



**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, May 26, 2015
8:45 a.m.
Training Resource Center**

(Committee Members: Directors Katz {Chair}, Linney, and Young)

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. Update on Greenhouse Gas Emissions (Wallis)
2. Energy Strategy Update (Wallis)
3. Food Waste Update (Horenstein)

ADJOURNMENT:

Disability Notice

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EAST BAY MUNICIPAL UTILITY DISTRICT

DATE: May 21, 2015

MEMO TO: Board of Directors

THROUGH: Alexander R. Coate, General Manager *mc*

FROM: Michael J. Wallis, Director of Operations and Maintenance *mw*

SUBJECT: Update on Greenhouse Gas Emissions

INTRODUCTION

On April 29, 2015, Governor Brown signed Executive Order B-30-15 to establish a new interim statewide greenhouse gas (GHG) emission target to reduce all GHG emissions to 40 percent below 1990 levels by 2030. This memo provides a summary of the governor's executive order and an update on the District's efforts to reduce GHG emissions. These items will be discussed at the May 26, 2015 Sustainability/Energy Committee meeting.

SUMMARY

In June 2005, Governor Schwarzenegger signed Executive Order S-3-05, which established a goal to reduce GHG emission to 80 percent below 1990 levels by 2050. Executive Order B-30-15 establishes an interim GHG emission reduction target of 40 percent below 1990 levels by 2030 to ensure the long-term goal is met. In addition, the executive order requires the California Natural Resources Agency to update the state's climate adaptation strategy every three years, and for each sector lead, including the water sector, to prepare an implementation plan by September 2015.

Although the executive order applies to state agencies only, in 2013, the District set aggressive GHG reduction goals to be carbon free for indirect emissions and reduce direct emissions by 50 percent compared to 2000 emissions by 2040. The District continues to meet interim goals towards the zero goals. However, with the continued drought, the District began operating the Freeport facilities which will significantly increase the District's GHG emissions this year.

DISCUSSION

Executive Order S-3-05 set GHG reduction goals for 2010, 2020 and 2050, with the goal in 2050 to be 80 percent below 1990 levels. Executive Order B-30-15 establishes an interim GHG emission reduction target of 40 percent below 1990 levels by 2030 to ensure the long-term goal is met.

The executive order also requires the California Air Resources Board to update the Climate Change Scoping Plan's 2030 GHG emissions target in terms of millions of metric tons of carbon dioxide equivalent, and for the California Natural Resources Agency to update every three years, the state's climate adaptation strategy, *Safeguarding California*. The *Safeguarding California*

plan will identify a lead agency for vulnerable sectors including water, energy, transportation, public health, agriculture, emergency services, forestry, biodiversity and habitat, and ocean and coastal resources.

The California Natural Resources Agency is still in the process of determining who the lead departments will be for each sector and no date has been announced on when the decision will be finalized. In accordance with the executive order, the lead agency will have to prepare an implementation plan by September 2015 to outline actions that will be taken to comply with the *Safeguarding California* plan and will have to report back to the California Natural Resources Agency by June 2016 on the actual implementation.

District Energy Policy and GHG Emissions

In November 2013, the District adopted a revised energy policy to deal with all energy sources and establish aggressive GHG emissions goals for 2040. The revised policy established a 2040 GHG emissions goal to be carbon-free for indirect emissions and to reduce direct emissions by 50 percent compared to 2000 emissions. The intermediate goals from 2013 to 2040 are derived by a straight line projection. The policy also provided direction to utilize the least-cost option to achieve the interim and final goals. The District's goal is more aggressive than the two Executive Orders to an overall reduction in GHG of 85 percent by 2040.

Operation of the Freeport facilities in conjunction with the conventional water treatment plants (Sobrante and USL) in 2015 will require a significant amount of power. The increase in power use is estimated to increase indirect emissions in 2015 by 2,000 to 8,000 metric tons over the overall GHG emissions goal for 2015 depending on the amount of water conveyed through the Freeport facilities. Policy 7.07 directs staff to utilize the least-cost option to achieve the GHG goals, which currently would be the purchase of tradable renewable energy credits (TRECs). TRECS are non-tangible energy commodities that represent a megawatt-hour of power produced from a renewable energy source. The current cost of a single TREC is between \$0.90 and \$1.10.

FISCAL IMPACT

Based on the GHG inventory for last year, the District will be below its overall direct and indirect interim GHG emissions goal for calendar year 2014. However, due to the operation of the Freeport facilities this year, purchasing TRECs will be necessary to offset the projected overage in calendar year 2015 and is estimated to cost between \$10,000 and \$50,000. These costs can be accommodated within the existing FY16 budget.

NEXT STEPS

The District will finalize the 2014 GHG inventory and will purchase TRECs to meet its 2015 interim GHG goal.

ARC:MJW:ss

EAST BAY MUNICIPAL UTILITY DISTRICT

DATE: May 21, 2015

MEMO TO: Board of Directors

THROUGH: Alexander R. Coate, General Manager *ARC*

FROM: Michael J. Wallis, Director of Operations and Maintenance *hfw*

SUBJECT: Energy Strategy Update

INTRODUCTION

This memo provides an update on the District's energy efforts including investigation of photovoltaic (PV) projects, and Power and Water Resources Pooling Authority (PWRPA). This information will be discussed at the May 26, 2015 Sustainability/Energy Committee meeting.

RECOMMENDATION

Continue implementation of PV systems at four District sites. Complete an evaluation of the benefits and risks to the District of receiving energy from PWRPA.

DISCUSSION

Photovoltaic Projects

In 2014, staff completed a feasibility study of adding PV projects to District facilities under PG&E's Net Energy Metering (NEM) tariff and a new NEM-Aggregate (NEM-A) tariff. The NEM-A tariff allows participants to construct one PV system and apply the PV system's energy credits to multiple electric accounts located on the same or adjoining land parcels. The study identified five total projects, three under the NEM tariff and two under the NEM-A tariff. In December 2014, a Request for Proposals was sent to fourteen photovoltaic vendors to secure both Power Purchase Agreement (PPA) bids and direct purchase bids for the five District sites. Eight vendors participated in the mandatory job walk and five submitted proposals. Four of the sites received bids while a fifth site did not receive any bids due to the difficulty of installing PV panels on top of a concrete reservoir's domed shape roof. The bids for the four sites were evaluated based on the largest net present value over a 15-year term for both a PPA and a direct purchase. SunEdison provided bids with the best overall value with a 15-year net present value of approximately \$3.6 million for three sites under a PPA and the fourth site as a direct purchase.

The PPA sites include the Norris Reservoir, North Richmond Water Reclamation Plant, and the Camanche Dam site, and the direct purchase site is at the Oakport Storage Facility/Oakport Wet Weather Treatment Plant. The total PV capacity of the new PV projects will be 1,013 kW, and would bring the District's total PV capacity to 700 kW for sites owned by the District, and 1,559 kW for sites under PPAs. A number of tasks will need to be completed prior to installation of the projects including filing CEQA documentation, removing trees, relocating motion sensors, constructing electrical tie-in points, and securing a right-of-way. The availability of the NEM and NEM-A tariffs is also limited as the tariffs are set to expire by July 2017 or when NEM reaches 2,409 MWs of connected generation projects. Currently 1,470 MWs are connected, and some projections anticipate the tariff may close as early as June 2016. The electric utilities are currently working on a replacement NEM tariff that is expected to lower the value on renewable-generated electricity, and, therefore, lower or eliminate the cost-effectiveness of future PV and renewable generation projects. Staff has begun negotiations on the PPAs and direct purchase agreement terms with Sun Edison and expects to seek Board approval this September. Construction is expected to take eight months with an estimated completion date of May 2016.

PWRPA

In December 2013, the District entered into an agreement with PWRPA to explore the costs and benefits to the District of joining PWRPA. Joining PWRPA was discussed at the September 14, 2014 Sustainability/Energy Committee meeting. Since PWRPA service is utilizing PG&E's transmission and distribution network, PWRPA service will be subject to all of the same operating constraints (e.g., brown outs, rolling blackouts, service outages, etc.) as PG&E. In addition, any electrical network constraints that impact future expansion of existing PG&E or PWRPA service would be addressed by PG&E in a capacity study and subsequent improvements paid for by the customer requiring the upgrades.

In late 2014, PWRPA completed the preliminary design and cost estimates for the intervening facilities that are required to receive PWRPA service. The cost and estimated saving appeared favorable and in December 2014, staff requested that PWRPA submit seven District electric accounts to PG&E for consideration for PWRPA electric service. In January 2015, PG&E tentatively accepted the seven accounts for PWRPA electric service though considered the request incomplete; PG&E is requiring a service initiation fee of approximately \$200,000, detail engineering drawings of proposed intervening facilities, and the execution of the agreements necessary for the District to join PWRPA. The District still needs to verify the benefits and risks for the seven facilities including review of the agreements necessary to join PWRPA prior to completing the request filing.

In January 2015, when PG&E tentatively accepted the District's request for PWRPA service they also simultaneously made an offer to PWRPA to extend the term of the existing PG&E/PWRPA Settlement Agreement. The settlement agreement temporarily resolved PG&E's challenge of PWRPA's right to exist. The settlement agreement is set to expire in

September 2015 and the PG&E offer would extend it for five additional years, or until September 2020. The execution of this agreement would provide a little more certainty to the long-term existence of PWRPA. PWRPA's Board approved the agreement on May 16, 2015 and the agreement now requires approval by the Federal Energy Regulatory Commission (FERC) before PG&E and PWRPA can execute the agreement.

FISCAL IMPACTS

The total estimated cost to prepare and install the four PV projects is \$1.5 million, \$1.3 million for the direct purchase at Oakport, and \$200,000 to complete site tasks associated with the PPA sites.

NEXT STEPS

Negotiate three PPAs and one direct purchase agreement for the four PV projects, and continue to evaluate other opportunities to economically develop PV, or other clean energy projects. Following the approval of the PWRPA settlement agreement continue to evaluate the benefits and risks of joining and purchasing power through PWRPA.

ARC:MJW:ss

EAST BAY MUNICIPAL UTILITY DISTRICT

DATE: May 21, 2015

MEMO TO: Board of Directors

THROUGH: Alexander R. Coate, General Manager *ARC*

FROM: Bennett K. Horenstein, Director of Wastewater *BKH*

SUBJECT: Food Waste Update

SUMMARY

In pursuit of local sustainable organic feedstock for anaerobic digestion and renewable energy generation at the Main Wastewater Treatment Plant (MWWTP), the District has been seeking sources of commercial food waste for the past several years. This memorandum provides an update on the District's efforts to secure the City of Oakland's (City) commercial food scraps, as well as to procure a service provider for food waste preprocessing on the MWWTP site. Staff will present more detailed information to the Sustainability/Energy Committee on May 26, 2015.

DISCUSSION

City of Oakland Commercial Food Scraps

The City awarded its Mixed Materials and Organics franchise to Waste Management (WM) in September 2014, and directed that WM contract with EBMUD for commercial organics processing. The prime agreement between WM and the City was signed on February 20, 2015, and WM and the District have been actively negotiating a subcontract.

The District and WM have reached agreement on key terms, and specific language in the subcontract is being finalized, subject to City staff approval. Approaches to key issues are summarized as follows:

- Scope of Material: The material to be processed by EBMUD consists of food scraps, which is a subset of commercial organics. The District will have the ability to review determinations of which commercial organic materials are delivered to the District for processing and which are deemed non-food scraps and are delivered to WM facilities.
- Use of Alternate Facilities: WM will assume responsibility for managing diversion of material to alternate facilities during the start-up period (from July 1, 2015 to the start of operation of EBMUD's pre-processing facility) and during periods of operational downtime. This alleviates risk to the District associated with securing use of alternate facilities.

- Disposal of Residuals: The District's operation will remove contamination from the material, some of which will need to be disposed of at a landfill. These residuals from Oakland food scraps will be delivered to WM's Altamont Landfill at the competitive gate rate established in WM's agreement with the City.
- Material Quality: If material delivered to the District from routes contains more than 10% contamination, WM must demonstrate that it is fulfilling its requirements to provide outreach and education to customers regarding source separation. The District may require WM to submit a remedial plan to address quality through outreach, and District staff may elect to supplement the outreach and education efforts. Any material pre-processed by WM must meet a quality specification that limits contamination to 5%, or WM will not receive the discounted price for preprocessing the material.

Food Waste Preprocessing and Program Expansion

On February 20, 2015, the District issued a Request for Proposals (RFP) for Food Scraps Preprocessing and Organics Program Development. Through this RFP, the District sought to procure a service-provider to provide food waste preprocessing services on the MWWTP site, with capacity to preprocess Oakland food scraps by July 1, 2016. Additionally, the District invited the companies, on an optional basis, to propose additional sources of food waste for the facility, and to propose additional added value services consistent with the District's objectives for the organics program.

The District received and evaluated two proposals and elected to negotiate with both companies for elements of their proposed scopes of services:

- Harvest Power: Staff is currently negotiating a contract with Harvest Power for organics management services, including pre-processing of Oakland food scraps, sourcing of additional feedstock, dewatering and management of food waste digestate, and conversion of biogas to compressed natural gas for transportation fuel. The parties are currently evaluating contract approaches that would allow for collaborative project financing and construction and equitable allocation of costs, benefits, and risks. One approach under consideration is for Harvest Power to take responsibility for designing, building, and operating new project facilities, with the District contributing a share of capital and operating dollars toward the infrastructure and operations of the facility. The parties would share in the revenue from energy and tip fees. In addition, both parties would benefit from a \$5m grant from the California Energy Commission that Harvest Power is working to transfer to this project.
- Recology: District staff is separately negotiating with Recology regarding a supply of organics sourced from San Francisco's municipal solid waste. Recology secured a \$3m

grant from CalRecycle to support purchase of advanced technology to extrude organics from the mixed material trash stream. The grant funds are contingent on digestion of the organics by EBMUD. Staff is also continuing to talk to Recology and San Francisco Department of Environment staff about delivering other sources of organics, including commercial source-separated material.

FISCAL IMPACT

As negotiations progress, staff is updating the financial model to ensure there is a net value to manage the risks and uncertainties, as well as to provide a rate offset to District customers. Details on the final financial analysis will be provided to the Board at a subsequent meeting.

NEXT STEPS

Staff is continuing to work with the City of Oakland and WM to finalize terms of the subcontract for District organics processing and will bring the proposed subcontract to the Board for consideration.

Staff is also negotiating with Harvest Power and Recology and will bring proposed contracts to the Board for consideration.

BKH:JTK

