

**VALLEY CLEAN ENERGY ALLIANCE****Staff Report – Item 9**

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**TO:** Community Advisory Committee

**FROM:** Gordon Samuel, Assistant General Manager & Director of Power Services

**SUBJECT:** CC Power participation in geothermal projects from Ormat Nevada Inc. and Open Mountain Energy, LLC

**DATE:** June 23, 2022

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**Recommendation**

1. Recommend that VCE participate in the California Community Power (CC Power) geothermal projects.
  - a. Ormat Nevada Inc. (Ormat) Portfolio of Geothermal Projects
  - b. Open Mountain Energy LLC., Fish Lake Geothermal (OME)

**Background**

Through the 2020 Integrated Resource Planning (IRP) proceeding, the California Public Utilities Commission (CPUC) had identified the need for additional clean energy resources and capacity including firm and/or baseload clean resources, and storage resources, to enable grid integration of a large fleet of intermittent resources to meet California's greenhouse gas emission reduction goals and to replace several methane gas once-through-cooling (OTC) power plants that are scheduled to be shut down, and the Diablo Canyon Nuclear Power Plant (DCNPP) slated to retire between in 2024 and 2025.

Subsequently, in June 2021, as part of the 2020 IRP the CPUC issued through a decision order (D.21-06-035) the Mid-term Reliability Procurement Order ("MTR Order") requiring jurisdictional load serving entities (LSEs), such as VCE, to procure and/or develop a collective 11,500 MW of new capacity by 2026. VCE's share of the MTR Order is 44 MW which is determined based on VCE's load ratio to the CPUC's jurisdictional load.

Included within the MTR Order is an identified need of 1,000 MW of new incremental capacity from firm clean resources (FCR) delivered from geothermal and/or biomass resources with an on-line date by August 2026. VCE's share of the FCR requirement is approximately 4 MW.

In October 2021, CC Power issued the Firm Clean Energy Resources RFO for resources that meet the CPUC's requirements set forth in (D.21-06-035) to procure new resources with at least 80% capacity factor that must not be subject to use limitations or be weather dependent required for compliance in 2026. Offers were due December 13, 2021 and CC Power received bids from 6 bidders and 16 projects with only 5 of the projects located in California. Two bidders were shortlisted, one project from OME and the portfolio of projects from Ormat. On May 31, 2022 CC

Power board of directors (“Board”) unanimously approved participation in these projects and authorized the CC Power General Manager to execute PPAs with Ormat and OME.

**Analysis and Discussion**

The two CC Power FCR projects proposed will continue to bridge the gap towards VCE meeting CPUC MTR compliance while also providing RPS eligible long-term renewable energy, delivered with a high capacity factor in support of state mandated and board directed RPS goals. Further, because of the firm nature of geothermal resources, both projects are expected to provide a reliable source of RA. The recommended projects are located outside of the California Independent System Operator (CAISO) balancing authority, as such VCE will need to retain import capability from the CAISO to enable the resources to meet CPUC RA requirements and therefore count towards VCE's MTR obligations.

Following is a summary of the two projects recommended for approval.

**1. Ormat Geothermal Portfolio**

Ormat will provide the project participants a portfolio of new geothermal projects located in California (3) and Nevada (5). The projects are still under development and the precise capacity per project and available to CC Power is not yet known. At a minimum the portfolio will provide 64 MW and will not exceed 125 MW. As projects materialize, CC Power and the participants will be given the opportunity to elect projects into the portfolio of resources. All projects included in the portfolio will need to meet RPS PCC1 and RA eligibility requirements satisfied by obtaining the necessary import capacity rights. In the event VCE and/or the other participants are unable to obtain import capacity rights for a specific geothermal project, the participants can elect not to include the resource in the portfolio. VCE’s expected share of the Ormat portfolio is 4.63 megawatts (MW) of capacity and approximately 35,380 megawatt hours (MWh) of energy annually or 4.8% of retail sales.

Ormat is a leading geothermal company, which 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 (net), spread globally in the United States (California, Nevada, Oregon, Idaho and Hawaii), Guatemala, Guadeloupe, Kenya and Indonesia.

*Project Overview*

<b>Project Name</b>	<b>Ormat Geothermal Portfolio</b>
<b>Technology</b>	Binary Geothermal
<b>Portfolio Capacity &amp; Expected Annual Energy</b>	64 to 125 MW; VCE’s expected share 4.63 MW and 35,380 MWhs

<b>Expected Commercial Operation Date &amp; Term</b>	Varies with project, as early as 2024; 20 yrs
<b>Developer</b>	Ormat Nevada Inc.
<b>Location</b>	Nevada and Imperial Valley, CA
<b>Price</b>	Fixed price \$/MWh, no escalation

## 2. Open Mountain Energy

OME’s Fish Lake Geothermal project is 13 MW of new capacity located in Esmeralda County, Nevada. The project will meet RPS PCC1 eligibility requirements and RA, provided VCE obtains the import capability rights. Once the agreements are fully executed, VCE is obligated to take its allocation regardless of whether it is able to obtain import capability. VCE’s expected share from Fish Lake Geothermal is 0.42 MW of capacity and approximately 3,460 MWh of energy annually or 0.5% of retail sales.

Open Mountain Energy combines its geothermal and project development expertise with Kaishan Group's power plant technologies and manufacturing to form a cutting-edge industry leading vertically integrated geothermal energy company.

### Project Overview

<b>Project Name</b>	<b>Fish Lake Geothermal</b>
<b>Technology</b>	Geothermal
<b>Portfolio Capacity &amp; Expected Annual Energy</b>	13 MW; VCE’s expected share 0.42 MW and 3,460 MWhs
<b>Expected Commercial Operation Date &amp; Term</b>	June 2024; 20 yrs
<b>Developer</b>	Open Mountain Energy
<b>Location</b>	Esmeralda County, Nevada
<b>Price</b>	Fixed price \$/MWh, no escalation

### CCA Participation

The eight participating CCAs will receive an entitlement share of the obligations and benefits associated with its capacity share. The below table is the expected entitlement share percentage and megawatts (MW) per participating CC Power member. The agreements have a step-up provision capped at 125% of the original entitlement share. The step-up provision is necessary to ensure the PPA between CC Power and the project seller will continue in the event of one or more

project participants default. In such case, rather than allowing the PPA to terminate, the remaining participants will increase their entitlement share.

<b>CCA</b>	<b>OME Nameplate</b>	<b>OME Step-up</b>	<b>Ormat Nameplate</b>	<b>Ormat Step-up</b>	<b>Total Nameplate</b>	<b>Total Step-up</b>
<b>3CE</b>	2.42	0.60	22.38	5.59	24.79	6.20
<b>CPSF</b>	1.89	0.47	17.38	4.34	19.26	4.82
<b>PCE</b>	2.31	0.58	21.38	5.34	23.69	5.92
<b>RCEA</b>	0.36	0.09	4.00	1.00	4.36	1.09
<b>SJCE</b>	2.26	0.57	24.50	6.13	26.76	6.69
<b>SVCE</b>	1.82	0.46	16.75	4.19	18.57	4.64
<b>SCPA</b>	1.52	0.38	14.00	3.50	15.52	3.88
<b>VCE</b>	0.42	0.10	4.63	1.16	5.04	1.26
<b>TOTAL</b>	<b>13.00</b>	<b>3.25</b>	<b>125.00</b>	<b>31.25</b>	<b>138.00</b>	<b>34.50</b>

Workforce Development

Consistent with the CC Power Board direction for enhanced contracting conditions, the developer will construct the project under a project labor agreement, thus assuring payment of prevailing wages and use of apprenticeship programs. For projects built in Nevada, both developers will adhere to the Nevada prevailing wage requirement with audit, or project labor agreement. Alternatively, developers may apply for and receive Nevada’s Renewable Energy Tax Abatement (RETA) benefits which require construction workforce is paid no less than 175% of the statewide average annual wage and provide adequate health insurance. The projects will also adhere to CC Power environmental and environmental justice conditions.

Strategic Plan

The geothermal projects support the following objectives in VCE’s strategic plan:

Goal 2: Manage power supply resources to consistently exceed California’s Renewable Portfolio Standard (RPS) while working toward a resource portfolio that is 100% carbon neutral by 2030.

2.3 Objective: Deploy storage and other strategies to achieve renewable, carbon neutral, resource adequacy, and resiliency objectives.

Conclusion

Staff will be asking the Board to approve VCE’s participation in the geothermal projects at the July 14, 2022 meeting.