Sonoma Clean Power

Staff Report – Item 06

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:	**September 21, 2023**

Background

The Geothermal Opportunity Zone (GeoZone) is SCP's initiative to guide the development of local geothermal power that is compatible with community values and enables SCP to phase-out its dependency on natural gas power plants for reliability. The Community Advisory Committee (CAC) meetings are a regularly scheduled public forum for the community to receive updates and provide input on the GeoZone. The updates provided to the CAC each month, and minutes from any discussion are posted on SCPA's website at https://sonomacleanpower.org/geozone-public-updates. Additional background on the GeoZone can be found on the GeoZone webpage at https://sonomacleanpower.org/geozone.

Special Community Stakeholder Meeting

SCP hosted a special community stakeholder meeting in Cloverdale on September 18th to discuss proposed principles for new geothermal development. The presentation and summary of the meeting will be posted on the GeoZone webpage in the coming weeks. At the time of this report, people registered to participate include SCP's GeoZone partners and members of the local community, local and state government, labor, and environmental non-governmental organizations (NGOs). Feedback from this event will be shared with the public and the Community Advisory Committee to help craft a set of principles for new geothermal development.

Geothermal Listening Tour

In late August, SCP's CEO and Director of Planning and Analytics met with community

members around Lake County to better understand how geothermal development can impact communities. Lake County was visited because unlike Sonoma and Mendocino counties, it has a concentration of local communities that are near existing geothermal power facilities. The tour provided SCP staff with important background to inform the September 18th Cloverdale workshop and early stakeholder engagement for the GeoZone. A document summarizing the listening tour is included as an appendix to this staff memo and is posted on the GeoZone webpage.

Partner Activity

Chevron New Energies and Eavor Inc. continue to be focused on evaluating potential site opportunities for GeoZone pilot projects. Identifying potential project sites involves the partners connecting with landowners, researching mineral ownership rights (which govern who has the right to extract heat from the ground), geologic modeling, and characterizing electric grid transmission infrastructure. Eavor is currently completing an evaluation of surface geology to calibrate their modeling. Meanwhile, both Chevron New Energies and Eavor are working with contractors to develop a permitting plan. After site control is secured, both entities will need to apply for a geothermal exploration permit which will trigger a California Environmental Quality Act (CEQA) process. This process is distinct from a separate CEQA process that will be required for a future geothermal power plant and wellfield.

Cyrq Energy's long duration energy storage project is dependent on securing a commercial agreement from an existing geothermal operator. SCP is supporting Cyrq Energy in developing a business case, including forecasting potential market revenues, to inform discussions with a potential host. Securing a commercial agreement may be dependent on engineering work beyond a feasibility analysis Cyrq Energy performed to support a grant application earlier this year.

Grant Funding

SCP and GeoZone partners are still awaiting news on two grant applications to the Department of Energy: Cyrq Energy's application to the Office of Clean Energy Demonstration's Long Duration Energy Storage Demonstrations grant (selections expected in Fall 2023) and Chevron New Energies' application to the Geothermal Technology Office's Enhanced Geothermal Systems Pilot Demonstration grant (selections expected October 2023). SCP submitted an application to PG&E's Innovation Pitch Fest in August proposing a partnership for progressing GeoZone, but was not selected as a presenter. However, PG&E offered to potentially connect on GeoZone in Q4 of 2023. SCP is also working on connecting with the California Energy

Commission to identify potential funding opportunities for the above-market costs of early GeoZone pilot projects.

Advocacy

SCP's CEO published an op ed in the August 13, 2023, Press Democrat on the North Coast's Dirty Little Secret, highlighting our entire state's heavy dependency on natural gas fired power plants – many in poor neighborhoods in the Central Valley and Southern California. The article (attached in the appendix to this report) makes a case that the North Coast needs to stop exporting our air and water pollution to poor communities that have no effective political advocacy and draws the connection to GeoZone Initiative as SCP's most promising means to achieve this goal.

SCP continues to invest in regulatory and legislative advocacy that is supportive of the GeoZone. In early September, SCP submitted comments in response to the California Energy Commission's kick-off of the 2025 Senate Bill 100 report that highlighted the importance of considering advanced geothermal technologies in planning the resource portfolio to meet the state's decarbonization goals. The last SB 100 report, released in 2021, relied on retaining natural gas capacity to provide reliability—which continues to burden neighboring disadvantaged communities with air and water pollution. Advanced geothermal technologies and other "clean firm" resources provide the types of capabilities that would allow the state to evaluate portfolios that do not require fossil resources and their corresponding health impacts.

SCP has also been closely monitoring several California Independent System Operator (CAISO) stakeholder initiatives that impact development of local resources. SCP submitted comments on the CAISO's proposed reforms to the interconnection process requesting that load serving entities like SCP have more influence on projects that receive deliverability. SCP also advocated for prioritization for projects that improve resource diversity and have long-lead times—such as geothermal. SCP is also working with CalCCA on advocacy in the CAISO's generation deliverability stakeholder process and is preparing for the CAISO to release more details on its 2023-24 Transmission Planning Process (TPP). To unlock local project development, it will be critical that the CAISO approve several large network upgrades in PG&E territory.

Attachments

- Attachment A – SCP Geothermal Listening Tour Summary
- Attachment B – Press Democrat Op Ed on the North Coast's Dirty Little Secret

SCP Geothermal Listening Tour Summary

On August 23 and 24, Sonoma Clean Power's CEO and Director of Planning and Analytics met with community members throughout Lake County to better understand and learn about how geothermal energy can impact communities. Lessons from these meetings are informing SCP's process for exploring the development of new geothermal power in Sonoma and Mendocino Counties as part of the "GeoZone". We chose to visit Lake County because that area has a population living closer to geothermal facilities than in Sonoma and Mendocino Counties, despite the fact that most of the existing geothermal facilities are located in Sonoma County.

During our tour, some community members shared specific concerns about how existing geothermal power facilities are operating, but we explained that we were not there to address problems with any existing facilities since we do not own or operate them. Rather, our goal is to plan ahead to build new facilities. For that reason, these notes record comments in a manner that captures concerns without connecting them to the individual who shared it and without details about specific locations.

The listening tour provided us with important background heading into SCP's planning for new geothermal facilities and gives SCP's private development partners insight into likely community concerns when they consider projects in Sonoma and Mendocino Counties.

Themes from these meetings included:

- <u>Transparency and early community engagement is critical.</u>
  Experiences of surprises and projects proposed by unknown organizations can lead to distrust, which is difficult to overcome later. Make sure that project proponents are known, visible and available to answer community questions. We were thanked repeatedly for meeting with community members before a project is proposed and encouraged to continue.

- <u>Projects are always evaluated in context, not in isolation.</u>
  We were repeatedly reminded that everything SCP is doing in a community – all of the benefits and all of the impacts – are considered when deciding if a project should receive community support or opposition. Advice is to think through the entire relationship with the community near a project. A community's receptiveness to new development can be influenced by the past—as an example, much of Lake County feels a sense of exploitation from the long-lasting environmental impacts of logging, mining, geothermal development, and wetland reclamation.

- Engage early with local tribes.
  If projects are likely to be proposed near Cloverdale, engage early with the Cloverdale Rancheria, Hopland, Dry Creek, and even Point Arena. We were advised that tribes often have been engaged too late to effectively evaluate the potential impact to cultural resources.

- Access to experts should extend to the community.
  Trusted experts in geothermal operations, seismicity, and air quality are available as part of the existing geothermal facilities, and access to their data and viewpoints are very important to the community. Some of the examples provided included the experts who engage with the existing Geysers area Geothermal Air Monitoring Program and Seismic Monitoring Advisory Committee.

- Air quality monitoring is working.
  Existing Geysers area geothermal air quality monitoring and abatement is functioning well, and any new geothermal facilities would be advised to learn from it and potentially duplicate it. Some concerns that local air monitoring stations might be improved by having local power backup were raised, but overall opinion was that the system is working, and that air quality issues are generally addressed well. Decades ago, there were more issues with hydrogen sulfide emissions, so we would be well-served to study how improvements were made.

- Water is (and will always be) complicated.
  We heard recognition that when water sources come from more than one basin or supplier, it can get complicated and involve many stakeholders. There was an understanding that the environmentally-preferred disposal of treated wastewater is high value, but also concern that any water supplied to new geothermal operations in the dryer months will be difficult to obtain. Advice to SCP is to work on a sustainable and environmentally-appropriate water supply early in the process, since this will be a key constraint.

- Induced seismicity is a deep concern for close neighbors.
  We learned that in residential areas close to existing geothermal production, frequent small earthquakes are common. There was recognition that some of the quakes are naturally occurring because of local faults, but also concern that many of the quakes are created because of the geothermal operations. We learned that sensors allow the seismic monitoring program to evaluate induced seismicity, and that a fund exists to compensate homeowners for damage caused by induced quakes. We took away that limiting induced seismicity on close neighbors and providing an accessible mechanism for reimbursing damages is an important element in good design.

- Plan for end-of-life.
  We heard that thinking far ahead to how a facility can be appropriately retired someday is important. What does decommissioning look like?

- Provide communities with multiple ways to provide input.
  We heard that public meetings are important, but that providing opportunities for written input both during and outside of public meetings is equally important. Not all people are comfortable speaking. We heard that leveraging local organizations, such as the municipal town councils in Lake County, as a venue for engaging the community is effective.

- Give context for the GeoZone work.
  Provide the public with early information about why new geothermal energy is needed, both to provide year-round reliability and to end our existing dependency on natural gas power plants in poor communities. We heard we need to share the context about what the State is requiring, what other power sources SCP is building, and why SCP is looking in certain regions of Sonoma and Mendocino Counties.

- Cracking rock or "fracking" has a bad reputation from oil and gas.
  We heard that there is a dislike and a distrust of hydraulic fracturing. There was understanding that there are a wide variety of methods – some better and some worse – but the lesson was that if a new project is going to use any of these techniques in a geothermal project it would be subject to significant skepticism, scrutiny and review. While perhaps something that shouldn't be generalized, the bad reputation from the natural gas industry makes the use of this technique in the geothermal industry harder.

- Traffic and noise in rural areas.
  Neighbors reminded us that even impacts like traffic and noise in rural areas can be disruptive. We are advised to care about these impacts early and find ways to minimize them.

- Drawing on community knowledge.
  After many decades of living near geothermal facilities, some members of our local community have developed significant knowledge on local geology, water, air quality and seismicity. We would do well to tap into that expertise at the right time by continuing to meet people and learn what they know.

- Make reasonable economic assessments.
  Some experiences in the past with developers who made overly-ambitious claims about tax revenues and job creation led to community skepticism. Advice is to get off on the "right foot" by ensuring that claims about community value are reasonable from the start.

- Learn about other community energy projects and engage.
  In our travels throughout Lake County, we learned about community support for other kinds of energy projects, such as tank-to-tank pumped hydropower as a means of energy storage and a small "direct-use" geothermal project for heating. We learned more about how local residents and elected officials view the potential removal of Scott Dam. We learned about concerns that there aren't nearly enough local electricians to support California's transition toward electric appliances and the upgrades needed. We learned that the solar potential in some of the Lake County areas we visited is under-appreciated, since the winters are often sunnier than in other parts of California. We learned that local communities want access to the power that is produced in their backyard so they can enjoy the benefits when they are bearing the impacts. More generally, we were encouraged to be fully engaged in the spectrum of local community energy projects in the regions around any potential GeoZone projects to ensure we understand them and can support the community's ambitions.

We are grateful to the significant time community members from around Lake County shared with us and specifically wish to thank those who sat down with us for extended conversations:

Robert Stark

Supervisor Eddie Crandall

Holly Harris

Chuck Lamb

Former Supervisor Denise Rushing

Anderson Springs Community (six residents)

Close to Home: North Coast's dirty little energy secret

Californians across the state rely on dirty power plants to keep the lights on, including all of us here in Sonoma and Mendocino counties. | 14

The AES power plant in Long Beach. (BRIAN VAN DER BRUG / Los Angeles Times)

GEOF SYPHERS
GEOF SYPHERS IS CEO OF SONOMA CLEAN POWER,.
August 13, 2023

What does turning on your lights in Sonoma County or Mendocino County have to do with childhood asthma in Southern California?

The answer lies in the interconnectivity of our electric grid. During periods of peak demand, our local renewable energy sources are not enough. That's when gas-fired power plants, including three in Oxnard, Long Beach and Huntington Beach are fired up, creating air pollution in neighborhoods largely populated by low-income families.

On Tuesday, the state Water Resources Control Board will vote on extending the deadline for compliance with certain water quality standards, which will allow continued operation of those three plants. Sadly, they may have to approve a three-year extension to avoid blackouts. If they do, they will violate a long-standing agreement to close them by the end of 2023.

But we can't only place the blame on them.

Californians across the state rely on these dirty plants to keep the lights on, including all of us here in Sonoma and Mendocino counties.

This is a critical issue for our clean energy future as well as for the affected communities.

We're privileged on the North Coast to have no gas-burning power plants in our neighborhoods, but it's past time we took responsibility for exporting our air pollution to poor communities in Southern California. A workable plan that keeps California's lights on with renewable energy is overdue.

In 2018, state Senate Bill 100 boldly set a goal of reaching 100% renewable power by 2045, but it did not create a plan to get there.

Solar and batteries will solve our summer power needs in just a few years, but we still will need offshore wind, geothermal and long-duration storage to close even a single fossil fuel power plant. That's because of the long dark periods in the winter when solar isn't producing and batteries are empty.

Two years ago, Sonoma and Mendocino counties partnered with Sonoma Clean Power to guide development of new geothermal resources in our region and preserve the precious existing Geysers power system. Our goal is to test some of the newest environmental technologies and find ways to scale up 24-hour renewable energy.

Building more local geothermal will allow us to shut down one dirty power plant someday, but on a state level California still needs a plan to quickly retire all 39,500 megawatts of them.

California needs to invest in replacing old, leaky windows in low-income neighborhoods. We need water heaters — the second-biggest consumer of energy in most households — to operate on renewable power. We need appliances and electric vehicles to automatically adjust their power use to avoid stressing the grid.

We also need to start building transmission lines to accommodate tripling power production. We cannot pretend that delaying these projects is acceptable, because people are suffering every day we delay.

To do this, California needs a plan that agrees to modest environmental impacts in exchange for definite closures of our dirtiest power plants. We need development that provides great jobs and is supported by unions in exchange for narrowing the standards for suing critical clean energy projects.

We also need to protect the rights of community-owned power providers, like Sonoma Clean Power, to continue building renewable energy resources.

Some voices in Sacramento are pushing for the state Public Utilities Commission to be allowed to order PG&E to build all power sources on behalf of community-owned power providers. Instead, the PUC should focus state efforts where they belong — on hard-to-build stuff like offshore wind — and support community-owned power providers in their pursuit of renewable power projects.

Communities across California are suffering from the consequences of our inaction. Instead of making the water board decide between keeping the lights on and helping our communities of concern survive, we need a workable plan to build a reliable renewable energy system now.

Geof Syphers is CEO of Sonoma Clean Power, which serves the residents and businesses in Sonoma and Mendocino counties.