- Meeting with BAAQMD staff **March 7th** to provide “anaerobic digestion: 101”



BAAQMD Climate Technology Review

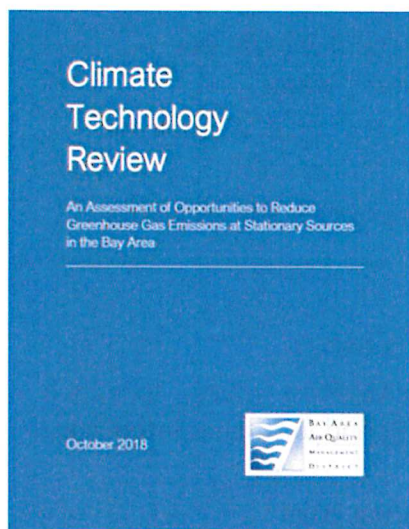


Table ES-1. Number of Mitigation Measures by Industry Sector

Industry	Subsector	Measures
Agriculture	Soil Management	5
	Enteric Fermentation	1
	Manure Management	5
Buildings	Commercial	35
	Residential	19
Electronics	Semiconductors	10
	Natural Gas Compression	1
Petroleum Systems	Refining - Combustion	8
	Refining - Other	18
Metals	Iron and Steel Production	6
Minerals	Cement Production	14
	Batteries	2
Power Generation	Combined heat and power	6
	Fuel Cells/Electrolyzers	1
Waste	Power Plants	1
	Composting	8
	Landfills/Combustion	15
	Wastewater	12
Other	Asphalt Drying	3
	Carbon Capture	1
	Food Processing	8
	Glass Production	8
	Industrial Gas Suppliers	1
Total		188



BAAQMD Climate Technology Review

- 12 wastewater sector mitigation measures identified (Table 16)
 - Annamox
 - Microalgae to replace denitrification
 - Nitrification tank gas capture/co-firing
 - Adjust operations to reduce GHGs in sludge path
 - Geomembrane cover for AD
 - Methane capture/flare from activated sludge
 - Bioscrubber for N₂O process emissions
 - Microalgae cultivation for CO₂ capture in sludge stream
 - Thermophilic AD
 - Bioprocesses for oxidation of CH₄
 - Temperature-phased AD
 - CANDO process

Climate Tech Kick-Off at BAAQMD:
January 22nd, 9 am - noon



Water-Energy GHG Guidance Initiative, WEG 2.0

- Methodology to quantify, compare, and analyze the GHG emissions embedded in delivered water
- Cool Planet Project in partnership with SCE & The Climate Registry, began in 2015
- 2018 - include operations related to WW & RW, including emissions tracking

- **CASA is a Technical Review Team member**
 - Workshop today, **January 15th, 10 AM** for a [webinar](#) to launch the month-long Public Comment Period for the updated WEG Guidance 2.0.
 - Final document delivery in late spring 2019



Voluntary Water-Energy Nexus Registry (SB 1425)

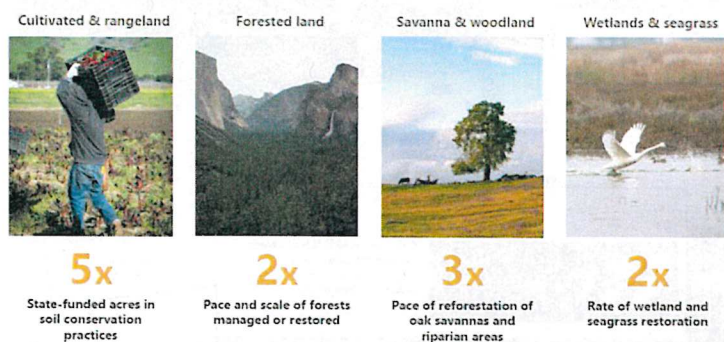
- Voluntary registry accounting for GHG emissions associated with the “water system”:
 - Establish baseline
 - Encourage actions to increase efficiency & reduce GHG emissions
 - Facilitate streamlined data reporting
- Goal: Develop suite of protocols/guidance enabling measurement, reporting, & tracking of entity-wide carbon footprints (product use not included)
- Next Steps:
 - Review and comment on protocol modules
 - Advisory committee update webinar **January 23rd at 10 am**
 - Coordinate with the WEG 2.0 effort!



California 2030 Natural & Working Lands Climate Change Implementation Plan

To maintain our natural and working lands as a carbon sink,

California strives to double the pace and scale of land restoration activities by 2030 and beyond.



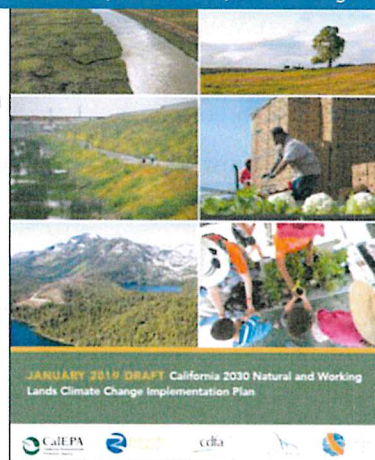
New version (V3) of CALAND estimating carbon benefits!



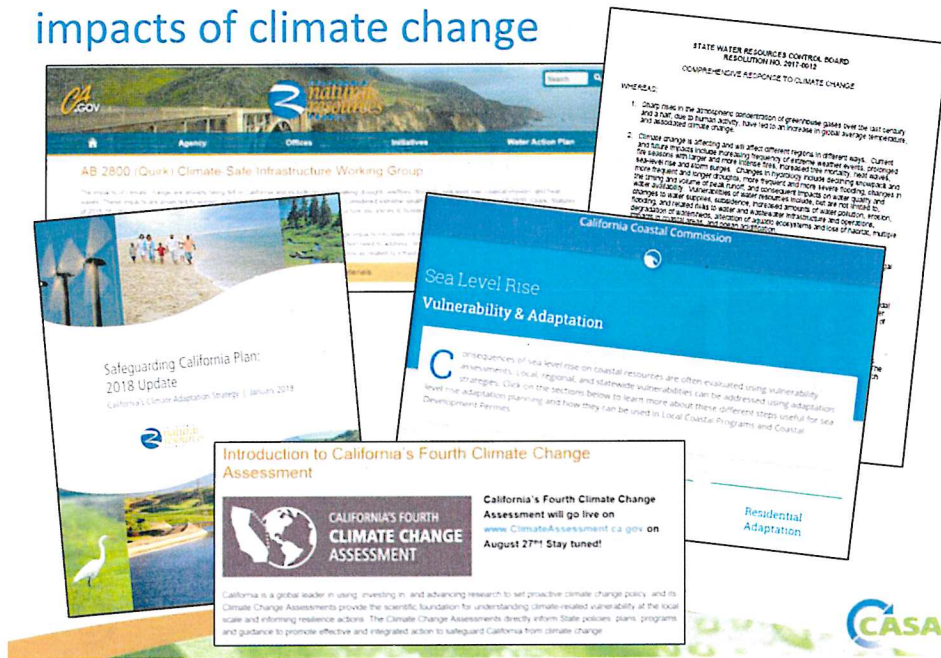
California 2030 Natural & Working Lands Climate Change Implementation Plan

- Required by Scoping Plan Update
- Latest Draft – January 2019
- Sector aims to:
 - **Protect** land from conversion to more emissions-intensive uses through conservation and planning
 - **Enhance** resilience of and potential for carbon sequestration through management and restoration - reduce GHG and black carbon emissions from wildfire and management activities
 - **Innovate** biomass utilization from forestry and agricultural activities to advance statewide objectives for renewable energy and fuels, wood product manufacturing, agricultural markets, soil health, and rural economic development

Plan objective is to expand and improve conservation, restoration, and management



State initiatives looking to adapt California to impacts of climate change



State actions to adapt California's water to impacts of climate change...

- SWRCB Climate Change Resolution
- California Coastal Commission Vulnerability Assessments
- Climate-Safe Infrastructure Workgroup (AB 2800)
- 4th Climate Change Assessment
- CPUC Adaptation Rulemaking
- Ongoing Climate Change Litigation



Legislative Update



California to be Carbon Neutral by 2045!

- Executive Order B-55-18
- SB 100: 100% Clean Energy Act
 - 50% by 2026 (no longer 2030)
 - 60% by 2030
 - 100% by 2045 (w/out increasing GHG emissions in Western Grid)
- SB 1440: Biomethane Procurement
 - Requires PUC to consider adopting policies & incentives
- 2019 bill cycle beginning...

Executive Department
State of California

EXECUTIVE ORDER B-55-18 TO ACHIEVE CARBON NEUTRALITY

WHEREAS climate change is causing historic droughts, devastating wildfires, torrential storms, extreme heat, the death of millions of trees, billions of dollars in property damage, and threats to human health and food supplies, and

NOW, THEREFORE, I, EDMUND G. BROWN JR., Governor of the State of California, in accordance with the authority vested in me by the Constitution and statutes of the State of California, do hereby issue this Executive Order, effective immediately.

IT IS HEREBY ORDERED THAT:

1. A new statewide goal is established to achieve carbon neutrality as soon as possible, and no later than 2045, and achieve and maintain net negative emissions thereafter. This goal is, in addition to the existing statewide targets of reducing greenhouse gas emissions.
2. The California Air Resources Board shall work with relevant state agencies to develop a framework for implementation and accounting that tracks progress toward this goal.
3. The California Air Resources Board shall work with relevant state agencies to ensure future Gooping Plans identify and recommend measures to achieve the carbon neutrality goal.
4. The California Natural Resources Agency, the California Environmental Protection Agency, the California Air Resources Board, and the California Department of Food and Agriculture shall include sequestration targets in the Natural and Working Lands Climate Change Implementation Plan consistent with the carbon neutrality goal.

WHEREAS California has taken the following specific steps to reduce greenhouse gas emissions:

- Requiring significant reductions of destructive super pollutants, including black carbon and methans
- Supporting clean transportation to reduce petroleum use 45 percent by 2030
- Setting a goal of 5 million zero-emission vehicles by 2030
- Proposing to double the reduction in the carbon intensity of fuels through the Low Carbon Fuel Standard by 2030
- Moving the state to 100 percent clean energy by 2045
- Requiring the state to double the rate of energy efficiency savings in buildings
- Extending and improving the state's cap and trade program
- Directing cap-and-trade funds to greenhouse gas reducing programs which benefit disadvantaged communities
- Developing a Forest Carbon Plan to better manage California's forest and



Discussion/ Informational Items



CPUC proposed changes to BioMAT Program

- Of 250 MW called for in SB 1122, <35 MW procured to date
- Proposed changes focus on how to reduce rate-payer costs and narrow program eligibility. For example:
 - Extend program deadline from 2021 to 2026
 - Set 30-day deadline for contract execution
 - Allow utilities an extra 12 months for interconnection
 - Require demonstration of GHG reductions for all project categories (not required for other RPS resources or by SB 1122)
 - Allow export of up to 5 MW of power (even though SB 1122 is limited to 3 MW of export power)
 - Allocate program costs to electricity rate-payers (not just investor-owned utility)

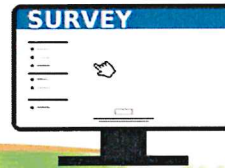
*PGE filing for
bankruptcy end
of the month!*



SWRCB: CA POTW Co-Digestion Capacity Analysis

- **GOAL:** Complete analysis by June 2019
 1. Estimate organics generation in 2025 and 2030 - COMPLETE
 2. Assess existing capacity – IN PROGRESS
(without rehab/modifications)
 3. Assess future capacity in 2025 and 2030 – IN PROGRESS
(without & with rehab/modifications)
 4. Assess methane emissions – IN PROGRESS
 5. Additional Topics: - IN PROGRESS
 - Investigate opportunities and barriers at small- to medium- sized facilities
 - Examine pilot/demonstration facilities that have already operated

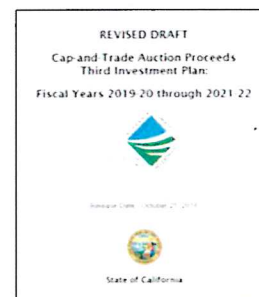
- **Carollo has been reaching out!**



3rd Cap-&-Trade Draft Investment Plan

- FY 2019/20 – 2021/22
- Prioritize funding for:
 - Transportation & Sustainable Communities (60%)
 - Manufacturing Tax Credits & Fire Reclamation
 - Clean Energy & Energy Efficiency
 - Natural Resources & Waste Diversion

- Final version to be released
January 2019



AB 617: Community Air Protection Program

- CARB to harmonize community air monitoring, reporting, & local emissions reduction programs for CAPs and TACs (and GHGs).
- October 1, 2018, CARB set direction for:
 - Assessing community exposure – select 10 high risk communities →
 - Establishing criteria for air monitoring
 - Identifying source contributions and strategies for emissions reduction
 - **Steering Committee development?**
- By October 2019:
 - Establish emission reduction targets, schedule, & enforcement programs
 - Air Districts to submit annual progress reports to CARB in 2019 for 2018

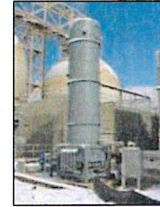


Proposed Flare Rules: SCAQMD, SJVAPCD, & BAAQMD

- **SCAQMD – Rule 1118.1**
 - Control of non-refinery flare emissions
 - Rule and rule deposition approved January 4th
 - SCAQMD staff to meet with sector to begin to looking into potential impact of advanced digestion/SB 1383
 - SCAQMD may meet in Sacramento during “Rethink Methane Symposium” February 26-27 - we should have members attend and educate attendees



Proposed Flare Rules: SCAQMD, SJVAPCD, & BAAQMD



■ SJVAPCD

- Flare Rule 4311: Limit emissions of VOCs, NO_x, & sulfur oxides (SO_x) from operation of flares
- To resume efforts to reduce limits following SCAQMD process

■ BAAQMD

- Plans for new rule by 2020 to reduce NO_x from non-refinery flares (requiring biogas & non-refinery flares to meet lowest available emissions reduction (LAER) level)



Proposed changes to the Low Carbon Fuel Standard (LCFS) adopted

■ Changes adopted late September

- Increased goal from 10% carbon reduction by 2020 to 20% carbon reduction by 2030
- Definitions of "biogas" and "biomethane" to include gas from conversion technologies using organic feedstock
- **Offer credits for zero-emission vehicle infrastructure, based on the capacity of the infrastructure rather than the fuels produced**
- Adopt a credit generating protocol for carbon capture and storage
- Adopt third-party verification requirements
- Streamline some program requirements

■ Next Steps

- Workshop held November 28th to discuss implementation of changes
- ARB to hold a calculator tutorial in March



EPA Renewable Fuel Standard RINs – Sludge & Food Waste Derived Biogas

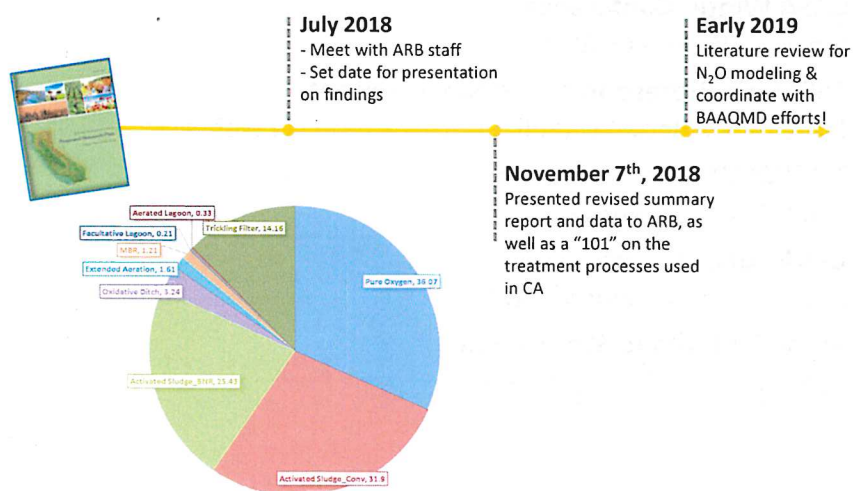
- Renewable Identification Number (RIN)
 - Biogas from digestion of sludge = **D3** (cellulosic, highest value)
 - Biogas from digestion of food waste = **D5** (advanced biofuel, lowest value)

- Not a White House Administration priority for next 1-2 years:
 - If co-digesting with food waste, eligible for only D5 RINs

- New federal efforts that could re-open discussions!
 - DOE Secretary (Rick Perry) announces "grand challenge" in water-energy nexus space through competition seeking to double resources—nitrogen, phosphorus, energy and reuse water – **recovered from municipal wastewater by 2030.**
 - New joint initiative "Winning on Reducing Food Waste" signed Oct 18th by USEPA, FDA, and USDA - acting EPA Administrator Andrew Wheeler stated, "Redirecting excess food to people, animals, or **energy production** has tremendous economic and social benefits."

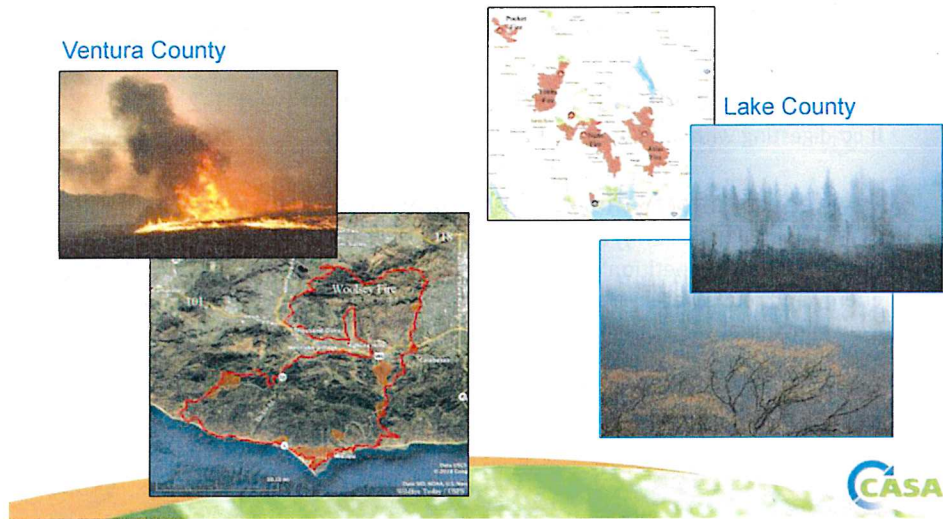


N₂O emissions from WWTPs - timeline to update ARB's GHG inventory



Biosolids and Fire Reclamation Efforts

- Received \$82,500 from agency contributions
- Active efforts underway to identify sites across the state!



Conferences/Events

- **CASA Winter Conference**
Jan 23 – 25, Indian Wells
- **California Bioresources Economy Summit**
Jan 29 – 30, Berkeley (Full, but can attend via webcast)
- **NACWA Winter Conference**
Feb 5-8, Albuquerque
- **CASA Policy Forum**
Feb 25 - 27, Washington, D.C.
- **Rethink Methane Symposium**
February 26 – 27, Sacramento



Next Meetings

- **February 14th, 10:30 am – 1:30 pm**
Hosting in Orange County

Thanks for Joining!

