



City Council Staff Report

From: City Manager

Report Type: CONSENT CALENDAR

Lead Department: Utilities

Meeting Date: February 26, 2024

Staff Report: 2312-2381

TITLE

Adopt a Resolution Authorizing the City Manager or Their Designee to Execute a Third Phase Agreement with Northern California Power Agency for the Purchase of up to 2,800 Megawatt-Hours per Year of Biogas Energy from Zero Waste Energy Development Company, LLC over a Term of up to 10 Years for a Total Not to Exceed Amount of \$5.7 Million; CEQA Status: Not a Project under CEQA Guidelines Section 15378(b)(5)

RECOMMENDATION

Staff recommends that the City Council adopt a Resolution (Attachment A) to:

1. Authorize the City Manager or their designee to execute a Third Phase Agreement (Exhibit A to Attachment A) with the Northern California Power Agency (NCPA) to purchase up to 2,800 MWh of renewable energy per year from an anaerobic digester biogas project owned by Zero Waste Energy Development Company, LLC (ZWED), over a period of 10 years, at a total cost not to exceed \$5.7 million;
2. Authorize the City Manager or their designee to execute on behalf of the City all related documents or agreements necessary to administer the Third Phase Agreement that are consistent with the Palo Alto Municipal Code and City Council approved policies, including, but not limited to, collateral assignment agreements; and take any and all actions as are necessary or advisable to implement and administer the Third Phase Agreement;
3. Authorize the City Manager or their designee to approve and execute amendments to the Third Phase Agreement, as may be required from time to time, so long as the contract price and length of the agreement remain unchanged;
4. Waive the application of the anti-speculation requirement of Section D.1 of the City's Energy Risk Management Policy as it may apply to surplus electricity purchases resulting from the City's participation in the ZWED contract, due to the small size of the ZWED contract and the City's need for the output to comply with its Senate Bill 1383 procurement requirement; and

5. Approve the allocation of the ZWED contract's cost between the Utilities Department and the Public Works Department such that Utilities is responsible for the share of the cost representing the value of the generic renewable energy output of the project, while Public Works is responsible for the remaining cost, reflecting the project's value in satisfying the City's Senate Bill (SB) 1383 compliance requirements.

EXECUTIVE SUMMARY

In response to California's ambitious SB 1383 regulations to reduce methane emissions by diverting organic waste from landfills, Palo Alto engaged with the City of Santa Clara in a joint procurement effort led by the Northern California Power Agency (NCPA) for the purchase of renewable energy from an anaerobic digester biogas project. The two cities ultimately selected the Zero Waste Energy Development Company (ZWED) to provide renewable energy derived from a 1.6 megawatt (MW) anaerobic digester facility in San Jose, the world's largest of its kind. The facility, operational since 2015, boasts a capacity of processing up to 90,000 tons of organic waste annually. This is the same facility that processes Palo Alto's curbside collected compostable materials.

The 10-year Power Purchase Agreement (PPA) with ZWED commits Palo Alto to a cost of \$185 per megawatt-hour (MWh), escalating at up to 2% annually. While this premium price reflects the scarcity of SB 1383-compliant electricity generators in the state, the agreement incorporates a crucial provision allowing termination in the event the facility's output no longer aligns with SB 1383 requirements.

The project's impact on Palo Alto's electric portfolio is relatively modest, contributing approximately 1,330 MWh annually, constituting 0.16% of the City's 2022 retail electricity sales. While the project enhances the city's renewable energy portfolio and diversifies resources, Palo Alto is already on track to meet state Renewable Portfolio Standards (RPS) targets independently.

To fairly allocate costs, the contract cost is to be split between the Public Works and Utilities Departments. Utilities will shoulder expenses corresponding to the market value of renewable electricity products, estimated at \$90 per MWh over the contract's duration. Public Works will assume the remaining costs, reflecting the premium paid for the contract's SB 1383 compliance value. Based on the facility's expected level of output, the average annual cost of the contract is estimated to be \$270,000 (with \$120,000 being paid by Utilities and \$150,000 being paid by Public Works), although this amount could be lower or higher (up to \$568,000 per year total) depending on the facility's actual energy deliveries to the City.

BACKGROUND

In September 2016, Governor Brown signed SB 1383 into law, which set methane emissions reduction targets for California in a statewide effort to reduce the emissions of short-lived climate pollutants. Landfills are the third largest source of methane in California and are responsible for 20 percent of the state's methane emissions. When organic waste such as food

scraps, yard trimmings, and paper products are disposed in a landfill, they decompose in the absence of oxygen (i.e., anaerobically) and create methane, a powerful greenhouse gas. SB 1383 regulations aim to reduce methane emissions by keeping organic waste out of landfills.

The regulations established targets to achieve a 50 percent reduction in the level of statewide disposal of organic waste by 2020, a 75 percent reduction in the level of statewide disposal of organic waste by 2025, and a target of at least 20 percent of currently disposed edible food to be recovered for human consumption by 2025. These goals are to be achieved through the mandated collection of organic material to be processed into recovered organic products instead of being landfilled, and the establishment of edible food recovery programs in cities throughout the State.

To provide a market for all this additional organic material, SB 1383 also established requirements that cities and counties annually procure a quantity of recovered organic waste products. CalRecycle assigns an annual procurement target to each jurisdiction based on its population. Jurisdictions can fulfill their target by procuring any combination of the following recovered organic waste products:

- Compost
- Mulch
- Renewable energy (transportation fuel, heat, or electricity) from anaerobic digestion
- Electricity from biomass conversion

In November 2021, staff provided an update to Council on SB 1383 and the actions needed for Palo Alto to comply with the new regulations including the necessity to procure additional qualifying recovered organic waste products.¹

ANALYSIS

SB 1383 Procurement Options

The SB 1383 regulations require that jurisdictions purchase 0.08 tons of recovered organic waste products per capita per year. Based on Palo Alto's population, this requirement translates to an annual purchase of the equivalent of 5,360 pounds of recovered organic waste products, which is equivalent to any of the following procurement volumes (or a combination of these):

- 5,360 tons of mulch;
- 3,108 tons of compost;

¹ Staff Report 13547: "Adoption of an Ordinance Amending Existing Palo Alto Municipal Code Chapter 5.20, Collection, Removal and Disposal of Refuse, and Adding Chapter 5.40, Edible Food Recovery, to Comply with Senate Bill 1383 (Short-Lived Climate Pollutants Reduction Strategy); Finding of Exemption from CEQA Review; Adoption of a Resolution Amending the Administrative Penalty Schedule to add the SB 1383 Requirements; and Review of Other Requirements Related to Senate Bill 1383."

<https://www.cityofpaloalto.org/files/assets/public/v/7/agendas-minutes-reports/agendas-minutes/city-council-agendas-minutes/2021/11-november/20211101pccs-amended.pdf>

- 1,297 MWh of electricity derived from renewable gas;
- 3,484 MWh of electricity derived from biomass conversion; or
- 112,560 diesel gallon equivalents of renewable gas in the form of transportation fuel.

The required volumes of compost and mulch would far exceed the City's need for such material. Staff also concluded that transportation fuel from renewable gas is very expensive and difficult to procure, so staff focused on the procurement of electricity from renewable gas (i.e., anaerobic digestion) or biomass conversion as the most efficient and economical methods of compliance with the SB 1383 regulations. However, given that the City's procurement requirement for such electricity is relatively small (compared to the output of a typical anaerobic digester or biomass generator), staff worked with the City of Santa Clara (which has a procurement requirement roughly twice as large as Palo Alto's, and like the City also operates its own municipal electric utility) on a joint procurement effort.

In April 2022, the Northern California Power Agency (NCPA)² issued a Request for Proposals (RFP) on behalf of the Cities of Palo Alto and Santa Clara for electricity supply from a renewable energy generator that would satisfy the SB 1383 procurement requirements of the two cities. Staff from the two cities agreed to split the output of the eventual project in proportion to their populations, with Palo Alto receiving one-third of the total output and Santa Clara receiving the rest.

ZWED Contract Summary

In response to its RFP, NCPA received two proposals; however only one was deemed responsive, from the Zero Waste Energy Development Company (ZWED). The ZWED proposal is for the output of a 1.6 MW generator that uses renewable gas produced by a dry fermentation anaerobic digester facility located in San Jose. The facility can process up to 90,000 tons per year of organic waste, making it the largest such anaerobic digester in the world.

The ZWED project's total annual production is estimated to be approximately 4,000 MWh (net of on-site usage by the facility), although this amount is dependent on the availability of feedstock and so can vary significantly from year to year. The total spending authority requested by staff (\$5.7 million over 10 years) is based on an estimate of the maximum output volume the ZWED facility could feasibly produce, which NCPA would have to purchase on Palo Alto's and Santa Clara's behalf (about 8,000 MWh per year). The expected actual level of the facility's output is a little less than half this volume, so the total expected cost of this contract is about \$2.7 million.

² NCPA is a not-for-profit Joint Powers Agency whose membership includes municipalities, a rural electric cooperative, and other publicly owned entities, including the City of Palo Alto and the City of Santa Clara. The mission of NCPA is to provide members cost effective wholesale power, energy-related services, and advocacy on behalf of public power consumers through joint action.

The facility began commercial operations in 2015, and it is currently under contract with PG&E. The facility's output qualifies as Renewable Portfolio Standard (RPS)-eligible, and the City will receive Portfolio Content Category (PCC) 1 (or "Bucket 1") Renewable Energy Credits (RECs) as well as Resource Adequacy (RA) capacity along with the actual electricity from the project. The ZWED PPA has a contract term of 10 years and a contract price of \$185 per MWh (escalating at up to 2% per year). This contract price is quite high compared to prices for typical renewable energy generators, with this premium reflecting the fact that it is one of the only electric generators in the state whose output satisfies SB 1383's procurement requirements.

Contract Structure

Over the course of 2022 and 2023, NCPA staff led the PPA negotiations with ZWED for renewable energy from ZWED's anaerobic digester facility on behalf of Palo Alto and Santa Clara. To enable NCPA to enter into the PPA with ZWED, the two cities must each execute a Third Phase Agreement with NCPA, which specifies the rights and obligations of NCPA and the cities regarding governance and administration of the PPA. The Third Phase Agreement also obligates the participating members to pay their assigned contract percentage share of all project costs (outlined in Exhibit A of the attached Third Phase Agreement), including but not limited to administrative services costs, scheduling coordination costs, and all other costs related to the PPA.

Risk Management Assessment

Given that this project is an existing power plant, there is no development risk, and instead only operational risk. There are some unique operational risks associated with running an anaerobic digester power plant such as the quality of the intake materials affecting the power produced, but ZWED has a strong track record of managing their facilities to reliably produce power over the term of the agreement.

Given the high price of this contract and the fact that the City's sole reason for entering into this agreement is to satisfy its SB 1383 procurement requirements, the largest source of risk associated with this PPA is "regulatory risk" – i.e., the risk that the facility's output will at some point no longer qualify as SB 1383-compliant and therefore the City would be paying a high price for energy with negligible compliance value. To address this risk, NCPA negotiated the inclusion of a provision in the PPA (Section 6.8(b)) that allows it to terminate the agreement in that situation, in its sole discretion and without penalty.

Finally, and perhaps most importantly, under the terms of the proposed PPA the City is not at risk for paying for output that is not delivered. As with all of the City's PPAs, the City will make no payments under the PPA until energy from the project is delivered.

Electric Portfolio Impact

The City's proposed share of the ZWED project's output is estimated to be about 1,330 MWh per year, which is equivalent to just 0.16% of Palo Alto's 2022 retail energy sales. Thus, while the project will increase and further diversify Palo Alto's renewable energy portfolio in accordance with the City's adopted Integrated Resource Plan and RPS Procurement Plan, the magnitude of the impact will be quite small. The City is already on track to meet state RPS targets without the ZWED PPA, so this is not a driving factor for this agreement, but it would slightly increase the amount of Bucket 1 RECs the City is able to swap for lower-cost Bucket 3 RECs under the REC Exchange Program.

In addition to the project's renewable energy output, the facility also qualifies as providing a small amount of local RA capacity to the grid. And although the City's electric portfolio does have a significant need for additional local RA capacity to satisfy the state's RA compliance requirements, Palo Alto's share of local RA from the ZWED project would amount to only about 0.3 MW, which represents a very small share of its overall local RA requirement level (about 100 MW).

Contract Cost Allocation

The two primary benefits of the ZWED contract are: (1) it will enable the City to comply with the SB 1383 procurement requirement, and (2) it provides the City with renewable electricity and local RA capacity. Given these very different types of benefits, staff determined that the cost of the contract should be split between the Public Works Department and the Utilities Department. Utilities will be allocated the portion of the cost, a maximum of \$252,288 annually, that is reflective of the market value of the renewable electricity products the City receives – which staff estimates to be \$90 per MWh³ over the duration of the 10-year contract – while Public Works will be allocated the remaining costs. The Public Works share of the total cost (estimated at 56% of the total over the contract term, a maximum of \$367,477 annually) reflects the price premium the City will be paying for the contract's SB 1383 compliance value.

NEXT STEPS

Attorneys from NCPA, Palo Alto, and Santa Clara have reviewed and approved the Power Purchase Agreement between NCPA and ZWED, as well as the Third Phase Agreement for the PPA with ZWED. And the NCPA Commission approved both agreements at its November 30, 2023 meeting. After both cities approve the Third Phase Agreement, NCPA will execute the PPA with ZWED, and ZWED will take the steps necessary to exit its contract with PG&E. The PPA between NCPA and ZWED includes a provision (Section 2.2(b)) that allows either party to terminate the

³ This electric output value estimate is based on the assumption that over the 10-year contract term the value of the "baseload" electricity will be \$55 per MWh, the value of the Bucket 1 RECs will be \$25 per MWh, and the value of the RA capacity will be \$10 per MWh.

agreement without penalty if ZWED has not terminated its PG&E contract and begun delivering energy to NCPA within 18 months of the PPA's execution.

FISCAL/RESOURCE IMPACT

If Council approves the execution of this Third Phase Agreement with NCPA, the City will purchase up to 28,000 MWh for a total not-to-exceed amount of \$5.68 million over the course of the 10-year contract term (up to \$620,000 per year). These values are considered upper limits on the output the facility could potentially generate; the actual output the City expects to purchase under this agreement over the contract term is estimated to be 13,300 MWh at a total cost of \$2.70 million over the 10-year contract term. Funding for the purchase of the renewable energy will be included in the Electric Utility Fund beginning in FY 2025. Public Works' portion is included in the Refuse Fund operating budget. In June 2022, as part of the City's operating budget⁴, Council approved additional funding in the Refuse Fund for this purpose, and therefore additional funding is not necessary in FY 2025. Table 1 below is a summary of the annual maximum and the expected contract costs.

Table 1: ZWED Project Annual Output & Cost Summary

	Annual Output (MWh)	Annual Cost (\$)	Utilities Cost Share (\$)	Public Works Cost Share (\$)
Maximum Output	2,803	\$619,765	\$252,288	\$367,477
Expected Output	1,332	\$294,389	\$119,837	\$174,552

POLICY IMPACT

Approval of the proposed Third Phase Agreement will enable the City to become one of the first jurisdictions in the state to comply with the SB 1383 procurement requirement. The agreement is also in conformance with the City's Sustainability and Climate Action Plan (S/CAP), Integrated Resource Plan, Carbon Neutral Plan, and RPS Procurement Plan, specifically the City's Renewable Portfolio Standard to meet at least 60% of the City's electric sales from renewable energy.

STAKEHOLDER ENGAGEMENT

The requirements for complying with SB 1383 are mandated by the State of California and are being incorporated into the City's policies. Staff is conducting outreach and education to inform the community, edible food generators, food recovery organizations, and self-haulers as well as some businesses that may need to adjust their service to be compliant with SB 1383 requirements. The outreach includes direct mail to specific stakeholders, Utilities bill inserts, site

⁴ City of Palo Alto Fiscal Year 2023 Adopted Operating Budget:
https://www.cityofpaloalto.org/files/assets/public/v/1/administrative-services/city-budgets/fy-2023-city-budget/adopted-fy23/operating-budget_final-4.pdf

visits, social media posts, E-news, newsletter articles, and updating older education pieces such as signs and posters and adding translations. Additionally, a new webpage with SB 1383 information was created and added to the Zero Waste website at www.cityofpaloalto.org/sb1383regulations.

ENVIRONMENTAL REVIEW

On December 22, 2011, the City of San Jose approved a special permit and a mitigated negative declaration for the ZWEDC power plant. The City Council's approval of this Third Phase Agreement does not require any change to the facility or its operations, and there are no substantial changes to the project or new information of substantial importance which will require subsequent or supplemental environmental review under the California Environmental Quality Act ("CEQA"). As such, the City Council's approval of this Third Phase Agreement does not meet the definition of a project under the CEQA, pursuant to Public Resources Code Section 21065 and CEQA Guidelines 15378(b)(5), because this activity would not result in a reasonably foreseeable direct or indirect change in the environment.

ATTACHMENTS

Attachment A: Resolution Approving ZWED Project Third Phase Agreement with NCPA

Attachment B: Exhibit A to Resolution Approving ZWED Project Third Phase Agreement with NCPA

APPROVED BY:

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