



Staff Report - Item 02

To: Sonoma Clean Power Authority Community Advisory Committee
From: Ryan Tracey, Director of Planning & Analytics
Geof Syphers, Chief Executive Officer
Issue: Receive Geothermal Opportunity Zone Update
Date: January 19, 2023

Background

The Geothermal Opportunity Zone (GeoZone) was established by the SCP Board of Directors and the Boards of Supervisors in Sonoma and Mendocino Counties to explore expanding local geothermal power capacity. The purpose of the GeoZone is to develop the resources necessary to allow SCP to stop relying on natural gas power plants altogether. To that end, the GeoZone is seeking to sustain existing local geothermal production and add 500 MW of new geothermal capacity.

Ongoing updates, information, and materials about the GeoZone can be found at <https://sonomacleanpower.org/geozone>.

Cooperation Agreements

Staff are actively negotiating draft cooperation agreements for the three selected private partners: Eavor Inc., Chevron New Technologies, and Cyrq Energy. Each cooperation agreement will be presented to the CAC and Board for approval before execution. Staff expect that at least one, and as many as all three agreements will be ready to present to the CAC for the February 16th meeting.

Department of Energy Long-Duration Storage Grant

In consultation with SCP, Cyrq Energy submitted a Letter of Intent to the Department of Energy's (DOE) Office of Clean Energy Demonstrations in December 2022 for their [long-duration storage funding opportunity](#). The letter is a prerequisite for submitting a full grant funding application in March 2023. Staff will be working closely with Cyrq to prepare the final application, with a specific focus on describing the community

benefits and stakeholder engagement opportunities of a GeoZone project.

Cyrq's GeoZone project involves installing thermal storage at an existing dry steam generating unit at the Geysers. The project will charge by heating thermal mass during the day when geothermal output is in lower demand and then discharge in the evening by using the heated mass to superheat steam produced from the wellfield—resulting in greatly enhanced output. Cyrq is the lead project applicant and is joined by SCP, Babcock & Wilcox (technology provider), and EthosEnergy (turbine experts).

Because of the novel ability of Cyrq's technology to create valuable flexibility in geothermal output, SCP will be asking its member jurisdictions and community organizations for letters of support for the DOE grant.

Site Host Opportunities

A key focus of SCP and development partners is identifying potential site hosts for GeoZone projects. Although establishing site control for projects is a responsibility of GeoZone partners, SCP's relationship with community members has proved valuable in networking potential site hosts with GeoZone partners. Any parties interested in hosting a GeoZone project are encouraged to contact SCP staff at GeoZone@sonomacleanpower.org.

Other News

- SCP's GeoZone partner Eavor signed their first [Power Purchase Agreement](#) in the United States with NV Energy in Nevada. Eavor will build a facility that is dispatchable and can provide over 16 MW during high-need hours. The agreement is dependent on successful results from a 7-10 km deep calibration well.
- Chevron New Energies [announced the creation of a joint venture](#) with Baseload Capital of Sweden to develop geothermal projects in the United States. Baseload Capital's expertise is on the development of low-temperature conventional resources. The joint venture does not specifically impact GeoZone but will accelerate Chevron's hands-on learning on developing domestic geothermal projects.
- Several contracts for new local geothermal capacity with other electric providers were recently announced:
 - **Bottle Rock:** Open Mountain Energy is building a 7 MW binary

geothermal plant at the site of the idle Bottle Rock power plant in Lake County with an expected commissioning date of June 2024. Marin Clean Energy has executed a 21-year offtake agreement with Open Mountain Energy. Open Mountain Energy is the developer of the Fish Lake project in Nevada procured earlier in 2022 by SCP through CC Power.

- **Incremental Geysers:** Calpine is expanding its wellfield to increase Geysers generation by 25 MW. The steam will be delivered to existing steam turbine generators with expected commissioning in June 2025. Marin Clean Energy and Clean Power Alliance have executed 20-year offtake agreements for the project output that will be used to meet their CPUC mid-term reliability order obligations. Marin Clean Energy and Clean Power Alliance each purchased 100 MW of existing capacity from the Geysers alongside the new capacity.
- The California Energy Commission (CEC) notified SCP that it is not currently interested in partnering with SCP on a potential application to the DOE's Grid Resilience and Innovation Partnership (GRIP) Programs grant. The CEC is specifically interested in focusing on opportunities specifically geared towards benefiting tribal communities. Although there are opportunities to develop a GeoZone project that benefits tribal communities, it is too early to narrow the GeoZone's focus. SCP or its GeoZone partners may consider applying for the GRIP grant separately.