

Memorandum

TO: HONORABLE MAYOR
AND CITY COUNCIL

FROM: Lori Mitchell

SUBJECT: SEE BELOW

DATE: August 8, 2022

Approved



Date

8/17/2022

**SUBJECT: ACTIONS RELATED TO PROCURING ORMAT AND FISH LAKE
GEOTHERMAL POWER**

RECOMMENDATION

Adopt a resolution:

- (a) Authorizing the City Manager to execute the following two agreements for the procurement of up to 31 megawatts (MW) from the Ormat portfolio of geothermal projects, with any non-material modifications developed, as appropriate, in consultation with the City Attorney, and subject to the annual appropriation of funds, in an amount not to exceed \$21,500,000 annually and \$430,000,000 in aggregate in Calendar Years 2024 through 2047 for both agreements:
 - (1) Project Participation Share Agreement between California Community Power (CC Power), the City of San José, Sonoma Clean Power, CleanPower San Francisco, Redwood Coast Energy Authority, Peninsula Clean Energy Authority, Central Coast Community Energy, Silicon Valley Clean Energy, and Valley Clean Energy; and
 - (2) Buyer Liability Pass Through Agreement between CC Power, Ormat (or its affiliate), and the City of San José.
- (b) Authorizing the City Manager to negotiate and execute, in consultation with the City Attorney, a Coordinated Operations Agreement between CC Power, the City of San José, Sonoma Clean Power Authority, CleanPower San Francisco, Redwood Coast Energy Authority, Silicon Valley Clean Energy, Peninsula Clean Energy, Central Coast Community Energy, and Valley Clean Energy addressing operation by CC Power of the Ormat portfolio of geothermal projects.
- (c) Authorizing the City Manager to execute the following two agreements for the procurement of up to 3 MW from the Fish Lake Geothermal, LLC geothermal project, with any non-material modifications developed, as appropriate, in consultation with the City Attorney, and subject to the annual appropriation of funds, in an amount not to exceed \$1,900,000 annually and \$38,000,000 in aggregate in Calendar Years 2024 through 2044 for both agreements:
 - (1) Project Participation Share Agreement between CC Power, the City of San José, Sonoma Clean Power, CleanPower San Francisco, Redwood Coast Energy Authority, Peninsula Clean Energy Authority, Central Coast Community Energy, Silicon Valley Clean Energy, and Valley Clean Energy; and

- (2) Buyer Liability Pass Through Agreement between CC Power, Fish Lake Geothermal, LLC (or its affiliate), and the City of San José.
- (d) Authorizing the City Manager to negotiate and execute, in consultation with the City Attorney, a Coordinated Operations Agreement between CC Power, the City of San José, Sonoma Clean Power Authority, CleanPower San Francisco, Redwood Coast Energy Authority, Silicon Valley Clean Energy, Peninsula Clean Energy, Central Coast Community Energy, and Valley Clean Energy addressing operation by CC Power of the Fish Lake Geothermal, LLC geothermal project.

OUTCOME

By executing the Project Participation Share Agreements and the Buyer Liability Pass Through Agreements, the Community Energy Department (Department) would be able to procure up to 34 MW of geothermal power from the Ormat portfolio of projects and the Fish Lake project. The amount the Department would procure will depend on a variety of factors, including:

1. The amount of geothermal power Ormat will successfully be able to develop,
2. The import capability San José Clean Energy (SJCE), the Community Choice Aggregation program operated by the Department, and other participating Community Choice Aggregators (CCAs) will be able to obtain for geothermal deliveries from Nevada, and
3. The number of CCAs proposing to participate in the projects that obtain approval for such participation from their respective governing bodies.

Entering into these agreements would allow SJCE to make progress towards complying, and potentially fully comply with the Firm Clean Resources (FCR) (geothermal or biomass) requirement issued by the June 6, 2021 California Public Utilities Commission (CPUC) in Decision 21-06-035. This decision requires all load serving entities (LSEs), such as investor-owned utilities and CCAs, to procure resources in 2023 through 2026 to maintain mid-term reliability due in part to the phased retirement of the Diablo Canyon Power Plant in 2024 and 2025. It also requires SJCE to procure a minimum of 21.5 MW of FCR with the ability to be online during a peak period each year, in addition to 226.5 MW of other technologies.

EXECUTIVE SUMMARY

On June 6, 2021, the CPUC released its Decision 21-06-035 Requiring Procurement to Address Mid-term Reliability (2023-2026) which required SJCE to procure 21.5 MW of FCR to be online by June 2026 and available during a peak month each year. Ormat's portfolio of geothermal projects and Open Mountain Energy's Fish Lake Geothermal project will allow SJCE to make progress towards meeting this requirement.

The Ormat portfolio of projects will consist of up to eight geothermal projects in Nevada and California with a capacity quantity of at least 64 MW and no more than 125 MW from the projects in the portfolio. SJCE is expected to obtain from the projects between 12.54 MW, if

Ormat develops the minimum 64 MW, and 24.5 MW, if Ormat develops the full 125 MW, but seeks approval for up to 31 MW to be able to accept additional capacity in the case that an interested CCA does not receive approval to participate or if one or more of the other participating CCAs default as further described in the Agreement Structure section below. The agreement term is 20 years with a maximum annual contract cost to SJCE of \$21.5 million.

The Fish Lake project is a 13 MW geothermal facility located in Esmeralda County, Nevada. Its expected commercial online date is June 2024. If all CCAs expected to participate in the project approve participation in the Fish Lake project, SJCE is expected to obtain 2.26 MW from the project. Staff recommends approving up to 3 MW of procurement from the Fish Lake project through CC Power in the case that an interested CCA does not receive approval to participate or if one or more of the other participating CCAs default as further described in the Agreement Structure section below. The agreement term is 20 years with a maximum annual contract cost to SJCE of \$1.9 million.

The contracting structure with CC Power includes four separate types of agreements for each project, one signed only by CC Power and the seller, and three that are signed by the participating CCAs. These agreements work in tandem. The structure establishes CC Power as the buyer of the energy. The sellers have direct recourse through CC Power to each participating CCA for its share of the contract payments, but this recourse is limited to only that CCA's share. The participating CCAs receive their related share of the contract benefits (the energy, renewable attributes, and resource adequacy) from CC Power. CC Power has no assets but is required to maintain an appropriate suite of insurances.

BACKGROUND

Section 26.50.020 of the San José Municipal Code states that the City of San José (City) may enter into contracts to procure power products for a term up to 25 years. Section 26.50.050 of the San José Municipal Code requires the Department director to submit a Risk Management Policy to City Council. On May 1, 2018, the City Council approved the Energy Risk Management Policy. The Energy Risk Management Policy and any changes to it must be approved by City Council. The Energy Risk Management Regulations and any changes to the regulations are approved by the City Manager's Risk Oversight Committee, and staff have developed updates to the Risk Management Regulations that have been approved by the City Manager's Risk Oversight Committee.

Under the Energy Risk Management Policy, the City Manager's Risk Oversight Committee is responsible for overseeing the Department's risk management. The Energy Risk Management Policy and associated Energy Risk Management Regulations set forth a risk control structure and procurement requirements that apply to SJCE procurement activities. The City Manager's Risk Oversight Committee has been in operation since mid-2018.

On January 5, 2021, City Council authorized the City Manager or his/her designee to join CC Power, execute the CC Power Agency Joint Powers Agreement, and pay the applicable share of CC Power's annual costs in an amount not to exceed the contract authority of the City Manager

for the corresponding fiscal year. City Council approval is still required for SJCE to participate in any new CC Power project agreement.

On June 6, 2021, the CPUC released its Decision 21-06-035 Requiring Procurement to Address Mid-term Reliability (2023-2026) which required all LSEs to procure their proportional share of 11,500 MW of net-qualifying capacity in long-term contracts over the period of calendar years 2023 through 2026. The CPUC assigned to SJCE 248 MW of this additional procurement, including a requirement for 21.5 MW of FCR that must be available during September each year and be online by June 2026. The most common technologies that can meet the FCR requirement are geothermal and biomass.

On July 19, 2022, the Department received unanimous approval from the City Manager's Risk Oversight Committee to make a recommendation to City Council to authorize the City Manager to enter into Project Participation Share Agreements, Buyer Liability Pass Through Agreements, and Coordinated Operations Agreements for the Ormat portfolio of projects and the Fish Lake project.

ANALYSIS

CPUC Procurement Mandate

In Decision 21-06-035, the CPUC required all LSEs to procure a significant amount of additional Net Qualifying Capacity. Net Qualifying Capacity represents the amount of capacity from a project available in September, the highest energy use month in California. LSEs must meet this new requirement by executing long-term contracts during the period between 2023 and 2026¹. This procurement requirement is intended to replace the capacity and greenhouse-gas-free energy the California electric system will lose from the phased retirement of the nuclear Diablo Canyon Power Plant in 2024 and 2025.

The CPUC assigned to SJCE 248 MW of this additional Net Qualifying Capacity as follows:

- 2023: 43 MW. SJCE expects to comply with this requirement with its Clines Corner Wind agreement.
- 2024: 129 MW. SJCE expects to comply with this requirement through a solicitation underway.
- 2025: 32 MW. SJCE expects to comply with this requirement through a solicitation underway.
- 2026: 21.5 MW of long-duration storage (projects that can store energy for a period of eight hours or longer). SJCE expects to meet its long-duration storage requirement with the Tumbleweed and Goal Line projects previously approved by City Council.
- 2026: 21.5 MW of FCR (projects that deliver firm power and have no on-site emissions or that otherwise meet the state Renewable Portfolio Standard requirements). SJCE expects to meet its FCR resource requirement from the Ormat portfolio of projects and the Fish Lake project recommended in this memorandum, provided that Ormat can

¹CPUC Decision 21-06-035 <https://docs.cpuc.ca.gov/PublishedDocs/Published/G000/M389/K155/389155856.PDF>

develop all the projects possible under the contract. If this does not happen, SJCE will have to obtain additional FCR.

FCR

FCR are energy projects that deliver around-the-clock baseload power and qualify as renewable under the State's Renewable Portfolio Standard. The two main technologies that qualify as FCR are geothermal and biomass. Geothermal uses heat from the earth to create steam and generate electricity. Biomass uses waste wood and other organic waste as fuel to generate electricity. These resources are different than wind and solar in that they can generate all hours of the day. The CPUC is mandating these new resources to replace the carbon-free power produced by the nuclear Diablo Canyon Power Plant which is set to retire in 2024 and 2025. There are a limited number of new geothermal and biomass projects being built due to siting issues. Many entities are required to procure these projects, which has caused some scarcity in the market and rising prices. SJCE seeks to procure these resources in conjunction with several other CCAs through CC Power to benefit from combined buying power and economies of scale.

CC Power FCR Solicitation

CC Power is a Joint Powers Authority comprised of 10 CCAs in northern and central California.² CC Power was formed to allow CCAs to jointly procure projects to take advantage of potential economies of scale and to demonstrate to policymakers that CCAs can bring online projects needed to maintain reliability.

CC Power released a solicitation on October 25, 2021 seeking FCR with an online date no later than June 2026. A total of six entities submitted 16 projects in response to the solicitation with geothermal and biomass projects in California and Nevada. CC Power completed a detailed assessment of the projects offered, including factors such as expected value, technology, location and transmission issues, project risk, environmental impact, labor, and offeror experience. The results were used to shortlist a portfolio of geothermal projects bid by Ormat and the Open Mountain Energy Fish Lake Geothermal project.

Geothermal energy is a low-carbon power source harnessed by digging wells deep underground to harness the earth's natural heat and convert it to power. Geothermal energy has a generation profile similar to baseload gas and hydroelectric plants which can deliver firm power around the clock. CC Power completed negotiations and the CC Power Board approved the proposed agreements on May 31, 2022. CC Power signed the agreements immediately after, subject to the approval of the participating CCAs within 120 days. The CC Power Board acted quickly in order to be able to submit a request for import capability expansion with the California Independent System Operator (CAISO) by a June 1, 2022 submission deadline. The request required a signed power purchase agreement.

Any LSE wishing to bring power into California from out of state to qualify as resource adequacy must have Import Allocation Rights (IARs) from the CAISO. As the Fish Lake project

² <https://cacomunitypower.org/members/>

and five of the potential Ormat projects are located in Nevada, each CCA participating in this effort will need to obtain IARs at various locations called branch groups. This is accomplished via a multi-step process that results in the CAISO allocating specific quantities at each delivery point the LSE requested. If the overall request for any location is greater than its available capability, the CAISO will award IARs proportionally to each requesting LSE based on the size of the request. If a CCA does not receive the IARs it needs, there is a secondary market for procuring IARs from other LSEs. Under the Ormat agreement, CC Power has the right to reject a proposed project if the CCAs were unable to obtain the necessary IARs.

The Ormat Portfolio of Projects

The Ormat portfolio of projects is being developed by Ormat Technologies, Inc. (Ormat). Ormat, a leading geothermal company, has over five decades of experience in developing geothermal powers and is a vertically integrated company engaged in geothermal and recovered energy generation. Ormat owns, operates, designs, manufactures, and sells geothermal power plants primarily based on the Ormat Energy Converter – a power generation unit that converts low-, medium- and high-temperature heat into electricity. Ormat has engineered, manufactured, and constructed power plants totaling over 3,000 MW of gross capacity and currently owns a generating portfolio of 1,100 MW globally in the United States (California, Nevada, Oregon, Idaho, and Hawaii), Guatemala, Guadeloupe, Kenya, and Indonesia.

The Ormat power purchase agreement with CC Power requires that Ormat develop a suite of up to eight geothermal projects, five of which are in Nevada and three of which are in California. The agreement requires Ormat to develop at least 64 MW of power and no more than 125 MW from a portfolio of projects, and to offer these projects to CC Power for its acceptance. When a project is presented to CC Power, CC Power may within 90 days either accept it or, if the participating CCAs have not been able to obtain IARs for the project, reject it. After the 90-day deadline, if CC Power has not rejected the project, CC Power may defer acceptance or rejection until September 30, 2027, provided that any subsequent acceptance would defer the in-service date one day for every day of acceptance delay beyond the 90-day deadline for acceptance.

Ormat must offer any output from the projects in the portfolio to CC Power first up to the 125 MW before offering the output to another potential buyer. If CC Power rejects a project, the capacity of the project is deducted from the portfolio maximum of 125 MW. In addition, the 125 MW maximum amount may be reduced by CC Power to the extent one of the existing CCAs is unable to get Board or Council approval for their participation.

The expected in-service dates vary with the underlying projects commencing as early as 2024. The term of the agreement is 20 years of delivery starting when the first project comes online. SJCE is entitled to a proportional share of each project. At the 125 MW maximum, SJCE's share would be 24.5 MW. In addition, if a participating CCA defaults after a project has been accepted by CC Power, the remaining CCAs may be required to assume their proportional share of the defaulting CCA's share, up to an additional 25 percent of that CCAs initial share. For SJCE, the additional potential step-up amount is 6.13 MW for a total maximum amount of 30.63 MW.

Table 1. CCAs Participating in the Ormat Portfolio

CCA	Credit Rating	Share of Projects
Central Coast Community Energy	S&P A	17.9%
Clean Power SF (City of San Francisco Program, administered by the San Francisco Public Utilities Commission)	Moody's A2	13.9%
Peninsula Clean Energy	Moody's Baa2/Fitch BBB+	17.1%
Redwood Clean Energy Authority	N/A	3.2%
San José Clean Energy	SJCE: N/A. City of San José: Moody's Aa1; S&P & Fitch AA+	19.6%
Silicon Valley Clean Energy	Moody's Baa2/S&P A	13.4%
Sonoma Clean Power Authority	S&P A	11.2%
Valley Clean Energy	N/A	3.7%

Project Terms:

- Maximum annual cost to SJCE: Between \$9 and \$21.5 million
- Maximum total contract cost to SJCE: \$430 million
- Term: 20 years
- Project size: 125 MW Max; SJCE Share: Between 12.54 and 30.63 MW (depending on the total MW made available by Ormat and whether SJCE is required to step up for a share of another CCA)

Staff recommends approval for 31 MW to be able to accept additional capacity if the maximum portfolio amount becomes available and in order to accept additional capacity if one or more CCAs default and SJCE must step up its share once the agreements are executed as further described in the Agreement Structure section below.

The Fish Lake Geothermal project

The Fish Lake Geothermal project is a 13 MW geothermal project being developed by Open Mountain Energy, LLC in the Fish Lake Valley area of Esmeralda County, Nevada. Open Mountain Energy has entered into power purchase agreements with Southern California Public Power Authority for two projects in Nevada (Whitegrass No. 1 and Star Peak Geothermal). Whitegrass No. 1 was constructed in 2017 and has been delivering energy to Southern California Public Power Authority since February of 2018. Star Peak Geothermal is very similar in size and technology as Fish Lake Geothermal. Construction for Star Peak Geothermal is 95 percent complete and the project should achieve its commercial online date in Q1 of 2022.

Table 2. CCAs Participating in the Fish Lake Project

CCA	Credit Rating	Share of Projects
Central Coast Community Energy	S&P A	18.6%
Clean Power SF (City of San Francisco Program, administered by the San Francisco Public Utilities Commission)	Moody's A2	14.5%
Peninsula Clean Energy	Moody's Baa2/Fitch BBB+	17.8%
Redwood Clean Energy Authority	N/A	2.8%
San José Clean Energy	SJCE: N/A. City of San José: Moody's Aa1; S&P & Fitch AA+	17.4%
Silicon Valley Clean Energy	Moody's Baa2/S&P A	14.0%
Sonoma Clean Power Authority	S&P A	11.7%
Valley Clean Energy	N/A	3.2%

Project Terms:

- Maximum annual cost to SJCE: Between \$1.5 and \$1.9 million
- Maximum total contract cost to SJCE: \$38 million
- Term: 20 years
- Project size: 13 MW; SJCE Share: Between 2.26 and 2.83 MW (depending on whether SJCE is required to step up for a share of another CCA)

Staff recommends approval for 3 MW to be able to accept additional capacity if one or more CCAs default and SJCE must step up its share once the agreements are executed as further described in the Agreement Structure section below.

In addition to allowing SJCE to make progress towards meeting its FCR CPUC requirement, contracting for the output of the Ormat and Fisk Lake geothermal projects will give SJCE needed resource adequacy, renewable energy credits, and low-carbon power, including deliveries in the more valuable evening hours. Resource adequacy is a state requirement for LSEs such as CCAs and investor-owned utilities to pay generating resources to be available to serve load to ensure that sufficient generating plants are in place and able to serve load at all times.

Agreement Structure

The participants of the CC Power long-duration storage procurement effort developed a comprehensive contracting structure that includes four separate types of agreements, each among different entities, that work in tandem. For FCR, CC Power used a similar contracting structure which establishes CC Power as the buyer of the energy. The seller has direct recourse through CC Power to each participating CCA for its share of the contract payments, but this recourse is limited to only that CCA's share. Each participating CCA receives from CC Power its related share of the contract benefits. CC Power has no assets but is required to maintain an appropriate

suite of insurances. Finally, each CCA commits to assuming no more than 25 percent more than its initial share of the contracted costs and benefits, if one or more of the other participating CCAs default.

Power Purchase Agreements (PPA)

These agreements are between CC Power and the developers, Ormat and Open Mountain Energy, LLC, respectively. These agreements are not signed by the participating CCAs and will not be signed by the City. These agreements set forth the terms for delivery of energy between CC Power and the developers. They give CC Power the right to direct operation of the generators within the project's operational constraints. The benefits of those services are distributed to the participating CCAs pursuant to the Project Participation Share Agreement.

Buyer Liability Pass Through Agreement (Exhibit to PPA)

This agreement is between the developer or its affiliate, CC Power, and each participating CCA. It is an exhibit to the PPA but does not make the CCAs parties to the PPA. There is one Buyer Liability Pass Through Agreement per participating CCA per agreement. In this agreement, each CCA agrees to pay its share of CC Power's ongoing payment obligations under the PPA, and its share of the PPA termination payment if the PPA is terminated prematurely (for example in the case of a CC Power dissolution). In exchange, the agreement limits each CCA's liability to the developer to no more than its share of ongoing payment obligations and the CCA's share of the termination payment (in the event of a CC Power default under the PPA).

Project Participation Share Agreement

This agreement is between CC Power and all the participating CCAs. The agreement:

- Defines each CCA's share of the project's benefits and costs.
- Requires each CCA to take up to an additional 25 percent of capacity beyond the CCAs initial share if another CCA defaults (i.e., step-up the CCA share).
- Requires each CCA to prepay an amount equal to three months of its estimated monthly payment with CC Power for the duration of the contract.
- Defines how decisions related to the project will be made.
 - Key decisions are made by the CC Power Board with voting limited to participating CCAs. Non-participating CCAs must abstain from voting.

Coordinated Operations Agreement

This agreement is between CC Power and all participating CCAs. It is expected to define how the decisions will be made about operation of the resource. It does not address payment issues; these issues are addressed in the Project Participation Share Agreement and the Buyer Liability Pass Through Agreement.

CONCLUSION

Staff recommends City Council adopt a resolution authorizing the City Manager or her designee to execute the Project Participation Share Agreements and Buyer Liability Pass Through Agreements, and to negotiate and execute the Coordinated Operations Agreements, and thereby agree to procure between 14.8 and 34 MW of FCR from the Fish Lake project and the Ormat portfolio of projects.

EVALUATION AND FOLLOW-UP

No additional follow-up is expected.

CLIMATE SMART SAN JOSÉ

The recommendation in this memorandum aligns with one or more Climate Smart San José energy, water, or mobility goals.

PUBLIC OUTREACH

This memorandum will be posted on the City's website for the August 30, 2022 City Council meeting.

COORDINATION

This memorandum has been coordinated with the City Attorney's Office, the City Manager's Budget Office, and the Finance Department.

COMMISSION RECOMMENDATION/INPUT

These recommendations were not considered by the Clean Energy Community Advisory Commission.

FISCAL/POLICY ALIGNMENT

The recommended actions support Climate Smart San José (action 1.1 Transition to a Renewable Energy Future) and the Envision San José 2040 General Plan (Goal MS-2 and Appendix 8: GHG Reduction Strategy).

HONORABLE MAYOR AND CITY COUNCIL

August 8, 2022

Subject: Actions Related to Procuring Ormat and Fish Lake Geothermal Power

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COST SUMMARY/IMPLICATIONS

Entering into the FCR agreements would cost SJCE between \$18,500,000 and \$23,400,000 million annually, beginning in June 2024. The necessary funding will be allocated as part of the development of future budget processes.

CEQA

Not a Project, File No. PP17-003, Agreements/Contracts (New or Amended) resulting in no physical changes to the environment.

/s/

LORI MITCHELL

Director, Community Energy

For questions, please contact Lori Mitchell, Director of Community Energy Department, at (408) 535-4880.