Infrastructure LA Sustainable Waste and Recycling Management

Thank you for joining us the meeting will start in a few moments REMINDERS

- Please mute your line during the call
- There will be Q&A opportunities at the end of the presentations
 - Use the chat feature to ask questions and comments
- You can also raise your hand during the Q&A and we will call on you to unmute and share
 - The meeting is scheduled for one and a half hours





Infrastructure LA Sustainable Waste and Recycling Management October Committee Meeting

Infrastructure LA Sustainable Waste and Recycling Management



Will Chen
Manager, Energy Recovery
LA County Sanitation Districts
Chair – SWARM Committee

WChen@lacsd.org



Emiko Thompson

Assistant Deputy Director, Environmental Programs Division
LA County Public Works
Vice Chair – SWARM Committee

EThompson@pw.lacounty.gov



Infrastructure LA Sustainable Waste and Recycling Management

Senate Bill 1383 Procurement



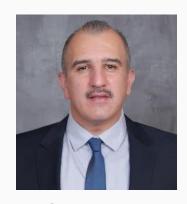
April Hamud Senior Project Manager HF&H Consultants

ahamud@hfh-consultants.com



Mark Ladney
Senior Program Specialist
City of Garden Grove

markla@ggcity.org



Cesar Leon
Solid Waste Planning Director
Tetra Tech

cesar.leon@tetratech.com



Erica Alvarado

Director – Air Quality and Transportation
Tetra Tech

erica.alvarado@tetratech.com





SB 1383 ROWP PROCUREMENT: NEW STRATEGIES TO REACH THE END ZONE

Presented to SWARM Infrastructure LA
October 9, 2024

April Hamud
Senior Project Manager
HF&H Consultants



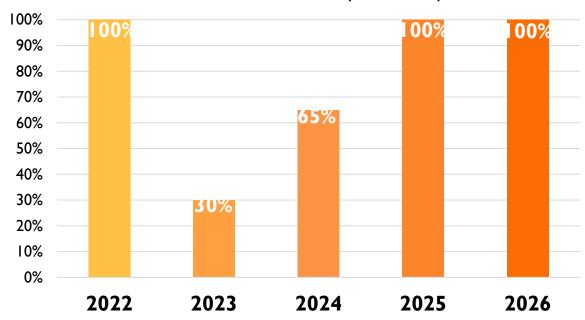
PREVIEW

- Laws Shifting the ROWP Goalpost
- Expanded List of Recovered Organic Waste Products (ROWP)
- How are Jurisdictions Reaching their ROWP Targets?
- Procurement Brokers
- Costs and Funding
- Additional Considerations





Phase-In of Procurement Compliance Requirement





- Signed by Governor on 9/22/24
- Extends the rural exemption (organic waste collection and procurement target requirements) from 2027 to 2037 with 5-year renewal periods thereafter.
 - "Rural county" means a county that has a total population of less than 70,000 persons.
- Excludes the residents covered by a low population waiver or elevation waiver from being counted in the population for the ROWP target calculation



- Signed by Governor on 9/27/24
- Expands ROWP procurement methods*:
 - Compost from small composting facilities (<100 cy and 750 sq ft)
 - Vermicomposting
 - Mushroom composting



*Jurisdiction must have an ordinance or other enforceable mechanism requiring compost and vermicompost to be used in a manner that meets the definition of "land application" in 14 CCR Section 17852(A)(24.5)(a) and that meets the pathogen, metals, and physical contamination limits that apply to existing composting facilities.



- Up to 10% of the procurement target through the following:
 - Mulch produced from jurisdictions' tree trimming operations and applied to public landscape or given away to residents
 - Recovered edible food from commercial food generators (I ton recovered edible food = I ROWP ton)
- Up to 10% of the procurement target through the following expenditures until 12/31/2035 (\$21.38 investments = 1ROWP ton):
 - Investments for development of community composting operations
 - Equipment for application of compost or mulch





Expands ROWP procurement methods:

- Allows procurement without a DSP agreement, under certain circumstances (e.g., WELO, private projects that are required to comply with jurisdiction's municipal code)
- Can calculate per capita procurement target using local waste characterization study performed within the past 5-years
- Option to convert to 5-year procurement target starting 1/1/2027



Statewide ROWP per capita calculation:

(25,043,272 organics tons* x 13% Govt GDP share) = 0.08 tons/person 42,066,880 statewide population

*Tons of organics required to recover by 2025 to meet the 75% organic waste disposal reduction target mandated by SB 1383.



EXPANDED LIST OF RECOVERED ORGANIC WASTE PRODUCTS (ROWP)

Products <u>made from California</u>, landfill-diverted, recovered organic waste processed at a permitted or otherwise authorized operation or facility.

- Mulch
- Compost
- Electricity from Biomass Conversion or RNG
- Heat from RNG
- Transportation Fuel from RNG

AB 2346 Additions:

- Mulch from jurisdiction's tree trimmings (I)
- Vermicompost, Mushroom Compost, and Compost from small operations
- Recovered edible food from commercial food generators (I)
- Compost/mulch operation investments and equipment costs (2)



- (I) Combined total capped at 10% of procurement target.
- (2) Capped at 10% of procurement target.



ROWP PROCUREMENT TARGET

ROWP procurement target based on jurisdiction population (14 CCR Section 18993.1(c)(1))

$$100,\!000~people~\times~\frac{0.08~tons~of~organic~waste}{person} = 8,\!000~tons~of~organic~waste$$

Conversion Factors

1 Ton of Organic Waste in a Procurement Target Shall Constitute:

Recovered Organic Waste Product	¥	Quantity -	Unit ▼
Renewable Gas in the form of Transportation Fuel		21	DGE
Electricity from Renewable Gas		242	kWh
Heat from Renewable Gas		22	therms
Electricity from Biomass Conversion		650	kWh
Compost		0.58	tons
Compost		1.45	cubic yards
Mulch		1	ton

Recovered Organic Waste Product Equivalents per AB 2346	Quantity	Unit
Recovered Edible Food from Commercial Food Generators	1	ton
Investments/Equipment for Compost	21.38	dollars



COMPOST PROCUREMENT BY POPULATION (100% TARGET)

Mr. Owl, how many truckloads does it take to reach your jurisdiction's procurement target?



Let's find out...

Photo Credit: Tootsie Roll

Population	Compost (cubic yards)	Compost (Tons)	Truckloads of Compost*
10,000	1,160	464	58
50,000	5,800	2,320	290
100,000	11,600	4,640	580
500,000	58,000	23,200	2,900
1,000,000	116,000	46,400	5,800





How are jurisdictions reaching their ROWP targets?

COMPLIANCE METHODS

Directly procuring ROWP for use or giveaway

METHOD I*



Requiring a direct service provider (end-user) to the jurisdiction procure ROWP

METHOD 2*





*Per 14 CCR Section 18993.1(e).

EXAMPLES OF DSP AGREEMENTS

■ Hauler Franchise Agreements

- Require hauler to procure ROWP on behalf of the jurisdiction
 - Compost Giveaways
 - Use of RNG produced from Permitted Facilities

Landscaper Agreements

- "Purchaser agrees to procure and use recovered organic waste product(s) on behalf of the City for the purpose of facilitating City compliance with recovered organic waste product procurement (ROWP) requirements of Senate Bill 1383, as described in the California Code of Regulations Title 14, Division 7, Chapter 12, Article 12."
- End-Users Through Procurement Brokers



FREE COMPOST AND MULCH

OCWR Greeneries

- Free pick-up of compost/mulch in bulk, bags, and wattles upon jurisdiction's request
- Produced over 2,300 wattles in 2024 YTD
- Transportation at cost of jurisdiction
- Opportunity for jurisdictions' direct service providers (e.g., landscapers)
- Haulers can back-haul compost/mulch





REQUEST FOR PROPOSALS/QUOTES FOR ROWP PROCUREMENT

Cities Requesting ROWP products:

- Corona
- Fremont
- Garden Grove
- Oakland
- San Ramon
- Sunnyvale

Facility Requesting Offers:

- LACSD A.K.Warren Facility (Carson)
 - Produces and uses ROWP (electricity) on site.
 - LACSD is requesting procurement bids to establish Direct Service Provider (DSP) Agreements
 - Questions due 10/11/24
 - Bids due 10/23/24





Procurement Brokers

COMPOST BROKER AGREEMENTS

What does a compost broker do?

- Find ROWP and/or end user.
- Establish a DSP agreement between jurisdiction and end user.
- Maintain and provide records of procurement (e.g., invoices with quantity and product type purchased)







EXAMPLES OF COMPOST BROKERS

I. Agromin

- Largest organic materials processor in the state
- Procurement calculator on their portal: <u>CaliforniaCompost.net</u>

2. Zero Foodprint

- Non-profit organization that uses funds from its ZFP member businesses to fund healthy soil projects
- Map of composting facilities on Zerofoodprint.org/sb1383

3. Synagro

- Four biosolids composting facilities in CA
- 4. Other Composting Facilities / Haulers



PROCUREMENT COMPLIANCE ATTRIBUTES (PCA)

- Jurisdictions can claim the SB 1383-eligible product's **procurement** compliance attribute (PCA) to meet their procurement target
 - Biomass-to-electricity facilities that receive SB 1383 eligible feedstock from permitted facilities
 - RNG processed at an in-vessel digestion facility
- Amount procured cannot exceed the amount that the jurisdiction consumes from the utility for its municipal operations*
- PCAs generated in the calendar year can be procured until the end of each year
- Example: PCA Agreement between County of Riverside and Greenleaf for 2023 Procurement Compliance



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EXAMPLES OF PCA BROKERS

I. Anaergia

- Socal Biomethane (produces RNG)
- Sterling Natural Resource Center (produces electricity used onsite)

2. Valinor Energy

Broker for several biomass-toelectricity facilities

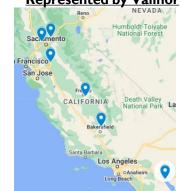
3. Sevana

Acquired Rialto facility



Brokers	2024 ROWP Tons	Population Equivalent (2024)	
Anaergia			
Socal Biomethane	15,000	288,000	
Valinor Energy			
(Biomass Facilities)	650,000	12,500,000	

Biomass Conversion Facilities Represented by Valinor





ESTIMATED COSTS

Broker Agreements for Compost / Mulch

■ \$14 - \$50/compost ton subsidy from jurisdiction, and farmers will pay for remaining costs (estimated total cost to farmer is approximately \$75 / ton to purchase, haul, and spread compost)

PCA Agreements (from Biomass Conversion Facility and AD facility)

■ \$9 - \$12/ROWP ton

Estimated Annual Costs (at 100% Procurement

Population	Compost/Mulch Brokers				PCA Brokers			
Population		Low		High		Low		High
10,000	\$	6,000	\$	23,000	\$	7,000	\$	10,000
50,000	\$	32,000	\$	116,000	\$	36,000	\$	48,000
100,000	\$	65,000	\$	232,000	\$	72,000	\$	96,000
500,000	\$	325,000	\$	1,160,000	\$	360,000	\$	480,000
1,000,000	\$	650,000	\$	2,320,000	\$	720,000	\$	960,000



FUNDING SOURCES

- SB 1383 Local Assistance Grant Funds
- Franchise Agreements
- **■** General Fund
- Other Grants





ADDITIONAL CONSIDERATIONS

Verify

- Request CalRecycle SWIS Facility Permit Number (if applicable) to confirm source of ROWP is SB 1383-eligible
- Request photo documentation of compost/mulch projects to confirm proper usage

Timing

- Farmers' compost needs vary by season (high usage in Fall)
- PCA brokers can sell annual amount of PCAs until the end of each year
- DSP Agreements are intended be in place prospectively (signed in advance)



THANK YOU!



April Hamud Senior Project Manager <u>ahamud@hfh-consultants.com</u> (949) 251-8586







Laith Ezzet
Senior Vice President
lezzet@hfh-consultants.com
(949) 251-8902



Infrastructure LA Sustainable Waste and Recycling Management

Senate Bill 1383 Procurement



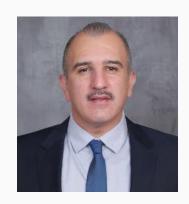
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Mark Ladney
Senior Program Specialist
City of Garden Grove

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cesar.leon@tetratech.com



Erica Alvarado

Director – Air Quality and Transportation
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erica.alvarado@tetratech.com



Garden Grove Procurement



- Population: 172,000 (State)
 - 175,000 (City)
- Size: 17.98 Square Miles
- Procurement Target (100%): 13,980 Tons
 - 8,002 Tons Compost
 - 400 Semi-Truck loads of compost (50 CY)
 - 2,500 Dump Truck loads (8 CY)



The Process – The Beginning Stages

Internally Identified who largest user could be: Park Maintenance Section (Parks, Medians, Other Landscaped Areas)

- Compost
 - Where can it be used
 - 18 Parks (140 acres, .22 sq mile)
 - Would Need to create Turf Maintenance Program
 - Park Space Accommodate 5k Tons, leaving an extra 3k
 - New/Rehab Planting Projects
 - Equipment
 - Tractors/Spreaders
 - Can it be easily acquired or rented?
 - Within budget amount or is it a fleet addition?

- Mulch
 - Where can it be used
 - Planters/Flower beds
 - Medians
- Other Considerations
 - Use of Existing Contractors
 - Staff (12 FTE Park Staff filled)
 - Budget Concerns
 - Contract Amounts/Limitations
 - 2025 and beyond
 - Transportation/Storage

Exploration of other ROWP Options

- RNG for Transportation (87,000 DGE)
 - Natural Gas Provider: SoCal Gas
 - Onsite CNG Fueling Station
 - Use of RNG for Transportation is less than 2.5% of 2025 Procurement amount
 - SoCal Gas plans on injecting RNG into their system in the future (2022/2023)
 - CA Public Utilities Commission Regulator issues
 - The RNG will not be SB1383 compliant as it will not all come from California

- RNG Other Uses
 - Electricity (Purchase Credit)
 - Heating
- BioMass Electricity (Purchase Credit)
- Use of RNG at Water Pump Stations
 - Safety/Supply/Cost Concerns
 - Reliability during Emergencies
 - Cost to hook up/install new connection
 - AQMD Emissions Permits
 - Equipment Able to handle RNG



LHC	T/	חר	v.

Period	Therms Used
reliou	memis oseu
Current	843
May 2024	837
Apr 2024	1,078
Mar 2024	957
Feb 2024	1,020
Jan 2024	653
Dec 2023	543
Nov 2023	557
Oct 2023	586
Sep 2023	728
Aug 2023	985
Jul 2023	681

Non-Park Maintenance Options for Use of Compost and Mulch

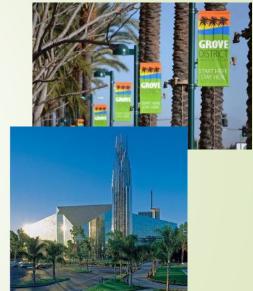
City Side

- City-Owned golf course
- Compost Giveaway
 - "Dumpster Day" Events
 - Annual Compost Giveaway
 - ₹ 24/7 Compost Pick up lot

Special Projects (One-time Use)

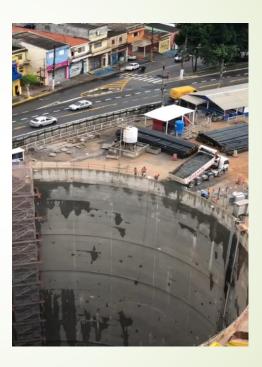
- CalTrans Clean California Grant
- P3 Project (Police, Parking, Park)

- Partner with local Private Industry
 - Has not been successful
 - Work with Community/Economic Development Areas to identify
 - Large Existing Developments with large landscaped areas
 - Re-development projects
 - Local School District
 - Purchase/Share with Agriculture



Garden Grove' Procurement Plan

- General City use:
 - OC Landfills Greeneries Program
 - Cost: Free, not including transportation
- Community Giveaway
 - Dumpster Day Events
 - About 5 tons/event
 - Annual Compost Giveaway
 - About 16 tons
 - Agriculture "Donation"
 - Our 2022 Franchise Agreement allows for the purchase/Diversion of Compost/Mulch through our waste hauler
 - RFP



Compost Procurement RFP

- Conduct RFP to send Compost to Agriculture
 - Due to large amount of compost needed and City Purchasing limits
 - Scope of Work was about One Page
 - Re-iterated SB 1383 Regulations
 - DSP
 - Compost to be SB 1383
 Compliant
 - Transportation
 - Provide all relevant information needed per the regulations
 - Includes pricing options for 2025 and 2026

- Is it a Gift of Public Funds?
 - Regulations State "For Use or Giveaway"
 - Check with legal council for their interpretation
 - Our attorney says as long as we try to use the material locally we can send remainder to agriculture
- Most of the RFP Award was based on price
- Due to competitiveness, it was the best option for us as pricing came in below what we were quoted outside of process

RFP Scope of Work

- Cut and Paste language from Regulations
- Reference Additional Regulations by CCR Code Number
- Documentation that the compost meets the guidelines provided above and the facility name, physical location, SWIS Facility Number and contact information where the compost was procured from.

- DSP Contractor to do all DSP legwork on behalf of City
- Include Transportation
- Provide written documentation to confirm the dates that the compost was delivered, amount delivered, where it was delivered to, and how it was use
- Multi-year pricing/options
- Include in RFP Specs if compost can contain bio-solids (Per SB 1383 it can)

2023 Procurement CalRecycle Procurement Calculator Tool

Jurisdiction Name (City, County, or City and County): CITY OF GARDEN GROVE	Reporting Year: 2023		
Fulfillment of Procurement Target			
99.67%	,		
77.0/%	0		
Procurement Target (Tons): 4,139.4	Total Tons Procured: 4,131.0	Tons Remaining: 8.0	
Total Procurement for the Reporting Year			
Recovered Organic Waste Product	Reporting Year Total	Unit	
Renewable Gas in the form of Transportation Fuel	0.0	DGE	
Electricity from Renewable Gas	0.0kWh		
Heat from Renewable Gas	0.0 therms		
Electricity from Biomass Conversion	350,000.0kWh		
Compost (tons)	2,063.4 tons		
Compost (cubic yards)	50.0 cubic yards		
Mulch	0.0 tons		



Mark Ladney Sr. Program Specialist

Markla@ggcity.org 714-741-5372

Senate Bill 1383 Procurement



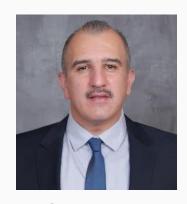
April Hamud Senior Project Manager HF&H Consultants

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cesar.leon@tetratech.com



Erica Alvarado

Director – Air Quality and Transportation
Tetra Tech

erica.alvarado@tetratech.com







SB 1383 Renewable Gas (RNG) Procurement



Los Angeles County Public Works Environmental Programs Division

INFRASTRUCTURE

SWARM Infrastructure LA

October 9, 2024



Agenda

- Introductions
- SB 1383 Procurement Requirements
 - CalRecycle Definitions
 - 14 CCR § 18993.1 RNG Procurement Requirements
- Opportunities and Challenges for RNG Procurement
- Q&A



Introduction





Cesar LeonSolid Waste Planning Director
Transportation
cesar.leon@tetratech.com

Erica Alvarado, D.Env., MPH Director, Air Quality and

CARB GHG and LCFS Lead Verifier erica.alvarado@tetratech.com





- "Recovered organic waste products"
 (ROWP) means products made from
 California, landfill-diverted recovered organic
 waste processed at a permitted or otherwise
 authorized operation or facility.
- "Renewable gas" means gas derived from organic waste that has been diverted from a landfill and processed at an in-vessel digestion facility that is permitted or otherwise authorized by Title 14 to recover organic waste.



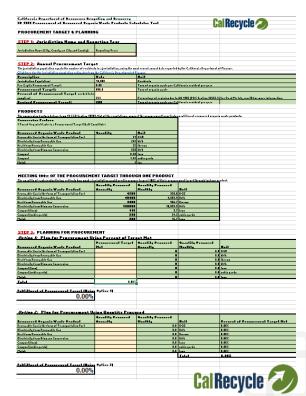


SB 1383 Procurement Requirements 14 CCR § 18993.1

- Annual Procurement Target



- January 1, 2022 Jurisdictions are to procure recovered organic waste products to meet an annual procurement target.
- Procurement target for 2022 will be in place for 5 years
- Combinations of one or more products to fulfill 100 percent of its procurement targets allowed
 - CalRecycle Procurement Calculator Tool can be used to calculate the quantities of products a jurisdiction is required to procure.



SB 1383 Procurement Requirements 14 CCR § 18993.1(j) – Annual Procurement Target



Option 2: Adjusted ROWP procurement target based on previous calendar year's procurement of energy products for municipal operations

- 1. Gather bills for municipal operations from the previous year:
 - Electricity (Traffic lights, government buildings)
 - Gas for Heating Applications (Government Buildings)
 - Transportation Fuel (Fleets)
- 2. Convert the total amount procured to the organic waste equivalent
 - (ROWP tons)



SB 1383 Procurement Requirements 14 CCR § 18993.1(f)



- 14 CCR § 18993.1(f) **ROWP** that a jurisdiction may procure to comply includes:
 - Compost
 - Produced at a permitted compostable handling operation or facility
 - Mulch
 - Produced at a permitted compostable handling operation or facility, a transfer/processing operation, or solid waste landfill.
 - Renewable gas used for transportation fuel, electricity, or heating applications
 - Electricity from biomass conversion





Conversion Factors 14 CCR § 18993.1(g)



- One ton of organic waste in a ROWP (i.e., RNG) procurement target shall constitute:
 - A. 21 diesel gallon equivalents, or "DGE," of renewable gas in the form of transportation fuel.
 - B. 242 kilowatt-hours of electricity derived from renewable gas.
 - C. 22 therms for heating derived from renewable gas.



SB 1383 Procurement Requirements 14 CCR § 18993.1(h)

TETRA TECH

- 14 CCR § 18993.1(h) Renewable gas procured from POTW may only count per the following conditions:
 - 1) The POTW receives organic waste directly from one or more of the following:
 - A. Compostable material handling facility or operation
 - B. Transfer/processing facility or operation
 - C. Landfill
 - 2) The POTW is in compliance with exclusions described in § 17896.6(a)(1).
 - 3) Jurisdiction receives tonnage records, from the POTW, documenting tons of organic waste received by the POTW from entities listed above in item 1.
 - 4) Amount of renewable gas procured by jurisdictions procured from POTW is less than or equal to the POTW's production capacity of renewable gas generated from organic waste received from solid waste facilities.
 - 5) The POTW transported less than 25 percent of the biosolids it produced to activities that constitute landfill disposal. (Less than 50 percent disposal of biosolids in CY 2022 to CY 2024 per AB 1985)





Existing and Planned Facilities

Anaerobic Digestion (AD) Facilities and Publicly Owned Treatment Works (POTWs) in CA







AD Facilities

POTW's







Opportunities and Challenges for SB 1383 RNG Procurement

Questions/Inquiries



• Item #1:

The amount of RNG and/or RNG-derived electricity available to local jurisdictions for compliance with requirements of SB 1383.

• Item#2:

Challenges and opportunities for jurisdictions to procure RNG-derived electricity to meet SB 1383 requirements including providing this energy through a Community Choice Aggregate to the City's/CCA's customers (rather than for use in County operations).

• Item #3:

How do the markets work for renewable energy credits (RECs), the SB 1383 procurement compliance attributes (PCAs), and the California Air Resources Board (CARB) GHG emission credits?

• Item #4:

Do the same molecules of RNG generate both PCAs, RECs, and CARB GHG emission credits? Is there a relationship between these various credits?

• Item #5:

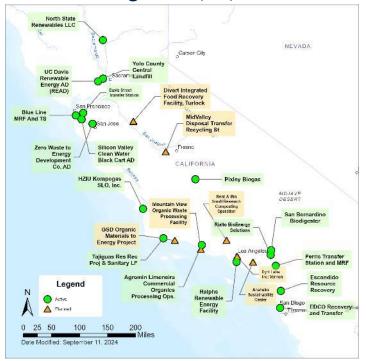
What is the best approach for jurisdictions that are interested in procuring the actual RNG-derived electricity as well both the RECs and the PCAs?

Item #1:

The amount of RNG and/or RNG-derived electricity available to local jurisdictions for compliance with requirements of SB 1383.



Anaerobic Digestion (AD) Facilities and Publicly Owned Treatment Works (POTWs) in CA







AD Facilities

POTW's

Item #1:

The amount of RNG and/or RNG-derived electricity available to local jurisdictions for compliance with requirements of SB 1383.



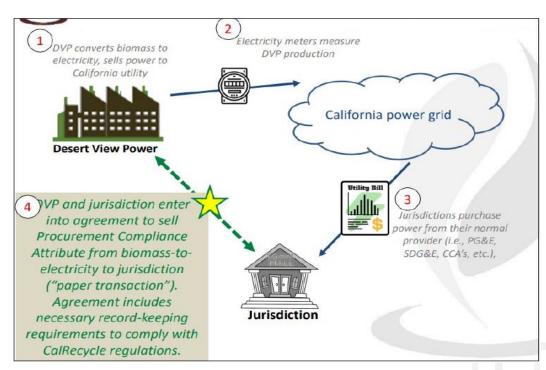
01	CALIFORNIA ENERGY COMMISSION			Please Select	
			SION	Biomass	
U.G	ACCT MGMT	SEARCH		Biomass Black Liquor	
				Biomass Conversion	
California's Renewables Portfolio Standard (RPS) Public Search Օր			Biomethane		
			Conduit Hydroelectric		
To begin your search enter application or facility criteria and click search. Use the additional fields if neces			Conduit Hydroelectric with Efficiency		
Questions can be directed to rpstrack@energy.ca.gov. Search Instructions are also available.			Fuel Cell - Biomethane		
Application Status Definitions:			Fuel Cell - Hydrogen Produced Renewably		
Approved: The facility is approved and either certification or precertification has been granted. Received: The application has been received but has not yet been reviewed. Pending: The application is under review; Energy Commission staff may make further inquiries or request Corrections: Staff has requested more information or clarification from the applicant; the review will not be provided. Disapproved: The facility is not eligible for California's RPS. If the facility had been previously certified, gress depending on the circumstances of disapproval. Withdrawn: The applicant for the facility has withdrawn the application or the applicant has requested an Incomplete: The application has been deemed incomplete. The facility is ineligible for the RPS unless the Decommissioned: The facility has ceased to operate, as confirmed by the applicant or the Energy Commissioned:			Geothermal		
			Existing Large Incremental Hydroelectric		
			Ocean Thermal		
			Ocean Wave		
			Photovoltaic		
Please Note: The Energy Commission's RPS certification of a facility means the facility can produce electrical generation satisfy its RPS procurement requirements. Generation from certified facilities that is produced in the mon WREGIS, may be used to meet RPS obligations, subject to all applicable procurement restrictions. Gene Certification Type column are only eligible to meet the RPS obligations of the retail seller that certified the			Small Hydroelectric		
			Solar Thermal Electric		
			Tidal Current		
RPS ID	Suffix	Facility Name	Application Status	Wind	
	Please Select v		Please Select V	Please Select V	
Search					



Electricity from Biomass Conversion – Compliance Requirements



- Written certification
 - biomass feedstocks received directly from allowable facilities
- Required documentation from biomass conversion electricity to show:
 - No duplicate sales or double counting
 - Quantity not greater than actual generated supply
 - Total not exceed amount used in actual operations



Desert View Power (DVP), Mecca, CA reports can assist with procurement for 6% of the state population

Item#2:

Challenges and opportunities for jurisdictions to procure RNG-derived electricity to meet SB 1383 requirements including providing this energy through a Community Choice Aggregate to the City's/CCA's customers (rather than for use in County operations).



• CCA:

- Allows cities/counties/other qualifying governmental entities available within the service areas of investor-owned utilities (IOUs), to purchase and/or generate electricity for their residents and businesses.
- Two+ cities or counties may participate in a CCA program as a group through a Joint Powers agency.
- Can also be formed by a single city, such as those operated by the cities of San Francisco and San Jose.

• Opportunities:

- Opportunity for the local government (or other related entity) to set up a CCA (or utilize a current one), which may then enter into the PPA on the entity's behalf
- If identify correct location, could provide a reliable source to help meet the SB 1383 requirements
- Long term contracting could eliminate need to identify new sources



Item#2:

Challenges and opportunities for jurisdictions to procure RNG-derived electricity to meet SB 1383 requirements including providing this energy through a Community Choice Aggregate to the City's/CCA's customers (rather than for use in County operations).



- Challenges:
 - Identifying locations:
 - Biomass direct-haul from forest and agriculture sources do not meet SB 1383 requirements
 - Facilities must meet requirements of 14 CCR Section 18993.1(i)
 - A compostable material handling operation or facility as defined in Section 17852(a)(12), other than a chipping and grinding operation or facility as defined in Section 17852(a)(10), that is permitted or authorized under this division; or
 - A transfer/processing facility or transfer/processing operation as defined in Sections <u>17402</u>(a)(30) and (31), respectively, that is permitted or authorized under this division; or
 - A solid waste landfill as defined in Public Resources Code Section 40195.1 that is permitted under Division 2 of <u>Title 27</u> of the California Code of Regulations.
 - Double counting
 - Tracking amount procured versus the amount the jurisdiction consumes from the utility for its municipal operations

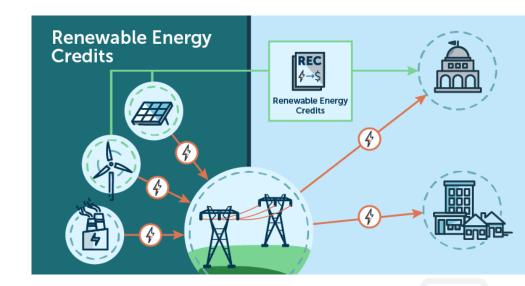
Item #3:

How do the markets work for renewable energy credits (RECs), the SB 1383 procurement compliance attributes (PCAs), and the California Air Resources Board (CARB) GHG emission credits?

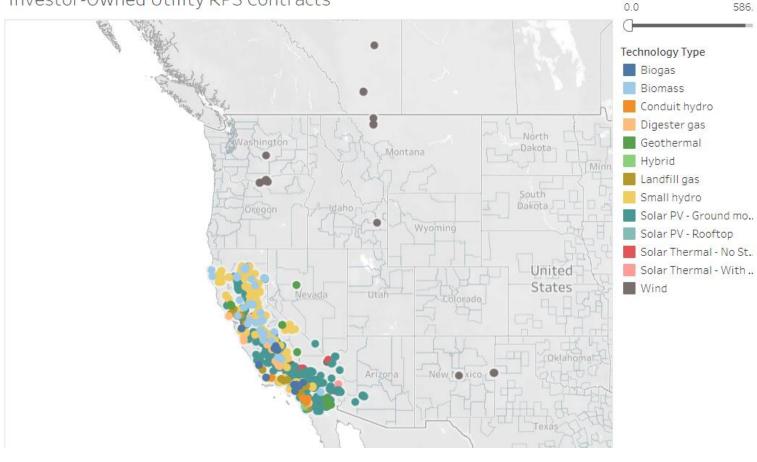


• RECs/RPS:

- To claim the environmental and non-power attributes of renewable electricity, a supplier/local government/etc. must own the RECs, whether generated from a project the entity/government owns or purchased from a project that is owned and operated by a third party.
- Can be purchased with the electricity using a contract (Power Purchase Agreement) or generated locally
- When a claim is made on the environmental and non-power attributes of a REC, the REC is "retired" and cannot be used to claim renewable electricity use by another party. (WREGIS tracks RECs in the Western Interconnection territory)



Investor-Owned Utility RPS Contracts



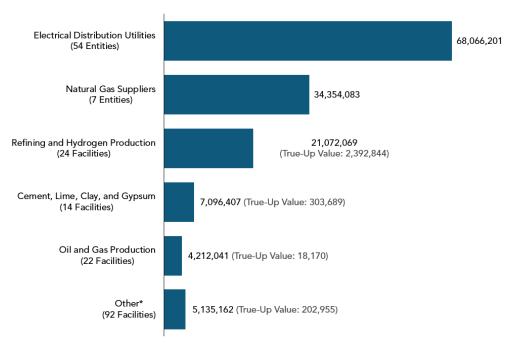


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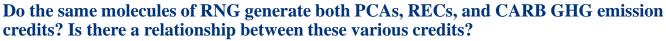
CARB GHG Emission Credits





- CARB creates allowances equal to the total amount of permissible emissions (i.e., the "cap")
- Covered entities may acquire allowances through auction, limited free allocation (for eligible entities), and by trading with other entities in the Program (i.e., the "trade").
- A majority of allowances are made available through quarterly allowance auctions.
- Regulated entities must surrender allowances, and a limited number of offset credits, to cover their emissions.

Item #4:





- RNG can be reported as renewable energy in CARB's GHG reporting. This emissions source must be validated to be reported as such.
 - Example: book-and-claim, affidavits, contracts
- Reported RNG as a renewable energy source does not count towards the facilities compliance
- RNG for RECs would be purchased as renewable energy and is separate from reporting to CARB's GHG program
- This counts to serve as a claim of renewable energy purchase/use
- The RECs are reported to CARB by total MWh's
 - Must include vintage, retirement
- PCA credits have similar requirements to CARB emissions reporting
 - Need to check feedstock source

Item #5:

What is the best approach for jurisdictions that are interested in procuring the actual RNG-derived electricity as well both the RECs and the PCAs?



Identify
Total
Need

Identify
Facility(ies
) and
Available
Canacity
for SE

Identify End Users and Partners



Determine
Contractual,
Tracking, and
Reporting
Requirement

Conduct Cost Benefit Analysis



Enter Into Procurement Agreement





Item #5:





- As mentioned previous, CCA's may enter in PPA's on the participants behalf (for REC purchase)
 - Beneficial as a group approach
- Depends on priority of the fuels use
- RECs and RPS Adjustments are subject to multiple regulatory requirements to avoid double counting
 - Check with CARB and REC generating facility
- Ensure backup documentation is substantiated
- Ensure no double counting
- RECs are usually under long term contract or partial ownership
 - Often for electric power entities

Questions?





Cesar LeonSolid Waste Planning Director Transportation cesar.leon@tetratech.com

Erica Alvarado, D.Env., MPH Director, Air Quality and

CARB GHG and LCFS Lead Verifier erica.alvarado@tetratech.com

Senate Bill 1383 Procurement



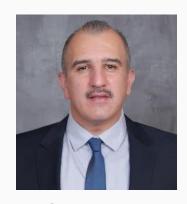
April Hamud Senior Project Manager HF&H Consultants

ahamud@hfh-consultants.com



Mark Ladney
Senior Program Specialist
City of Garden Grove

markla@ggcity.org



Cesar Leon
Solid Waste Planning Director
Tetra Tech

cesar.leon@tetratech.com



Erica Alvarado

Director – Air Quality and Transportation
Tetra Tech

erica.alvarado@tetratech.com







Senate Bill 1383 Procurement



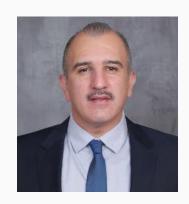
April Hamud Senior Project Manager HF&H Consultants

ahamud@hfh-consultants.com



Mark Ladney
Senior Program Specialist
City of Garden Grove

markla@ggcity.org



Cesar Leon
Solid Waste Planning Director
Tetra Tech

cesar.leon@tetratech.com



Erica Alvarado

Director – Air Quality and Transportation
Tetra Tech

erica.alvarado@tetratech.com



Thank you for joining today's call!

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