



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: October 20, 2022

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

Following approval from the Board on October 6, staff executed Memorandums of Understanding and started actively drafting cooperation agreements with all three private partners: Eavor Inc., Chevron New Technologies, and Cyrq Energy. SCP and all three partners have finished reviewing an outline summarizing the key components of the cooperation agreement. Staff hopes to complete first drafts of the agreements, incorporating feedback from the outline review, later this month.

After language for each agreement is drafted, staff will bring the cooperation agreements to the CAC for review and the Board for approval before executing. Staff does not necessarily expect all agreements to be completed concurrently. Although all three agreements started from a common template, each agreement will have milestones and provisions that are specific to the counterparty's GeoZone proposal.

Site Opportunities

An early focus in the GeoZone will be identifying suitable sites to host new geothermal projects. Although private partners will be responsible for securing site control, SCP expects to use its relationships in the community to help convene potential site hosts. Staff has pro-actively identified several opportunities with public agencies, tribal land, and large private landowners in the region and is beginning to reach-out to gauge their interest in hosting projects. Staff will also welcome any input from the CAC or public concerning site opportunities by e-mail at geozone@sonomacleanpower.org.

Grant Opportunities

There are several grant opportunities staff is actively tracking for potential GeoZone funding including:

- **Department of Energy (DOE) Grid Resilience and Innovation Partnerships Program** - The DOE is funding \$10.5 billion in grants as part of the Bipartisan Infrastructure Law (BIL) to fund innovative projects that increase grid resiliency and facilitate deployment of cleaner energy sources. SCP responded to a Request for Information (RFI) on the program with comments supporting eligibility for projects like the GeoZone that are accelerating deployment of clean firm resources but may need financial assistance to overcome market and infrastructure barriers. The DOE may start accepting concept papers from applicants for this program by the end of the year.
- **California Energy Commission (CEC) Long-duration Storage** - The 2022-23 state budget included \$240 million for non-lithium long duration storage. Details of the program are expected to be discussed at one of the upcoming CEC Business Meetings. Cyrq Energy's thermal storage technology or dispatchable configurations of Eavor or Chevron New Energies may be strong candidates.
- **DOE Long-Duration Energy Storage Demonstration Initiative** - The DOE is expected to also award \$150 million in grants out of the Office of Clean Energy Demonstrations for innovative long-duration energy storage technologies. The estimated application opening date is by the end of this year.
- **DOE Bipartisan Infrastructure Law Enhanced Geothermal Systems (EGS) Pilot Demonstrations** - The DOE is awarding \$84 million for pilots to demonstrate new EGS technologies. SCP responded to an RFI in May 2022 with comments supporting a broad definition of technologies eligible for the grant—specifically asking that advanced closed-loop technologies be considered. SCP also

highlighted attributes of a likely GeoZone application, such as pro-active community involvement, that the DOE should preferentially consider. DOE has not announced a firm timetable for the application process.

California Public Utilities Commission (CPUC) Advocacy

The CPUC recently [released a report](#) it commissioned to investigate zero-carbon firm resources to consider for statewide resource planning in its Integrated Resource Planning (IRP) process. The report mostly relied on third-party sources to compare the cost and viability of different candidate technologies including small modular nuclear reactors, enhanced geothermal systems (EGS), carbon capture and storage (CCS), non-lithium energy storage (including hydrogen and renewable fuels). Possibly because of the long-time lag since the last significant California geothermal developments, the report stated that “all technologies except EGS show promise as zero-carbon firm capacity,” which is directly contradictory to SCP’s own research and analysis. The CPUC’s portfolio modeling is incredibly influential in determining the trajectory of California’s energy transition as it is used as the basis for transmission planning, procurement orders, and prioritization of state funding.

In response, staff submitted informal comments to the CPUC sharing its own robust outlook for geothermal resources in providing clean firm capacity. The comments referenced some of SCP’s own analysis as well as recent academic work confirming the immense economic potential of geothermal development. SCP will continue to monitor the representation of geothermal in statewide planning efforts and has alerted the Department of Energy Geothermal Technology Office of the CPUC’s preliminary findings.

Other News

- The DOE announced their latest “earthshot” of slashing the cost of EGS to \$45 per megawatt hour by 2035. Although speculative, the ambitious goal will guide DOE funding priorities and if successful will result in the widespread availability of clean and affordable energy.
- Chevron New Energies announced a joint collaboration agreement with Mitsui Oil Exploration Company (MOECO) to explore the feasibility of deploying advanced closed loop geothermal technology in Japan. Advanced closed. loop geothermal technology is also under consideration for Chevron New Energies’ development strategy in the GeoZone.