

January 17, 2017

Mary Nichols, Chair  
California Air Resources Board  
1001 "I" Street  
Sacramento, CA 95814

Submitted electronically:  
[https://www.arb.ca.gov/lispub/comm/bcsubform.php?listname=2016slcp&comm\\_period=N](https://www.arb.ca.gov/lispub/comm/bcsubform.php?listname=2016slcp&comm_period=N)

Re: East Bay Municipal Utility District Comments Regarding the Proposed Short Lived  
Climate Pollutant Reduction Strategy

Dear Chairman Nichols and Board Members:

The East Bay Municipal Utility District (EBMUD) appreciates the opportunity to comment on the Proposed Short Lived Climate Pollutant (SLCP) Reduction Strategy (Proposed Strategy). EBMUD provides wastewater services to approximately 650,000 customers in the eastern San Francisco Bay Area, and we take pride in being a leader in sustainable organics management. Over the last thirteen years, EBMUD's Resource Recovery Program has treated a variety of trucked industrial organic wastes in its existing anaerobic digesters. Due to the increase in digester methane production from these organic wastes, in 2012 EBMUD became the first wastewater treatment plant in North America to become a net energy producer, with excess renewable energy sold back to the electrical grid. EBMUD's codigestion efforts have provided a model for other wastewater treatment agencies and a powerful demonstration of the opportunities that codigestion provides for achieving the state's greenhouse gas reduction goals.

EBMUD supports the Proposed Strategy, and in particular, its recognition of codigestion of organics at wastewater treatment plants as a solution for SLCPs. As discussed below, EBMUD strongly believes that food waste codigestion at wastewater treatment plants is an important strategy for reducing methane emissions from organic waste specifically, and for further reducing greenhouse gas emissions by producing of renewable energy from the captured methane.

EBMUD echoes the comments submitted by the California Association of Sanitation Agencies, and we also wanted to share our unique perspective as an agency with significant experience codigesting organic wastes at a wastewater treatment plant. In our experience, more robust support from ARB and other state agencies – in the form of regulatory action, financial assistance, and market incentives – will be needed in order to realize this great potential. We

look forward to working with ARB on overcoming current barriers to codigestion projects. Our specific comments on the Proposed Strategy follow.

**Expanding organics codigestion at wastewater treatment facilities is more environmentally sustainable than other organics processing options.** The SLCP proposes both compost and anaerobic digestion as alternatives for food waste management, but it should emphasize that anaerobic digestion (AD) is the preferred method of food waste management because:

- AD allows the energy value of food waste to be extracted as biogas and used to produce renewable electricity or renewable transportation fuel.
- Wastewater treatment plants are located within the communities where food waste is generated, reducing hauling distances and associated greenhouse gas emissions.
- Food waste presents a challenge for composting facilities due to its moisture content and potential to cause odor concerns.
- Sending food waste to AD frees up capacity in compost facilities for green waste and other, more suitable, organic materials.

The SLCP implies that AD is preferable to composting for food waste but this point should be explicitly made.

**Expanding organics codigestion at wastewater treatment facilities requires significant capital investment but will be more cost-effective than other options once all externalities are properly accounted for.** The quality shared by all the liquid organic wastes currently received at EBMUD is low contamination, making their treatment relatively easy to cost-effectively incorporate into normal operations. The 15 tons per ton day of solid food waste that EBMUD accepts is ground, without contamination removal at an offsite facility, so that it is delivered as paste. The contamination present in this material presents operational difficulties, and in order to accept more solid food waste, EBMUD or a third party would need to make significant investments in contamination removal “pre-processing” equipment. EBMUD has aggressively worked to expand its solid food waste digestion program, but these efforts have been stymied, largely because of the high capital costs for program expansion to handle food wastes with higher levels of contamination.

Based on our extensive experience trying to develop an expanded food waste digestion project, we believe that the capital cost estimate shown in Appendix F for constructing organic processing and biogas upgrading facilities underestimates costs and is overly optimistic on revenue assumptions (see Table 28 for costs and revenues at existing wastewater treatment facilities and the similar Table 30 for costs at new anaerobic digestion facilities). A significant source of these discrepancies appears to be that these cost summaries, and the SLCP as a whole, do not adequately account for the very significant capital and operating costs associated with

removing non-biodegradable contamination (plastic bags, metal utensils, food and beverage containers, etc.) from post-consumer food waste. For EBMUD, the high cost of pre-processing has proven to be the single most important issue making further expansion of the R2 facilities not financially viable. Pre-processing could be conducted at wastewater treatment facilities (with new infrastructure and as allowed by site conditions) or at offsite facilities (generally also new infrastructure, potentially at existing solid waste facilities such as transfer stations). However, both the significant capital investment required, and the need for a very large project to achieve economies of scale, make the risk significant for whichever party is responsible for constructing and operating that equipment. In addition to revising the costs in Appendix F, EBMUD suggests identifying food waste pre-processing costs as another barrier to be addressed collaboratively in Section V.B.4 of the Proposed Strategy.

While pre-processing costs are common to both new AD and wastewater treatment plant codigestion projects, costs for new AD are even higher when costs for new wastewater treatment needs are considered. The cost summary for new anaerobic digestion facilities (Table 30) does not include the cost for treatment of the liquid waste stream that results from the dewatering of the digestate (the non-gaseous product of anaerobic digestion), which is typically done at anaerobic digestion facilities to reduce weight and bulk prior to transportation. In addition to the excess digester capacity available at many California wastewater treatment plants, another advantage of digesting organic waste at existing facilities versus new facilities is that this liquid waste stream can be cost-effectively treated through the existing treatment plant infrastructure. A new anaerobic digestion facility must either build its own wastewater treatment plant (a substantial capital cost) or discharge to the local sewer (a significant operating cost due to capacity charges, if allowed by the local wastewater agency).

**More funding and policy support is needed for wastewater agencies to move forward with codigestion projects.** EBMUD, like all publically-owned wastewater treatment plants, cannot make risky investments in facilities that do not serve our core mission of providing wastewater treatment services and protecting public health. Since low-cost disposal alternatives of landfill and composting are currently still available for food waste (with higher tolerance for contamination), tip fees for organics processing remain low, and therefore the revenue streams do not yet support the capital investments required to allow broader expansion of organic waste codigestion. EBMUD is interested in working with the Air Resources Board and other state agencies to identify ways to support food waste digestion projects at wastewater treatment facilities including:

- **Grant funds to help offset capital costs**, especially pre-processing (i.e., contaminant removal). EBMUD has pursued grants from the California Energy Commission, CalRecycle and other state agencies. As a multi-sector and multi-benefit project, food

waste codigestion often does not fit neatly into the existing frameworks for grant funding. For example, EBMUD has not been successful in securing grant funding from CalRecycle's organics grant program because municipalities near EBMUD such as Oakland and Berkeley currently compost their organic wastes, so taking their food waste streams to EBMUD for anaerobic digestion is not considered "new diversion" even though redirecting the food waste would free up limited composting capacity for additional organic waste and would generate renewable energy at EBMUD. Funding agencies should recognize the multiple ways that food waste codigestion projects help the state meet its SLCP and overall greenhouse gas reduction goals, and grant programs should be created specifically for codigestion projects.

- **Creating or encouraging markets with revenue streams that incentivize project development** including the sale of digester residuals as a soil amendment. Please see the comment letter from the California Association of Sanitation Agencies (CASA) for comments regarding biosolids utilization. Using market forces to turn digestate end use from a cost to a revenue stream would significantly improve the economic viability of projects like EBMUD's. The costs of biosolids management become even more of a concern as EBMUD and other wastewater agencies seek alternatives to Alternative Daily Cover as a biosolids end use.
- **Insuring against market risks associated with environmental attributes.** EBMUD agrees with the assessment in the Proposed Strategy (Appendix F) that the financial viability of codigestion projects is significantly influenced by the value of LCFS credits and the value of the Renewable Identification Numbers (RINs). EBMUD supports the development of financial mechanisms to increase certainty around market prices and allow financial relief for publically-owned wastewater facilities in the event of low environmental attribute values. This would alleviate some of the risks associated with project revenue streams and reduce the chance that wastewater agency would lose money on a codigestion project (a loss that would necessarily but unfairly be passed on to wastewater rate payers).
- **Implementing regulations that increase the costs of less environmentally desirable alternatives** (including distant composting operations) and encourage the direction of suitable organics wastes towards toward anaerobic digestion for renewable energy generation. Composting and anaerobic digestion should not be in direct market competition with each other. Composting is the best option for some organic waste (such as yard trimmings/green waste) while anaerobic digestion is the best option for other organic waste (especially food waste). The state can require and encourage a more appropriate direction for different types of organic wastes.

Mary Nichols, Chair  
January 17, 2017  
Page 5

Thank you for your consideration of these comments. Please contact us if you have any questions at (510) 287-1608 or via email at [jackie.zipkin@ebmud.com](mailto:jackie.zipkin@ebmud.com). We welcome the opportunity to further discuss and clarify these issues with ARB as appropriate, and we look forward to working with ARB staff to implement the Proposed Strategy.

Sincerely,



Bennett K. Horenstein  
Director of Wastewater

BKH:JTZ:akg