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Docket 19-ERDD-01: BHE Renewables Comments on the Preliminary Draft Utility

Additional submitted attachment is included below.



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California Energy Commission
Docket Office, MS-4
Docket No. 19-ERDD-01
1516 Ninth Street
Sacramento, California 95814-5512

RE: Docket 19-ERDD-01: BHE Renewables Comments on the Preliminary Draft Utility-Scale Renewable Energy Generation Research Roadmap

CEERT appreciates the opportunity to submit comments regarding the Preliminary Draft Utility-Scale Renewable Energy Generation Research Roadmap. CEERT is a non-profit research and advocacy organization, which includes environmental public interest organizations and companies engaged in renewable technology development and clean energy infrastructure. We have a long history of advocating for a balanced renewable portfolio, and have carried out peer reviewed, independent research and analysis, including the 2030 Low Carbon Grid Study with the National Renewable Energy Laboratory, and a related study carried out on behalf of the Walton Foundation comparing the value of additional geothermal compared to more PV solar. (Both studies can be found at (www.lowcarbongrid2030.org))

We only became aware of this preliminary draft and the consulting project which produced it earlier this week, so we have not had time to carry out a detailed review. As we believe that both geothermal and concentrated solar power with thermal energy storage are important elements of a reliable, affordable, and balanced renewable portfolio, we have focused our comments on those sections of the preliminary draft.

Section 3- Concentrated Solar Thermal



California was the first in the world to deploy solar thermal technology, and there have been three new solar thermal projects built in recent years. However, because the California RPS implementation placed a disproportionate emphasis on “least cost”, and basically ignored “best fit”, despite the provisions of the RPS statute. As a result, there was no incentive or encouragement by utilities or the PUC to include thermal energy storage as an integral component of CSP projects.

Based on our initial discussions with CSP experts in the field, the draft got a few things wrong, such as “both thermal energy storage and ramp rates need to improve”, which simply not correct, and ignores that CSP plus thermal energy storage is flexible, dispatchable generation that can provide power day or night, cloudy or bright, and provide added value by providing cost effective storage and renewable/grid integration services. The report also ignores recent project developments of hybrid PV/CSP projects, which can be highly complementary and cost effective.

The draft also fails to reflect or highlight the recent commercial developments on CSP/TER projects in South America, South Africa, and the Middle East, which have shown significant cost reductions and operational improvements. We would suggest adding a specific recommendation that CEC work with the World Bank, the CSP industry, and grid policy experts to convene a Symposium on International CSP/TER Technology and Commercial Development, and potential value and importance in California and the Southwest.

Section 7 - Geothermal

CEERT has long been an advocate for expanding geothermal development, especially in the Salton Sea/Imperial Valley region, because of its very valuable and important role in providing grid reliability and filling the gap when the sun goes down and reducing dependence on natural gas. Moreover, the recently adopted State Water Resources Control Board Plan for Mitigation and Restoration of the Salton Sea, calls for not less than 500 megawatts of new geothermal in Imperial by 2030. Given the growing imbalance in California’s renewable energy portfolio, and the need to reduce dependence on natural gas for grid reliability, removing barriers to geothermal development is a critical priority. Given the capital costs and long lead time for project development, it is important that we accelerate our work on pathways for new geothermal.

One of the most promising and important opportunities to increase the economic competitiveness and provide additional revenue streams for geothermal is to undertake a serious and focused effort to demonstrate the commercial viability of lithium extraction from geothermal brine. CEC Chair David Hochschild hosted a workshop in November 2018 and a Symposium in May of 2019, on lithium technology development, current sources of lithium and their substantial environmental impacts, and trends in global supply and demand for lithium, especially in light of increased electrification of transportation and buildings. There is growing recognition that California and the Imperial Valley could become a competitive producer of lithium on a large scale, which could be an economic boon to the Salton Sea region and the state as a whole. But for that idea to become reality, there are critically important testing,



evaluation, and technology demonstrations which are needed to be undertaken in the very near term.

We therefore would respectfully request that the Preliminary Draft be amended to include research on lithium extraction from geothermal brine.

We would also suggest including specific mention of the need to study and evaluate the potential of producing renewable hydrogen from geothermal electricity, using electrolyzers which can follow load, and take advantage of surplus geothermal when the grid is oversupplied, and adjust their operations as low cost geothermal and other renewables become available. In addition to using hydrogen to store renewable energy for later use, producing renewable hydrogen in Inland Southern California will be increasingly important to provide renewable fuel for fuel cells trucks and trains.

We appreciate the Commission's leadership in accelerating California's reliance on renewable energy for electricity, transportation and buildings, and appreciate the opportunity to provide our comments on this important document.

Sincerely,

A handwritten signature in black ink, appearing to read "V. John White", is positioned above the typed name.

V. John White
Executive Director
CEERT