

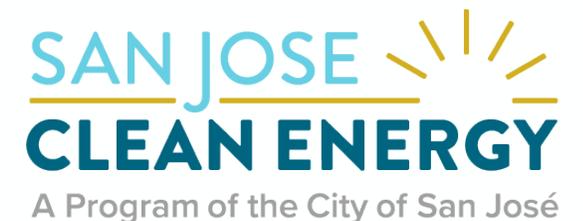
GEOHERMAL PROCUREMENT

San José City Council

August 30, 2022

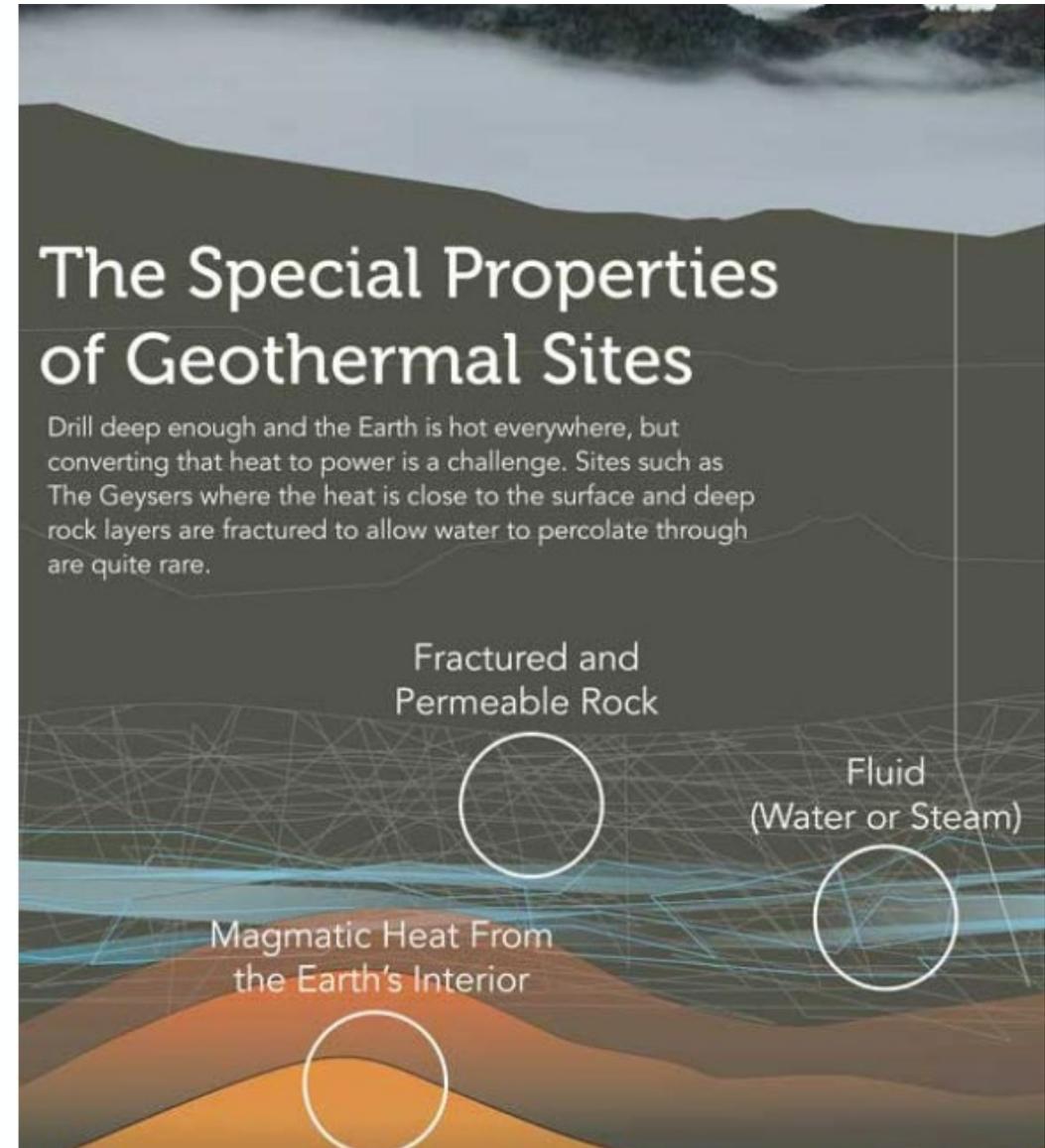
Lori Mitchell, Director of Community Energy

Jeanne M. Solé, Deputy Director of Power Resources



WHAT IS GEOTHERMAL?

- Geothermal uses heat from the earth to create steam and generate electricity.
- Can generate all hours of the day (operates 24x7: firm power).
- Generation profile similar to baseload gas or hydro plant.
- Clean GHG-free power.
- Limited supply due to siting issues.



Source: www.geysers.com/geothermal

BACKGROUND

- 2021 CPUC Decision 21-06-035 requires SJCE to buy 247 MW of clean capacity by 2026, including 21.5 MW of geothermal or biomass power.
- SJCE participated in a CC Power RFP for geothermal and biomass power with offers due December 2021.
- Bids from 6 bidders and 16 projects (5 in CA). CC Power shortlisted:
 - Small project (13 MW) from Open Mountain Energy, LLC (OME)
 - A portfolio of projects (up to 125 MW) from Ormat Nevada, Inc. (Ormat), including 3 projects in CA and 5 in NV
- Seven other CCAs* participating in both agreements: 5 are investment grade credit rated; other 2 are each taking less than 5% of the project.

*Central Coast Community Energy, CleanPower San Francisco, Peninsula Clean Energy, Sonoma Clean Power, Redwood Coast Energy Authority, Silicon Valley Clean Energy, and Valley Clean Energy.

PROJECT 1: ORMAT PORTFOLIO OF GOETHERMAL PROJECTS

Ormat is a leading geothermal company:

- Over 5 decades experience developing projects.
- Developed over 3,000 MW.
- Owns a portfolio of 1,100 MW in the California, Nevada, Oregon, Idaho, Hawaii, Guatemala, Guadeloupe, Kenya, and Indonesia.

Project size: Portfolio of projects. Min of 64 MW, max of 125 MW.

- Ormat to offer projects as they become available up to 125 MW; CC Power may accept or reject.
- At 64 MW, SJCE share will be 12.5 MW.
- At 125 MW, SJCE's share will be 24.5 MW.
- SJCE to possibly bring forward additional recommendation depending on development progress.

PROJECT 1: ORMAT PORTFOLIO OF GOETHERMAL PROJECTS

- Cost not to exceed: \$21.5 million annually, \$430 million in aggregate.
- Location: 3 projects are in CA, 5 are in NV.
- Online date: Varies per project. As early as June 2024.
- Term: 20 years from online date of first project.
- **Seeking approval for up to 31 MW** to be able to take additional capacity if other CCAs forgo their share. Can be used to meet resource adequacy and energy needs.



Ormat's Mammoth geothermal facility in CA

PROJECT 2: OPEN MOUNTAIN ENERGY'S FISH LAKE GEOTHERMAL PROJECT

OME has entered into PPAs with Southern California Public Power Authority (SCPPA) for two projects in Nevada:

- Whitegrass No. 1 was constructed in 2017 and has been delivering energy since February 2018.
- Star Peak Geothermal is very similar in size and technology as Fish Lake Geothermal and began delivering power in August 2022.

Project size: 13 MW; SJCE share: 2.26 MW

- SJCE step-up: 0.57 MW
- SJCE max: 2.83 MW
- Small volume, best price, reduces risk of relying exclusively on Ormat portfolio.

PROJECT 2: OPEN MOUNTAIN ENERGY'S FISH LAKE GEOTHERMAL PROJECT

- Cost not to exceed: \$1.9 million annually; \$38 million in aggregate
- Location: Esmeralda County, Nevada
- Online date: June 1, 2024
- Term: 20 years
- **Seeking approval for up to 3 MW** to be able to take additional capacity if other CCAs forgo their share. Can be used to meet resource adequacy and energy needs.



Open Mountain Energy's geothermal facility in NV

AGREEMENT STRUCTURE

1. Power Purchase Agreements

- CC Power buys the energy from the project developers.

2. Project Participation Share Agreements

- Each participating CCA receives from CC Power its share of the energy and agrees to pay CC Power for these services.
- CC Power Board makes key decisions relating to the projects pursuant to voting by only the project participants.

3. Buyer Liability Pass Through Agreements

- The developers have direct recourse to each participating CCA for its share of the contract payments, but only for that CCA's share of the payments.
- Required as CC Power has no assets or revenues, though it maintains insurance.

4. Coordinated Operations Agreements

- Defines how the resources will be operated between CC Power and the participating CCAs.

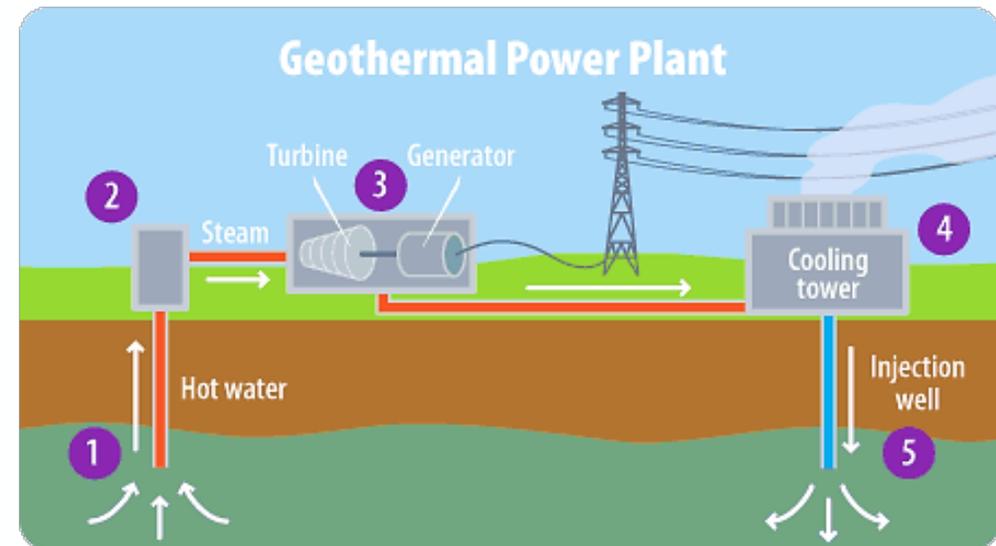
QUESTIONS?

Recommendations:

- Authorize the City Manager to procure up to 31 MW from Ormat's portfolio of geothermal projects not to exceed \$21.5 million annually and \$430 million in aggregate over 20 years.
- Authorize the City Manager to negotiate and execute a Coordinated Operations Agreement for the Ormat portfolio of geothermal projects.
- Authorize the City Manager to procure up to 3 MW from Fish Lake Geothermal not to exceed \$1.9 million annually and \$38 million in aggregate over 20 years.
- Authorize the City Manager to negotiate and execute a Coordinated Operations Agreement for the Fish Lake Geothermal project.

Staff:

- Lori Mitchell, Director
- Jeanne Solé, Deputy Director



Environmental Protection Agency