



**BOARD OF DIRECTORS
EAST BAY MUNICIPAL UTILITY DISTRICT**

375 - 11th Street, Oakland, CA 94607

Office of the Secretary: (510) 287-0440

**NOTICE OF
LOCATION CHANGE**

**SUSTAINABILITY/ENERGY
COMMITTEE MEETING**

Tuesday, October 25, 2022

9:00 a.m.

****Virtual****

In accordance with Government Code section 54953(e), **this meeting will be conducted by webinar and teleconference only.** A physical location will not be provided for this meeting.

Dated: October 20, 2022

A handwritten signature in blue ink that reads 'Rischa S. Cole'.

Rischa S. Cole

Secretary of the District

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**BOARD OF DIRECTORS
EAST BAY MUNICIPAL UTILITY DISTRICT**

375 - 11th Street, Oakland, CA 94607

Office of the Secretary: (510) 287-0440

**AGENDA
Sustainability/Energy Committee
Tuesday, October 25, 2022
9:00 a.m.
*Virtual***

Location

In accordance with Government Code section 54953(e), **this meeting will be conducted by webinar and teleconference only**. A physical location will not be provided for this meeting.

***** Please see appendix for public participation instructions*****

Committee Members: Marguerite Young {Chair}, Andy Katz, and Frank Mellon

ROLL CALL:

PUBLIC COMMENT: The Board of Directors is limited by State law to providing a brief response, asking questions for clarification, or referring a matter to staff when responding to items that are not listed on the agenda.

DETERMINATION AND DISCUSSION:

- | | |
|--|----------|
| 1. Resource Recovery Program Update | (Gray) |
| 2. Renewable Energy Update | (Briggs) |
| 3. Calendar Year 2021 Greenhouse Gas Inventory | (Briggs) |

ADJOURNMENT:

Disability Notice

If you require a disability-related modification or accommodation to participate in an EBMUD public meeting please call the Office of the Secretary (510) 287-0404. We will make reasonable arrangements to ensure accessibility. Some special equipment arrangements may require 48 hours advance notice.

Document Availability

Materials related to an item on this agenda that have been submitted to the EBMUD Board of Directors within 72 hours prior to this meeting are available for public inspection in EBMUD's Office of the Secretary at 375 11th Street, Oakland, California, during normal business hours, and can be viewed on our website at www.ebmud.com.



APPENDIX

Sustainability/Energy Committee Meeting Tuesday, October 25, 2022 9:00 a.m.

*EBMUD public Board meetings will be conducted in person in the Boardroom and via Zoom.
These meetings are recorded, live-streamed, and posted on the District's website.*

*Please visit this page beforehand to familiarize yourself with Zoom.
<https://support.zoom.us/hc/en-us/articles/201362193-Joining-a-Meeting>*

Online*

<https://ebmud.zoom.us/j/91818373049?pwd=MTI1UHpFaU54SjZmV0QlhmUkJTQT09>

Webinar ID: 918 1837 3049

Passcode: 834363

By Phone*

Telephone: 1 669 900 6833

Webinar ID: 918 1837 3049

Passcode: 834363

International numbers available: <https://ebmud.zoom.us/u/kOEfToaYr>

Providing public comment

The EBMUD Board of Directors is limited by State law to providing a brief response, asking questions for clarification, or referring a matter to staff when responding to items that are not listed on the agenda.

If you wish to provide public comment please:

- Use the raise hand feature in Zoom to indicate you wish to make a public comment
<https://support.zoom.us/hc/en-us/articles/205566129-Raising-your-hand-in-a-webinar>
 - If you participate by phone, press *9 to raise your hand
- When prompted by the Secretary, please state your name, affiliation if applicable, and topic
- The Secretary will call each speaker in the order received
- Comments on **non-agenda items** will be heard at the beginning of the meeting
- Comments on **agenda items** will be heard when the item is up for consideration
- Each speaker is allotted 3 minutes to speak; the Board President has the discretion to amend this time based on the number of speakers
- The Secretary will keep track of time and inform each speaker when the allotted time has concluded

Submitting written comments or materials

- Email written comments or other materials for the Board of Directors to SecOffice@ebmud.com.
- Please indicate the meeting date and agenda item number or non-agenda item in the subject of the email. Contact information is optional.
- **Please email by 4 p.m. the day prior to the scheduled regular meeting;** written comments and other materials submitted to the Board of Directors will be filed in the record.

**To observe the Sustainability/Energy Committee Meeting,
please visit: <https://www.ebmud.com/about-us/board-directors/board-meetings/>**

EAST BAY MUNICIPAL UTILITY DISTRICT

DATE: October 20, 2022

MEMO TO: Board of Directors

THROUGH: Clifford C. Chan, General Manager *CCC*

FROM: Donald M. Gray, Interim Director of Wastewater *DMG*

SUBJECT: Resource Recovery Program Update

SUMMARY

The District's Resource Recovery Program (R2 Program) accepts and treats trucked-in waste streams at the Main Wastewater Treatment Plant (MWWTP) to offset operational and maintenance costs. Last year, the R2 Program experienced a modest increase in deliveries; however, total gross revenue increased in greater proportion due to rate increases that reflect the increased cost of treatment. The R2 Program is engaged in multiple activities including coordinating with a hydrogen fuel station developer that will operate on property leased from the District, maintaining and expanding food waste partnerships, a recently completed agreement for surplus energy sales, and continuing a workplace electric vehicle (EV) charging program at the MWWTP. An update on these activities will be presented at the October 25, 2022 Sustainability/Energy Committee meeting.

DISCUSSION

The R2 Program earned \$14.5 million in gross revenue in Fiscal Year (FY) 2022, which was nine percent higher than the previous year (\$12.9 million). Some of the increased revenue comes from growth in trucked waste deliveries, but most is a result of rate increases at the start of the calendar year. Annually, the R2 Program reviews trucked waste treatment and handling costs to ensure that rates adequately cover these costs. Additional rate increases are likely in 2023.

R2 Program and Nutrient Discharges

While the acceptance of high-strength organic waste for anaerobic digestion delivers significant benefits in the form of renewable energy generation, provides effective treatment of organic wastes, and generates nutrient-rich biosolids, it also contributes nutrients to the MWWTP's discharge to the San Francisco Bay (Bay). Staff is examining various high-strength waste streams for their relative nutrient contribution and considering curtailing selected waste deliveries to reduce nutrient discharges. While this strategy may not eliminate the risk of harmful algal blooms in the Bay, it is a measure that can be taken more quickly than other nutrient reduction options that require significant investments in wastewater treatment infrastructure.

Hydrogen Fuel Station Development

In April 2021, the California Energy Commission awarded grant funds to a project team led by the Center for Transportation and the Environment (CTE), a non-profit organization that develops and leads renewable fuel transportation projects. CTE organized a team that includes Hyundai and FirstElement Fuel to develop a zero-emission drayage truck project with hydrogen fuel cell trucks. FirstElement Fuel is designing and building a hydrogen fueling station on the District's West End property adjacent to the MWWTP. FirstElement Fuel demolished one of the former Army Reserve buildings over the summer, and preparations are underway for grading and paving the site. The fueling station is expected to be operational in the second quarter of 2023. The project has improved a portion of the West End property at no cost to the District and brings in lease revenue. This project will advance the use of zero-emission trucks in the West Oakland neighborhood, which is heavily impacted by drayage truck diesel emissions.

Food Waste Partnerships

Food waste deliveries increased in FY 2022 with greater volumes of both solid food waste from the Central Contra Costa Solid Waste Authority (CCCSWA) and processed liquid food waste from commercial processors. Republic Services, the franchise hauler for CCCSWA, also started to deliver preprocessed food waste from Daly City. CCCSWA deliveries continue to recover from lower pandemic levels, increasing over 100 percent between FY 2021 and FY 2022. One commercial food waste processor continued to expand its business and delivered 3.2 million gallons in FY 2022, an 85 percent increase over the 1.7 million gallons delivered in FY 2021. Food waste processing improvements at Republic Services' Martinez transfer station continue to deliver material of improved quality with much lower levels of contamination greatly reducing associated costs to process the material at the MWWTP.

Surplus Energy Sales

The District's current power purchase agreement (PPA) with the Port of Oakland expires on October 31, 2022. In preparation for PPA expiration, the District conducted a Request for Expressions of Interest (RFEOI) and contacted potential buyers to ensure the District receives the best value for its surplus renewable electricity and associated renewable energy credits. Based on price indications received in response to the RFEOI, staff negotiated a PPA amendment with the Port of Oakland. Under the amendment, the price the District receives for exported surplus power will increase from \$58 per megawatt hour to \$66. The Board authorized an amendment of the PPA at its October 11, 2022 meeting, taking effect November 1, 2022.

Workplace EV Charging Program

A small portion of the onsite electricity generation is used to power electric vehicles. In February 2022, staff completed a workplace EV charging pilot study for District employees at the MWWTP. Based on favorable pilot results, workplace EV charging will continue as an ongoing

program. Since the completion of the pilot study, the number of employees participating in the program has increased from seven to 12.

FISCAL IMPACT

The R2 Program generated record gross revenues last year, which helps stabilize wastewater rates. In FY 2022, the R2 Program generated \$13.8 million in tipping and other associated fees and \$700,000 in surplus energy sales. The combined gross revenue of \$14.5 million is equivalent to approximately 10 percent of wastewater-related gross revenues, which exceeds the costs to operate the program and treat the waste delivered.

NEXT STEPS

Staff will continue to utilize existing infrastructure to treat a variety of organic wastes and produce and utilize renewable energy at the MWWTP while managing nutrient discharges. Staff will continue to pursue wastes that can be managed cost effectively, including clean liquid food waste. Staff expects to expand the number of charging stations available at the MWWTP as the Workplace EV Charging Program continues to grow.


CCC:DMG


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EAST BAY MUNICIPAL UTILITY DISTRICT

DATE: October 20, 2022

MEMO TO: Board of Directors

THROUGH: Clifford C. Chan, General Manager 

FROM: David A. Briggs, Director of Operations and Maintenance 

SUBJECT: Renewable Energy Update

SUMMARY

This memo provides an update on the District's active renewable energy projects. Primary efforts are focused on development of a five-megawatt (MW) photovoltaic (PV) project on District-owned watershed property within the City of Orinda. Other efforts include exploration of in-conduit energy generation within the water distribution system. These projects will reduce operational costs and increase the District's use of renewable, emissions-free energy sources in support of District Policy 7.07 – Energy. This information will be presented at the October 25, 2022 Sustainability/Energy Committee meeting.

DISCUSSION

Since 2003, the District has successfully developed 11 PV projects under various contractual arrangements providing nearly two MWs of PV capacity. Collectively, these projects offset approximately two percent of the District's annual energy consumption. The District's renewable energy projects are cost-effective and ensure the District's indirect emissions are reduced at rates that support District Policy 7.07, which is to be carbon neutral for the water system by 2030.

Earlier this month, construction began on the five MW PV project in Orinda known as the Duffel Project. Site grading and access road construction will be active through the winter. The project is expected to be online in late 2023. An amended Power Purchase Agreement (PPA) will be brought to the Board next month to address cost increases that will be jointly absorbed by the District's partner (TotalEnergies) and the District. The economic viability of the project depends on admittance into PG&E's Renewal Energy Self-Generation Bill Credit Transfer (RES-BCT) program. This program is only available to government agencies and has a program cap of 105 MW within PG&E's service area. The District's project is among the projects awaiting admittance along with others already admitted. Collectively, all known projects are expected to marginally exceed the entire capacity.

Under the RES-BCT program, the project's net present value could exceed \$14 million over the lifetime of the agreement while supplying nearly eight percent of the District's current total electric load.

For in-conduit hydrogeneration, the District is exploring the economic feasibility of two projects. The first project involves installation of a hydroelectric generator parallel to the Piedmont Regulator adjacent in Piedmont. This 30-kilowatt (kW) unit is expected to be installed this fall. Once PG&E completes the required upgrade to the electric distribution system to support the project, the project will be interconnected under a net-metering tariff.

A second and much larger in-conduit unit is under consideration at the planned new Wildcat Pumping Plant in San Pablo. This site could support up to 140 kW of generation though economic viability will depend on whether a practical sales option can be identified.

NEXT STEPS

Staff will bring the amended PPA for the Duffel Project to the Board for consideration at its November 8, 2022 meeting.

CCC:DAB:sd

EAST BAY MUNICIPAL UTILITY DISTRICT

DATE: October 20, 2022

MEMO TO: Board of Directors

THROUGH: Clifford C. Chan, General Manager *CCC*

FROM: David A. Briggs, Director of Operations and Maintenance *DB*

SUBJECT: Calendar Year 2021 Greenhouse Gas Inventory

SUMMARY

The District has reported its greenhouse gas (GHG) emissions since 2005 using a variety of methods as standards have evolved. The 2021 GHG inventory is based on the Water Energy Nexus (WEN) 1.0 protocol developed by The Climate Registry. District Policy 7.07 – Energy, includes GHG reduction goals for the District and benchmarks annual emission reductions against a baseline year (2000). The District’s GHG emission goal for 2021 is 33,935 metric tons or less of carbon dioxide equivalent (MT CO₂^e). Actual GHG emissions in 2021 totaled 33,706 MT CO₂^e. This item will be presented at the October 25, 2022 Sustainability/Energy Committee meeting.

DISCUSSION

The District’s GHG inventory is comprised of direct and indirect emissions and includes water and wastewater operations. Direct emissions result from the combustion of fuel, treatment of water and wastewater, and refrigerant usage. Indirect emissions result from the use of electricity. Emissions associated with District suppliers, District contractors, and employee commuting are not included under the District’s existing inventory protocol. The table below reports the inventory totals for the baseline year (2000), 2020, and 2021.

Year	Water Emissions (MT)	Wastewater Emissions (MT)	Total Emissions (MT)	District Goal (MT)
2000	35,879	17,078	52,957	--
2020	13,370	13,879	27,249	36,727
2021	17,165	16,541	33,706	33,935

The District’s GHG emissions are grouped into five areas representing major areas of operation. The table below summarizes the 2021 GHG emissions for each of these areas.

Sector / System	2021 Total GHG Emissions (MT)	2020 Total GHG Emissions (MT)	Percent of 2021 Total	Change from 2020
Buildings	1,561	1,614	5%	-3%
Fleet	3,898	4,089	11%	-5%
Raw Water	3,338	297	10%	+1,023%
Treatment & Distribution	8,368	7,370	25%	+14%
Water System Total	17,165	13,370	51%	+28%
Wastewater System	16,541	13,879	49%	+19%
District Total	33,706	27,249	100%	+24%

The 2021 GHG emissions were 24 percent higher than 2020 for the following reasons:

- Supplemental Water Supply Pumping: Additional electricity was used at several raw water pumping plants to transfer water from the Sacramento River to the District to support drought operations.
- East Bay Clean Energy (EBCE) Emission Factor: The emission factor for EBCE increased by more than 400 percent, from 135 to 591 pounds of CO₂^e per megawatt hour. EBCE stopped purchasing nuclear power in 2021 and replaced it with power purchases with unspecified sources from the open market which have higher emissions.
- Wastewater Emissions: Electricity usage at the Main Wastewater Treatment Plant (MWWTP) was significantly higher because the turbine was offline due to an unplanned shutdown caused by an equipment failure that lasted for several months in 2021. Replacement power had higher emissions.

NEXT STEPS

The District expects to switch to the WEN 2.0 protocol in the near future. WEN 2.0 was published in September 2021 and contains revisions to wastewater emission estimation methods that are expected to significantly increase the District's baseline and inventory values. The District will make this change after a Princeton University study of methane and nitrous oxide emissions at several wastewater plants, including the MWWTP, is published. This study will allow the District to use more accurate estimates than the default values in the WEN 2.0.

Based on forecasted supplemental water pumping and electrical emission factors for the 2022 inventory, the District may exceed its goal in 2022. Staff is evaluating options for the purchase of offsets that may be needed next year to meet 2022 emission goals.

CCC:DAB:sd