



July 22, 2020

Via Email

Tom Steyer
Ann O'Leary
& Members of the Governor's Task Force on Business and Jobs Recovery
State Capitol, First Floor
Sacramento, CA 95814

Leveraging Clean and Renewable Geothermal Energy to Promote California's Economic Recovery

Dear Tom Steyer, Ann O'Leary, and Members of the Task Force on Business and Jobs Recovery:

As the COVID-19 pandemic has devastated the United States economy, in California, **the crisis has cost over 110,000 clean energy jobs** – with the threat of more job losses looming heavy. Governor Newsom's task force on business and jobs recovery will play a key role in ensuring that the golden state transitions smoothly back to its status as an exemplar in economic prosperity and resilience for the nation. A question central to the aims of the task force is how the state will continue to grow the green economy by promoting new technologies and opportunities. Recently, the House Select Committee on the Climate Crisis unveiled a comprehensive climate action framework, highlighting Congressman Steven Horsford's Geothermal Energy Opportunity Act bill¹, which would put the US on a path to net-zero carbon pollution by 2050. California, too, must leverage clean and renewable energy to promote economic recovery and address the legacy of environmental injustice disproportionately harming the state's low-income communities and communities of color.

Geothermal is a firm and flexible clean energy resource that provides a "baseload" of energy at all hours of the day and night, and significant environmental and economic benefits to local communities. While geothermal technology has been in use for over 60 years in California, new leaps in technology over the last two decades have increased both environmental and economic value above and beyond other forms of renewable energy. For every 30 MW geothermal power plant built, 113,000 metric tons of CO₂ is avoided annually, compared to a 30 MW natural gas facility. The equivalent of planting 16,000 trees every year. Significantly, this zero-carbon technology has a surface disturbance 22 times smaller than the average solar field producing the same amount of electricity – both a cultural and biological benefit.

¹ H.R. 5154; GEO Act of 2019, sponsored by Rep. Steven Horsford.

<https://projects.propublica.org/represent/bills/116/hr5154#:~:text=Sponsored%20by%20Steven%20Horsford%20D-Nev.%20Introduced%20to%20the,in%20the%20credit%20in%202025%20and%202026.%20>

Most impactful, however, is the economic benefit to host communities of geothermal projects. A 30 MW geothermal power plant provides an average of 450 jobs during the construction period and 80 annual jobs on average for operation. The GeoVision study, released by the Department of Energy in 2019, notes that the right technology investment would catalyze **\$219 billion in domestic expenditures on geothermal energy** through 2050, illustrated in the table below. Note that **\$79 billion of this would be credited to California alone**. Further, the report shows that “geothermal can provide **more than double the long-term jobs** per powered household compared to other electricity-generation technologies considered.”²

State	Cumulative Expenditures (millions of \$)	State	Cumulative Expenditures (millions of \$)
CA	79,851	CO	3,008
WV	27,030	MT	976
OR	26,495	TX	222
ID	21,838	WY	208
NV	17,310	PA	110
UT	14,914	VA	51
AZ	13,754	MS	30
NM	13,339	LA	17

Table 1. Cumulative expenditures on Geothermal Electricity Generation Capacity Deployment by State in Millions of Dollars (2015-2050) in the TI Scenario. Source: GeoVision Analysis: Results, Opportunities, and Impacts. Department of Energy (2019).

As the task force grapples with how to promote new technologies during a time of economic uncertainty and job loss, geothermal energy presents a compelling opportunity to drive economic activity in one of the hardest hit sectors: oil and gas workers. As Doug Hollett, former Acting Assistant Secretary for Fossil Energy recently noted:

“Geothermal uses many of the same services, technologies and personnel as the oil and gas sector. In the midst of this historically impactful oil and gas downturn, there is a unique opportunity to quickly leverage oil and gas capabilities and technologies into the geothermal sector while preserving jobs and regional economic viability, and ensuring US energy sector vitality.”³

This parity presents a tangible opportunity to create many permanent, high quality jobs while also building a clean energy infrastructure that will benefit California for decades. Due to the severity of this crisis, job loss solutions are needed immediately. Decisive action at both the federal and state levels are

² GeoVision Analysis: Results, Opportunities and Impacts. Department of Energy (2019).

³ A Historic Downturn Meets Historic Opportunity: Geothermal Development Will Save Oil and Gas Jobs. Hollett, Doug (2020). <https://www.heatbeat.energy/post/a-historic-downturn-meets-historic-opportunity-geothermal-development-will-save-oil-and-gas-jobs>

needed. The following R&D and deployment opportunities can serve as a roadmap for California to put a green job recovery plan into action:

Deployment Opportunities:

- Support a national effort to streamline renewable energy and transmission siting to accelerate responsible clean energy deployment and get Californians back to work immediately. This can be done at the state level in several ways:
 - Temporary language added to CEQA providing a carve out for renewable projects that meet specific criteria to honor the spirit of the act, create green jobs, and reduce carbon emissions.
 - Support for additional transparency in CEQA litigation. For instance, requiring petitioners to disclose the identity of a person or entity that contributes \$1,000 or more toward court costs. This would identify financial interests to weigh against genuine public interest in development projects.
 - Set timelines for CEQA reviews, to align with Secretary of the Interior order no. 3355, resulting from Executive Order 13807. This would enhance efficiency in CEQA.
 - State BLM offices can more effectively deploy underutilized staff knowledgeable in subsurface project review. For example, BLM permit managers with oil and gas experience can fast track and streamline geothermal permitting and approvals.
- The California Public Utilities Commission should adjust pricing assumptions regarding geothermal generation during the Integrated Resource Planning process.
 - The National Renewable Energy Laboratory (NREL) publishes Annual Technology Baseline assumptions each year. For the past decade, the base pricing mechanism for geothermal was artificially inflated. The geothermal industry worked with NREL to bring this pricing mechanism down by 60% in 2020 to more accurately reflect the market and the value of geothermal.
- Support legislation to set an aggressive policy target for firm and flexible energy within the Renewable Portfolio Standard -- to complement intermittent renewable resources. Geothermal energy provides firm power, available at all hours of the day, along with the flexibility desired by the CAISO. Historically, bills have been introduced over the past decade to set aside 500 MW for geothermal development specifically. While California's aims for a fully renewable portfolio have been admirable, they have not fully addressed climate concerns – firm and flexible energy does. A policy target of a minimum of 1.5 GW of new firm, flexible contracts by 2030 – to include geothermal and any other renewable technologies or hybrids eligible for this category – would get California closer to net-zero in an inclusive, economically viable way.

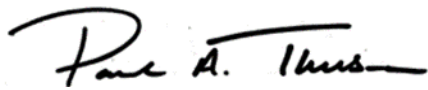
Research and Development Opportunities:

- Expansion of technology transfer programs within the Department of Conservation's Geologic Energy Management Division (CalGEM) to immediately restore oil field services jobs by putting people back to work in geothermal, carbon capture and storage, subsurface energy storage, offshore wind and other adjacent industries.

These actions must be undertaken immediately to ensure a long-lasting impact on job creation in California and accelerate several shovel ready projects, leading to 1,000s more jobs. Because of

California's prime geographic location for geothermal production, decision makers have the opportunity to usher in a new era of green prosperity to support action on climate change, heal a legacy of environmental injustice disproportionately affecting low-income and communities of color, and to get Californians back to work. **Geothermal has the opportunity to put a meaningful percentage of the lost oil and gas jobs back to work immediately and could replace all lost jobs within the decade, but appropriate and decisive policy support is required to make this a reality.** We respectfully request a meeting with the task force to expand on the ideas held in this letter, and to assist the task force as they build a roadmap to a clean recovery.

Respectfully,



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