

<b>DOCKETED</b>	
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<b>Project Title:</b>	Lithium Valley Commission
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<b>Document Title:</b>	California Energy Commission Response to Leadership Counsel letter
<b>Description:</b>	California Energy Commission (CEC) staff, on behalf of the Lithium Valley Commission, provided responses to some of the questions posed by Leadership Counsel in the October 2021 correspondence. This letter addresses questions posed by Leadership Counsel on the topic of employment. CEC staff hope this additional information on the topic of employment is helpful for Leadership Counsel and members of the public and responds to the questions provided.
<b>Filer:</b>	Erica Loza
<b>Organization:</b>	California Energy Commission
<b>Submitter Role:</b>	Commission Staff
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July 5, 2022

Mariela Loera  
Policy Advocate  
Leadership Counsel for Justice and Accountability

RE: Public Engagement and Outreach Related to the Lithium Valley Commission –  
Second Response from California Energy Commission

Dear Mariela Loera,

This letter is in follow-up to your correspondence and other communications on behalf of Leadership Counsel for Justice and Accountability (Leadership Counsel) and community residents, seeking clarity on proposed geothermal and lithium extraction projects in the Salton Sea region and related topics.

By a letter dated, April 1, 2022, California Energy Commission (CEC) staff, on behalf of the Lithium Valley Commission, provided responses to some of the questions posed by Leadership Counsel in the October 2021 correspondence. This letter addresses questions posed by Leadership Counsel on the topic of employment. CEC staff will provide information and responses to the remaining questions from your initial inquiry, as appropriate, in subsequent correspondence and anticipates that the next letter will address questions about water use and impacts.

### **Background**

The responses to many questions in this letter are based in significant part on information provided to the Lithium Valley Commission in its docket and public meetings and are focused on what's currently known about geothermal power plants and co-located lithium extraction facilities proposed or under development in the Salton Sea region by EnergySource Minerals, BHE Renewables, and Controlled Thermal Resources. Each of the projects are unique in their design and technology, are in different stages of planning or development and are on different timelines. These differences affect many answers, so first this letter seeks to provide some relevant, general information about each of these projects and we note that the developers have provided more detailed information about the projects on their company websites.

[EnergySource Minerals Project ATLiS](#).<sup>1</sup> According to EnergySource Minerals, the project is a “development initiative to extract and produce battery-spec lithium products utilizing geothermal brines from the Salton Sea geothermal resource area.” The lithium extraction project is currently in construction at the existing John L. Featherstone Plant in Calipatria, California, with commercial operations scheduled to begin in 2024 and anticipated production of 19,000 metric tons per year of lithium product. The project received a use permit from Imperial County in 2021,<sup>2</sup> after the County certified an environmental impact report (EIR) prepared to meet the requirements of the California Environmental Quality Act (CEQA).<sup>3</sup> The California Environmental Quality Act, CEQA, generally requires state and local government agencies to inform decision makers and the public about the potential environmental impacts of proposed projects, and to reduce those environmental impacts to the extent feasible.

[BHE Renewables Demonstration Projects](#).<sup>4</sup> BHE Renewables is currently building two demonstration projects in Calipatria using geothermal brine from an existing power plant, with an initial focus on advancing lithium production research. The first project which is currently in construction will demonstrate the recovery of lithium from geothermal brine to produce lithium chloride and is receiving support from a CEC grant.<sup>5</sup> The lithium extraction demonstration facility is planning to begin operations in 2022 and was permitted by Imperial County and found to be exempt from CEQA.<sup>6</sup> The second demonstration project, which is receiving grant funding from Department of Energy,<sup>7</sup> will convert lithium chloride into battery-grade lithium compounds. The lithium extraction project is co-located with an existing geothermal plant operated by CalEnergy Operations, and the demonstration processing facility will be connected to the lithium extraction demonstration project. The lithium processing demonstration facility is planned to be operating in 2023, no permitting documentation has been identified in the Imperial County Planning Department resources yet, however the initial tasks, including intellectual, academic, and analytical activities that will help to define the remaining project tasks, were found by the Department of Energy to be categorically

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1 EnergySource Minerals, [Project ATLiS](https://www.esminerals.com/atlis), <https://www.esminerals.com/atlis>.

2 Imperial County, Planning & Development Services Department. 2021. [Project Report](https://www.icpds.com/assets/hearings/02.-WSA,FIER,-MMRP,-CUP20-0008,-PM02485-Energy-Source-Mineral-ATLiS-PC-Pkg.pdf). <https://www.icpds.com/assets/hearings/02.-WSA,FIER,-MMRP,-CUP20-0008,-PM02485-Energy-Source-Mineral-ATLiS-PC-Pkg.pdf>.

3 The laws and rules governing the CEQA process are contained in the CEQA statute (Public Resources Code Section 21000 and following), the CEQA Guidelines (California Code of Regulations, Title 14, Section 15000 and following), published court decisions interpreting CEQA, and locally adopted CEQA procedures.

4 BHE Renewables. 2022. [BHE Renewables Webpage](https://www.brkenegy.com/our-businesses/bhe-renewables.aspx). <https://www.brkenegy.com/our-businesses/bhe-renewables.aspx>.

5 California Energy Commission staff. 2020. [Grant Request form](https://www.energy.ca.gov/filebrowser/download/293). California Energy Commission. Publication Number: EPC-19-020. <https://www.energy.ca.gov/filebrowser/download/293>.

6 County of Imperial, Planning & Development Services. 2021. [Notice of Exemption](https://www.icpds.com/assets/planning/notices/2021/IS21-0018-Cal-Energy-Notice-of-Exemption-09-03-21.pdf). <https://www.icpds.com/assets/planning/notices/2021/IS21-0018-Cal-Energy-Notice-of-Exemption-09-03-21.pdf>.

7 U.S Department of Energy, Office of Energy Efficiency and Renewable Energy. 2021. “CX-023971: Electrolytic Production of Battery-Grade LiOH-H<sub>2</sub>O from Geothermal Brine.” [NEPA Determination](https://www.energy.gov/sites/default/files/2021-07/CX-023971.pdf). <https://www.energy.gov/sites/default/files/2021-07/CX-023971.pdf>.

exempt under the National Environmental Policy Act.<sup>8</sup> The National Environmental Policy Act (NEPA) is similar to CEQA in intent and in the review process, which requires that agencies evaluate the environmental, social and economic effects of their proposed actions. Agencies provide opportunities for public review and comment on those evaluations and coordinate with other federal and state agencies.<sup>9</sup>

[Controlled Thermal Resources Hell's Kitchen PowerCo1 and LithiumCo1 Project](#).<sup>10</sup> This is a proposed new 49.9 megawatt geothermal power plant with a co-located minerals recovery and processing facility near the eastern shore of the Salton Sea in Imperial County approximately 3.6 miles west of the town of Niland. The project is currently in the initial stages of development and Controlled Thermal Resources anticipates power production will be operational in late 2023 and lithium production in 2024. Additional project phases are planned to add more geothermal power capacity with co-located minerals recovery. Controlled Thermal Resources applied for a use permit from Imperial County in December 2021. The permit application is currently under review and the Imperial County Planning & Development Services Department issued a Notice of Preparation of a draft environmental impact report (EIR) for the project in March 2022, with an initial public review period that ended on May 13, 2022.<sup>11</sup> As the County completes the CEQA analysis and documents and considers approval of the permit application, there will be opportunities for the public to participate.

## **Employment**

### **What types of jobs will be created, and for who? What will be the quality of jobs? Will they be safe?**

At the February 24, 2022, Lithium Valley Commission public meeting, information was provided about the hiring goals and anticipated workforce needs of Controlled Thermal Resources and BHE Renewables.<sup>12</sup> EnergySource Minerals workforce estimates were provided in the Final EIR prepared for the ATLiS project.<sup>13</sup> The developers have all conveyed their intent to prioritize local hiring and to assist in building a local workforce. Most jobs will go to people with a high school diploma or equivalent, however, there

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8 U.S. Department of Energy, Office of Energy Efficiency and Renewable Energy. 2021. "CX-023971: Electrolytic Production of Battery-Grade LiOH-H<sub>2</sub>O from Geothermal Brine." [NEPA Determination](https://www.energy.gov/sites/default/files/2021-07/CX-023971.pdf).  
<https://www.energy.gov/sites/default/files/2021-07/CX-023971.pdf>.

9 U.S. Environmental Protection Agency. 2014. [Integrating Federal and State Environmental Reviews](https://opr.ca.gov/docs/NEPA_CEQA_Handbook_Feb2014.pdf).  
[https://opr.ca.gov/docs/NEPA\\_CEQA\\_Handbook\\_Feb2014.pdf](https://opr.ca.gov/docs/NEPA_CEQA_Handbook_Feb2014.pdf).

10 [Controlled Thermal Resources](https://www.cthermal.com/). website. <https://www.cthermal.com/>.

11 Imperial County, Planning & Development Services Department. 2022. [Notice of Preparation of Draft EIR for Hell's Kitchen Powerco 1 and Lithiumco 1 Project and Notice of Public EIR Scoping Meeting](https://www.icpds.com/assets/Notice-of-Preparation-1648825659.pdf).  
<https://www.icpds.com/assets/Notice-of-Preparation-1648825659.pdf>.

12 California Energy Commission staff. 2022. [Presentation – Convening of the Lithium Valley Commission 02-24-22](https://efiling.energy.ca.gov/GetDocument.aspx?tn=241964&DocumentContentId=75644). California Energy Commission. Docket Number 20-LITHIUM-01, TN# 241964.  
<https://efiling.energy.ca.gov/GetDocument.aspx?tn=241964&DocumentContentId=75644>.

13 Imperial County, Planning & Development Services Department. 2021. [Project Report](https://www.icpds.com/assets/hearings/02.-WSA,FIER,-MMRP,-CUP20-0008,-PM02485-Energy-Source-Mineral-ATLiS-PC-Pkg.pdf).  
<https://www.icpds.com/assets/hearings/02.-WSA,FIER,-MMRP,-CUP20-0008,-PM02485-Energy-Source-Mineral-ATLiS-PC-Pkg.pdf>.

will also be jobs that require a two-year or four-year degree, such as chemists, electricians, and technicians that repair and adjust controls and environmental monitoring equipment. Additional examples of jobs that are expected to require a four-year college degree include management and engineers. The Lithium Valley Commission also heard projections that average wages are expected to be almost double that of the current median wage in Imperial County.<sup>14</sup>

**Table 1** below reflects additional information provided to the Lithium Valley Commission on May 12, 2022, about anticipated jobs in Imperial County from planned geothermal power plant and lithium extraction facility construction and operations:

**Table 1. Typical Education Requirements by Job Type for Geothermal Power Plant and Lithium Extraction in Imperial Valley**

Education	Construction	Operations
High School Diploma or equivalent. Knowledge of algebra and basic science. Some jobs require a certificate as well.	Imperial County Building Trades Apprenticeships	Control operators (power plant certification a plus) Maintenance technicians (equipment maintenance certifications required) Operators Resource technicians (maintenance certifications a plus) Safety specialists Supervisor (applicable experience required, such as control operator, power plant operations, or maintenance/operations of a power plant) Support jobs (such as procurement, storeroom, truck drivers with commercial driver’s license, heavy equipment operators)
Two-year or Four-year Degree		Electricians Environmental specialists Instrumentation and controls Lab technicians/Chemists
Four-year College Degree or master’s degree		Engineers (electrical, mechanical, geologists, controls, chemical) Management (previous experience required, such as control operator or power plant supervisory and operations experience) Other support jobs (such as project analyst, non-destructive engineers)

Source: Data presented by Adela de la Torre, President of San Diego State University, at the May 12, 2022, Lithium Valley Commission meeting with minor additions by CEC staff

14 California Energy Commission staff. 2022. [Presentation – Convening of the Lithium Valley Commission 02-24-22](https://efiling.energy.ca.gov/GetDocument.aspx?tn=241964&DocumentContentId=75644), Slide 34. California Energy Commission. Docket Number 20-LITHIUM-01, TN# 241964. <https://efiling.energy.ca.gov/GetDocument.aspx?tn=241964&DocumentContentId=75644>.

The jobs estimates provided by the developers for each commercial scale project are:

- Energy Source Minerals Project ATLiS<sup>15</sup>
  - Approximately 200 to 250 workers are anticipated to be required at peak periods of project construction
  - Beginning with startup operations, the project is expected to be operated by a total staff of approximately 62 full-time, onsite employees
  
- Controlled Thermal Resources, Planned Hell's Kitchen PowerCo1 and LithiumCo1 Project<sup>16</sup>
  - Phase 1 (first 49.9 MW power plant plus + 20,000 metric tons Lithium Hydroxide production) – 220 Direct Project Jobs
  - Phase 2 (addition of 260MW power + 80,000 mt/yr Lithium Carbonate Equivalent) – 940 Direct Project Jobs (cumulative)
  - Phase 3 - 1,400 full time project jobs possible
  - 480 union construction jobs through project completion
  - Total 1,880 Direct Project Jobs possible (total Phase 3 + construction)
  - Estimated additional 2,500 ancillary jobs will be created in the region from various small businesses, service jobs, hospitality, transport and administrative jobs throughout the community

Controlled Thermal Resources anticipates Phase 2 will be operational by 2025 and Phase 3 will be developed to meet market demand.<sup>17</sup>

- BHE Renewables
  - Although BHE Renewables is currently focused on demonstration projects, it is planning to add lithium extraction facilities at existing geothermal power plants operated by CalEnergy Operations.
  - BHE Renewables estimates up to 200 new jobs associated with operating full-scale lithium extraction operations planned at its existing geothermal power plants with the potential for additional jobs associated with expansions of existing geothermal power facilities<sup>18</sup>

Regarding worker safety, all projects will be required to comply with California Occupational Safety and Health Administration (Cal/OSHA) regulations and standards. These requirements address numerous worker safety issues including emergency action/evacuation, personal protective equipment, first aid, bloodborne pathogens,

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15 Imperial County Planning & Development Services Department. 2021. [Project Report](https://www.icpds.com/assets/hearings/02.-WSA,FIER,-MMRP,-CUP20-0008,-PM02485-Energy-Source-Mineral-ATLiS-PC-Pkg.pdf).  
<https://www.icpds.com/assets/hearings/02.-WSA,FIER,-MMRP,-CUP20-0008,-PM02485-Energy-Source-Mineral-ATLiS-PC-Pkg.pdf>.

16 Controlled Thermal Resources. [Controlled Thermal Resources Website](https://www.cthermal.com/). <https://www.cthermal.com/>.

17 Ibid.

18 California Energy Commission staff. 2022. [Transcript for March 24, 2022 Meeting](https://efiling.energy.ca.gov/GetDocument.aspx?tn=242568&DocumentContentId=76086), Commissioner Weisgall, page 26. California Energy Commission. Docket Number 20-LITHIUM-01, TN# 242568. <https://efiling.energy.ca.gov/GetDocument.aspx?tn=242568&DocumentContentId=76086>.



cranes and hoists, vehicle/traffic, and chemical exposures.<sup>19</sup> In addition, as of 1991, a written, effective Injury and Illness Prevention (IIP) Program is required for every California employer. Additional information regarding Cal/OSHA and the requirements that ensure worker safety can be found on the Department of Industrial Relations website at <https://www.dir.ca.gov/dosh/dosh1.html>.

### **What is the sustainability of these jobs for the employee?**

In terms of length of employment for the temporary construction jobs, it is estimated that jobs at any single project will last roughly two years. For example, EnergySource Minerals plans to begin construction in 2022 and begin commercial operation in 2024,<sup>20</sup> and BHE Renewables plans to begin construction in 2024 and begin commercial operation in 2026.<sup>21</sup> Most jobs associated with facility operations will be permanent in nature and the developers have stated plans to offer employees career growth opportunities.<sup>22</sup>

### **What is the timeline for the availability of these jobs?**

Looking at the combined activity in the area, demand for construction jobs has already started and is expected to increase through 2024 based on the anticipated timing for the BHE Renewables and Controlled Thermal Resources projects. Construction activity will continue for at least four years and likely longer. Jobs associated with geothermal power plant and lithium extraction operations are also beginning now and will continue to grow as facilities begin operations in 2024 through 2026. EnergySource Minerals is hiring now for its ATLiS project and BHE Renewables is hiring for its geothermal lithium extraction demonstration facility.<sup>23</sup>

CEC staff hope this additional information on the topic of employment is helpful for Leadership Counsel and members of the public and responds to the questions provided. Extensive information on the topic of workforce development was provided by speakers during the February 24, 2022 and March 24, 2022, Lithium Valley Commission public meetings. The presentation materials, transcripts and recordings from these meetings may be of additional interest and can be accessed through the Lithium Valley Commission docket and webpages.

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19 California Department of Industrial Relations. 2021. "[Health & Safety Rights: Facts for California Workers](https://www.dir.ca.gov/dosh/documents/health-and-safety-rights-for-workers.pdf)." <https://www.dir.ca.gov/dosh/documents/health-and-safety-rights-for-workers.pdf>.

20 California Energy Commission staff. 2021. [Transcript for July 29, 2021 Meeting](#), Derek Benson, EnergySource Minerals, page 60. California Energy Commission. Docket Number 20-LITHIUM-01, TN#239800. <https://efiling.energy.ca.gov/GetDocument.aspx?tn=239800&DocumentContentId=73245>.

21 California Energy Commission staff. 2022. [Transcript for March 24, 2022 Meeting](#), Commissioner Weisgall, page 26. California Energy Commission. Docket Number 20-LITHIUM-01, TN# 242568. <https://efiling.energy.ca.gov/GetDocument.aspx?tn=242568&DocumentContentId=76086>.

22 California Energy Commission staff. 2022. [Transcript for March 24, 2022 Meeting](#), Commissioner Weisgall, page 19. California Energy Commission. Docket Number 20-LITHIUM-01, TN# 242568. <https://efiling.energy.ca.gov/GetDocument.aspx?tn=242568&DocumentContentId=76086>.

23 California Energy Commission staff. 2022. [Transcript for March 24, 2022 Meeting](#), page 28 – 29. California Energy Commission. Docket Number 20-LITHIUM-01, TN# 242568. <https://efiling.energy.ca.gov/GetDocument.aspx?tn=242568&DocumentContentId=76086>.

As noted above, CEC staff will provide additional information and responses in future communications and appreciate your patience, as the responses to many questions are based on information provided to the Lithium Valley Commission through continuing public meetings.

Sincerely,

*Deana Carrillo*

Deana Carrillo  
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California Energy Commission

CC: Assemblymember Eduardo Garcia  
Noemi Gallardo, California Energy Commission Interim Public Advisor