

Staff Report 63

APPLICANT:

ORNI 5 LLC

PROPOSED ACTION:

Amend Geothermal Resources Lease Number 9643 and Lease Number 9644.

AREA, LAND TYPE, AND LOCATION:

Approximately 2,739 acres of school land (also referred to as lieu land) located within the Truckhaven geothermal area, southwest of the Salton Sea, Imperial County.

Lease 9643: A total of 2,016 acres, consisting of approximately 772 acres of the State's 100 percent reserved mineral interest (RMI) and approximately 1,244 acres of school land and State-owned school land (fee-owned land, where the State retains the surface and minerals), Assessor's Parcel Numbers 017-010-016, 017-010-017, 017-010-027, 017-010-044, 017-010-045, 017-010-048, 017-010-056, 017-340-003, 017-340-004, 017-340-010, 017-150-013, and 017-970-014, located within Sections 32 and 34, Township 10 South, Range 10 East, and within Sections 4 and 10, Township 11 South, Range 10 East, SBM (as shown in Figures 1 and 3). The State, Applicant, and DEVCAL Corporation each own a portion of the surface land. See Exhibit A1, Land Description, attached.

Lease 9644: Approximately 723 acres of the State's 100 percent RMI school land, Assessor's Parcel Numbers 017-340-011 and 017-340-018, located within Sections 10 and 16, Township 11 South, Range 10 East, SBM (as shown in Figures 2 and 4). The California Department of Parks and Recreation (Parks) owns the surface lands, known as the Ocotillo Wells State Vehicular Recreation Area. See Exhibit A2, Land Description, attached.

Figure 1. Location of Lease 9643

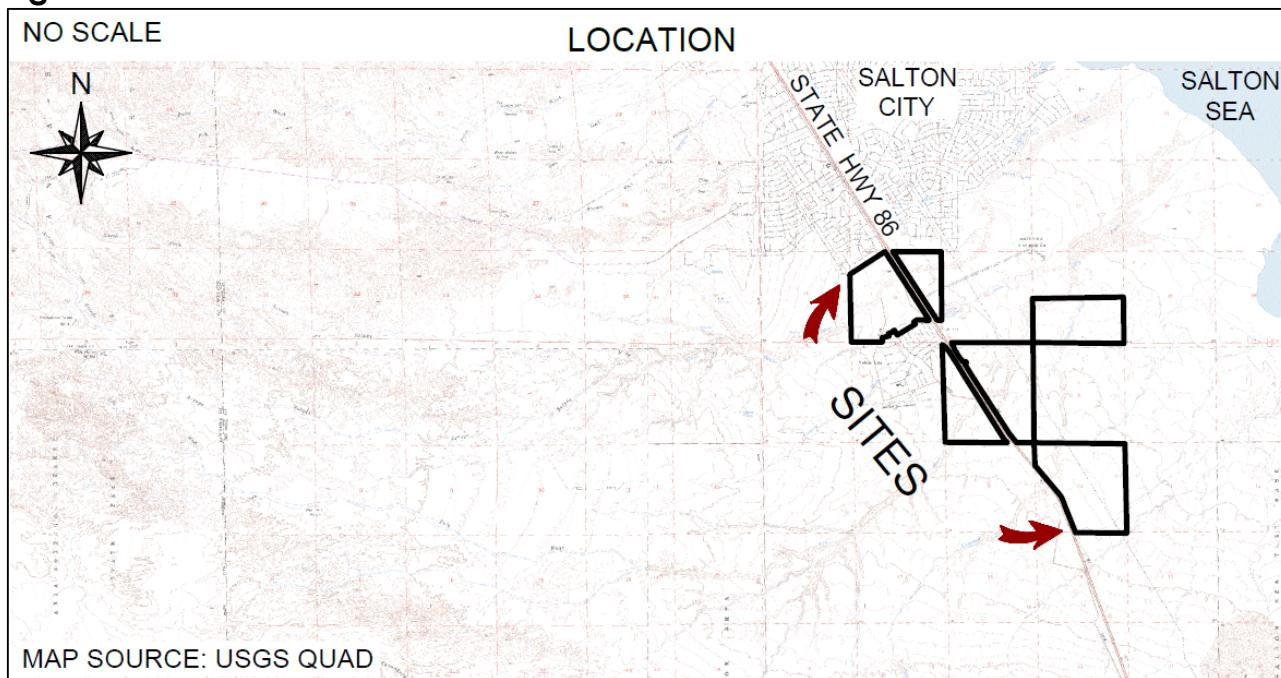
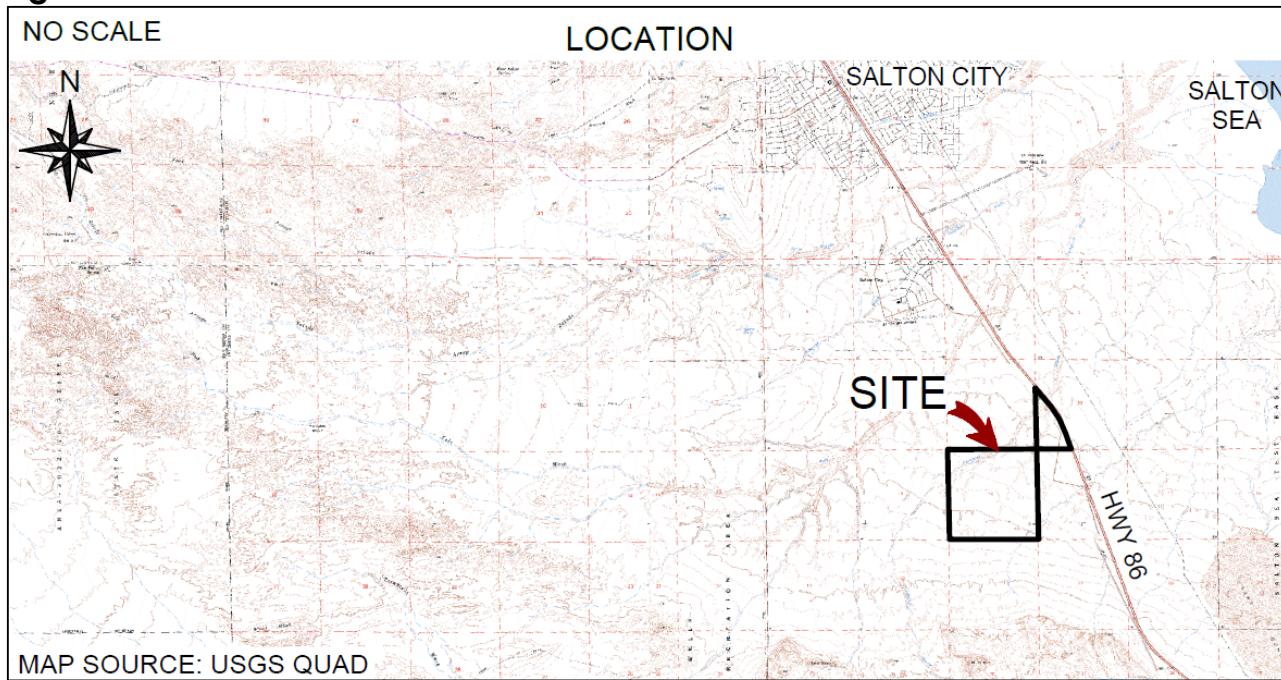


Figure 2. Location of Lease 9644



AUTHORIZED USE:

Lease 9643: Geothermal resources lease, allowing surface occupancy and drilling of up to four geothermal wells on State RMI and fee-owned lands.

Restriction on Surface Access for Drilling: Surface access for drilling operations is expressly prohibited on the following parcels: APNs 017-010-056, 017-010-016, 017-010-017, and 017-150-013. Any well access to the subsurface areas of these parcels must be achieved exclusively through directional drilling methods from approved surface locations outside the restricted parcels.

Lease 9644: Non-surface occupancy geothermal resource lease on State RMI school land underlying Parks managed surface lands. Only allowing subsurface directional drilling of up to four wells.

Any prospective future geothermal field development project, which may involve drilling additional wells, construction of powerplants and transmission lines (commercial scale), will require an amendment to these two proposed geothermal leases and must be presented to the Commission for consideration and may only be taken into consideration after further analysis under the California Environmental Quality Act (CEQA).

Figure 3. Site Map of Lease 9643

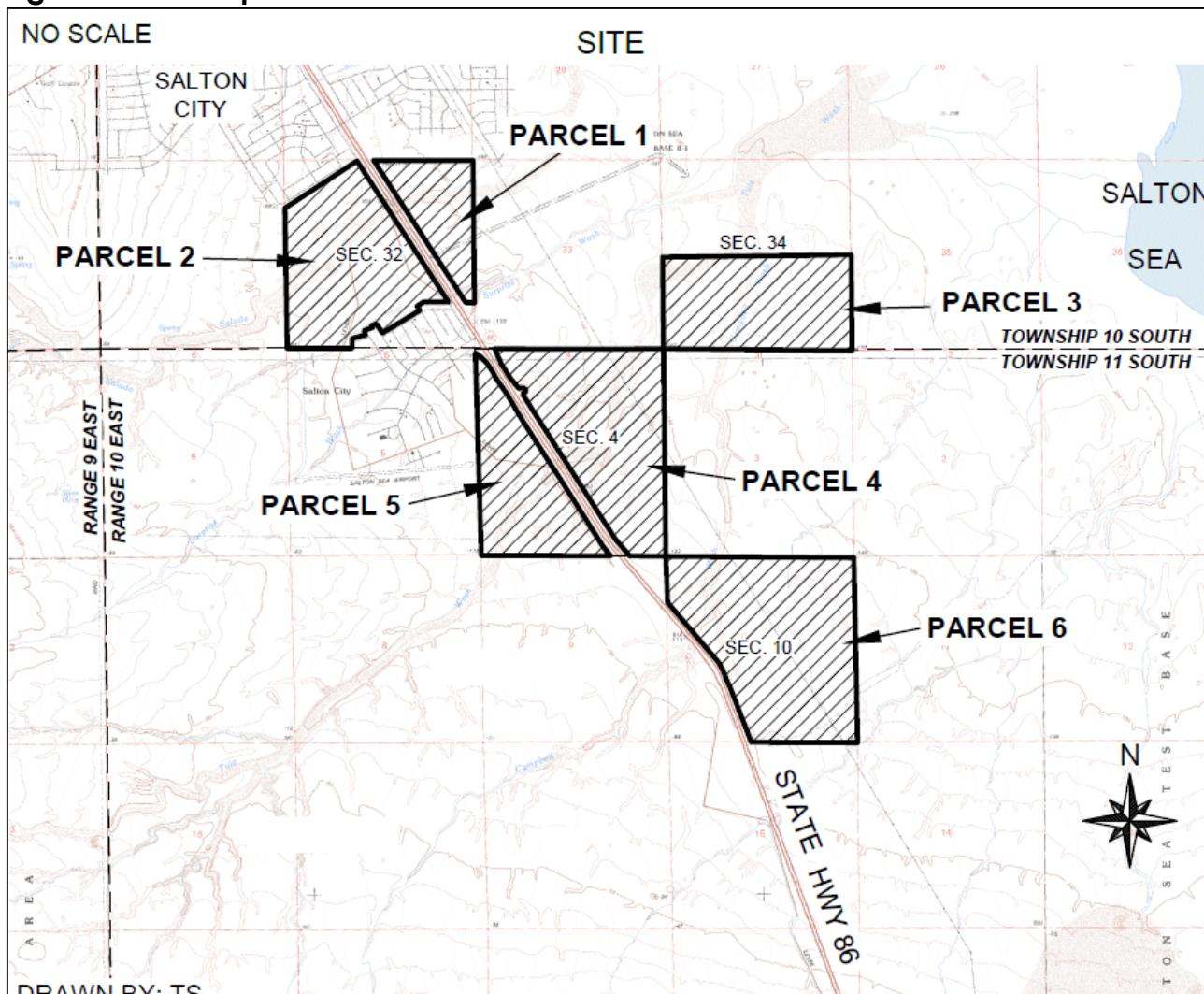
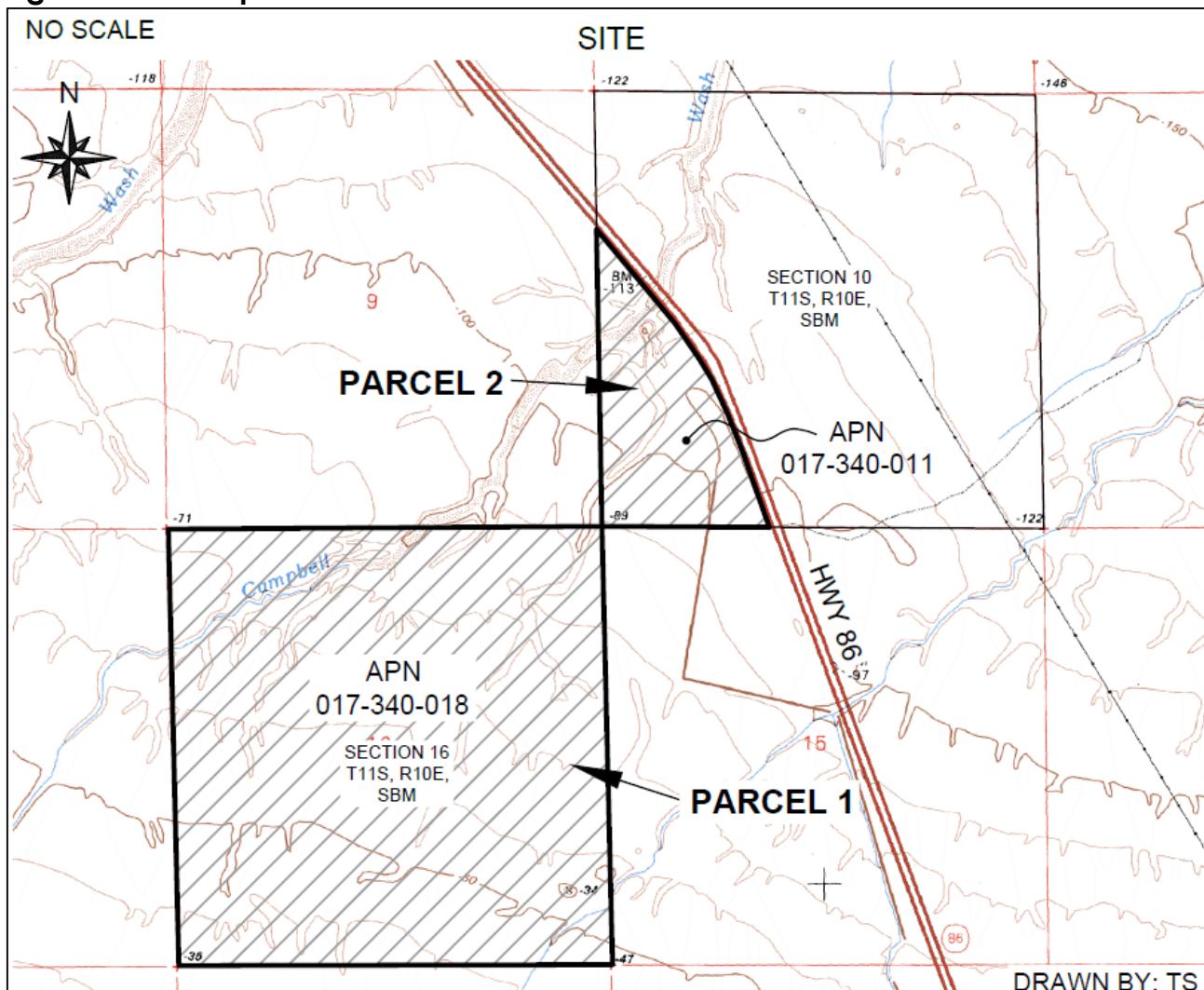


Figure 4. Site Map of Lease 9644

NOTE: This depiction of the lease premises is based on unverified information provided by the Applicant or other parties and is not a waiver or limitation of any State interest in the subject or any other property.

TERM:

5 years, beginning November 1, 2020

CONSIDERATION:

Annual Rent: \$10 per acre. The total annual rent for both leases is \$27,390.

Lease 9643: the annual rent is \$20,160.

Lease 9644: the annual rent is \$7,230.

PROPOSED AMENDMENTS:

- **Lease Term:** To be extended by 5 years. Lease 9643 and Lease 9644 to expire on October 31, 2030.
- **Liability Insurance:** Policy naming the State as additional insured, with coverage of at least \$2,000,000 per occurrence and a general aggregate limit of at least \$5,000,000.
- **Bond:** \$330,000 in favor of the Commission for each well drilled on or through the leased lands. The bond must be received by the Commission prior to drilling a well.
- **Management Fee:** By December 1, 2025, the Applicant will execute a standard reimbursement agreement for \$15,500 (per year), covering both leases, with automatic annual renewals that increase the value by 5 percent per year thereafter, to cover periodic lease inspections, and the administration and implementation of the lease terms.

BACKGROUND:

The Truckhaven area near the Salton Sea has long been recognized for its geothermal potential, with geothermal prospecting activities dating back to the 1960s. The Applicant's ultimate objective is to develop a full-scale geothermal field within the Truckhaven geothermal area, which spans multiple surface ownerships, including land owned and managed by the Commission, the U.S. Bureau of Land Management (BLM), Parks, and private landowners.

In September 2014, the Applicant secured rights to several federal leases from BLM in areas surrounding the proposed State leases 9643 and 9644. On February 24, 2015, the Applicant—a subsidiary of Ormat Nevada Inc., applied to the Commission for a negotiated geothermal resource lease covering approximately 2,739 acres. Pursuant to Public Resources Code section 6405, the Commission holds exclusive authority to lease State mineral interests.

In consultation with Parks, staff divided the Applicant's proposal into two separate lease areas (leases 9643 and 9644) to ensure geothermal drilling would not conflict with Parks' surface use at the Ocotillo Wells State Vehicular Recreation Area. The Applicant subsequently scaled the project to qualify as a geothermal exploratory project under Public Resources Code section 21065.5. This qualification permits the lessee to drill up to six wells (including two wells on private lands) based on the prior

CEQA review. On October 22, 2020 ([Item 45, October 22, 2020](#)), the Commission issued geothermal leases 9643 and 9644 to the Applicant. Since the issuance of these two leases, the Applicant has maintained steady progress on project development, but additional time is needed for the Applicant to pursue its expanded program. In the past 5 years, the Applicant initiated the exploration phase, securing permits and drilling two geothermal wells (84-6 and 87-6) on BLM lands, with 10 production and injection wells authorized. Detailed engineering and layout plans have been prepared for two 15 to 25 MW binary geothermal power plants, a 15 MW photovoltaic solar field to offset parasitic loads, approximately 8.4 miles of geothermal fluid pipelines, and an electrical substation with transmission interconnection facilities, all designed with integrated environmental protection measures and BLM visual mitigation standards. The Applicant has also completed substantial site preparation and permitting work, including identifying facility locations, securing authorizations for 265.8 acres of surface disturbance across BLM, State, and private lands, planning and routing access roads, arranging aggregate sourcing and water supply, and preparing laydown areas for equipment, positioning the project to move directly into construction once final permits are issued.

The future development of an expanded project will require the Applicant to submit another lease amendment application for Commission consideration which will be evaluated subject to Imperial County's ongoing CEQA/NEPA review. Agencies are currently processing the necessary permits, including those for grading, encroachment, air quality, and State Parks access.

PROJECT DESCRIPTION:

The current scope of the project remains unchanged from that described in the 2020 staff report ([Item 45, October 22, 2020](#)). The Applicant proposes to drill, test, and evaluate geothermal resources on State lands as part of a program to assess commercial viability prior to any future development. The plan includes up to 10 wells within the Truckhaven Geothermal Area—four on State lands (Lease No. 9643 and only the subsurface portion of Lease No. 9644), two on private lands, and four on Federal lands (to be approved separately by BLM after analysis under NEPA). Currently, two wells have been drilled on federal lands. The activities authorized under the lease, including site preparation, drilling, flow testing, and monitoring, are consistent with [Imperial County's Conditional Use Permit No. 18-0038](#) and the associated Mitigated Negative Declaration (SCH No. 2019119033). No additional geothermal field development is authorized under these lease amendments. The

scope and environmental considerations remain identical to those previously reviewed and approved, and no new impacts have been identified that would require additional CEQA analysis.

STAFF ANALYSIS AND RECOMMENDATION:

AUTHORITY:

Public Resources Code sections 6005, 6216, 6301, 6501.1, 6503, 6904, 6913, 6918, 6919, 8701, 21065.5, and 21090.1.

STATE'S BEST INTERESTS:

Public Resources Code section [6217.5](#) requires that net revenue from school lands be deposited in the State Treasury for the benefit of the State Teachers' Retirement System. Leasing, exploration, and development of school and lieu lands for geothermal resources also support California's broader goal of increasing electricity generation from renewable sources.

The Applicant intends to evaluate geothermal resources on State lands as part of a program to assess commercial viability prior to any future development. If available in commercial quantities. Geothermal energy provides reliable baseload power that is flexible and emits virtually no nitrogen oxides or carbon dioxide. Unlike fossil fuels, geothermal development involves no combustion and supports California's clean energy transition. These proposed leases will contribute to meeting the State's greenhouse gas reduction goal of 40 percent below 1990 levels by 2030 ([SB 32, 2016](#)) and 85 percent below 1990 levels by 2045 ([AB 1279, 2022](#)), and its renewable energy procurement targets of 60 percent by 2030, 90 percent by 2035, 95 percent by 2040, and 100 percent by 2045 ([SB 100, 2018](#); [SB 1020, 2022](#)).

Geothermal operations are subject to oversight by Federal, State, and local agencies, including BLM (for federal lands), the California Geologic Energy Management Division (for the proposed lease areas), and Imperial County as the CEQA lead agency.

Under Public Resources Code section 6919, the Commission may directly negotiate a geothermal lease—rather than conduct a competitive bid—if the area is unsuitable for bidding due to factors such as small size, irregular configuration, or limited surface access. The lease areas meet these criteria. They are irregularly shaped and surrounded by other lands already under the Applicant's control. The Applicant has consolidated Federal and private geothermal leases in the

Truckhaven area, and the subject State parcels are interspersed within this larger holding. Leasing to a different party would be impractical and could lead to operator conflict, given the fragmented parcel layout. The Applicant intends to unitize all holdings—Federal, private, and State—to optimize production, reduce environmental impacts, and minimize interference with Parks operations in the Ocotillo Wells State Vehicular Recreation Area.

Because the Applicant is uniquely positioned to integrate all parcels into a unified development plan in coordination with all stakeholders, staff finds that a negotiated lease amendment is appropriate and in the State's best interest.

CLIMATE CHANGE:

INTRODUCTION:

Geothermal development projects directly support California's climate goals by advancing the development of clean, renewable energy, helping California achieve its 100 percent clean electricity target by 2045. Evaluating geothermal resources through this lease is one of the optimal solutions for California's climate crisis, which is caused primarily by greenhouse gas emissions from the production and use of fossil fuels. In particular, the production and use of oil and gas, including natural gas, diesel, and gasoline, accounted for 78 percent of California's emissions in 2021 across all sectors.¹ Each year, global atmospheric concentrations of carbon dioxide and methane continue to rise to levels higher than any point in human history ([National Oceanic and Atmospheric Administration, 2024](#)). As a result, California is already experiencing a multitude of impacts from climate change, such as more extreme and frequent heatwaves, wildfires, drought, debris flows, rising sea surface temperatures, sea level rise, ocean acidification, and more.

DATA & PROJECTIONS:

The impacts of climate change are having negative consequences on human health, biodiversity, food and water security, property loss, and critical infrastructure ([Fifth National Climate Change Assessment: Southwest Region, 2023](#)). For example,

¹ Based on all emissions from California Air Resources Board's [California GHG Inventory By Scoping Plan Category 2023 Edition: 2000 to 2021](#) with 'Sector & Activity Details' that list petroleum products and activities, including but not limited to natural gas, gasoline, crude oil, diesel, jet fuel, oil and gas production and processing, and petroleum refining.

between 2015 and 2021, California endured 15 of its 20 most destructive wildfires ever recorded, resulting in 42,000 destroyed structures and 154 lives lost ([CAL FIRE, 2024](#)). Devastating impacts such as these are projected to worsen as the climate continues to warm. If greenhouse gas emissions are not lowered substantially, air temperatures in California could increase 4.4 to 5.8 degrees Fahrenheit by 2050 and 5.6 to 8.8 degrees Fahrenheit by 2100 ([California's Fourth Climate Change Assessment Statewide Summary Report, 2018](#)).

The most effective way to prevent the worst impacts of the climate crisis is to reduce greenhouse gas emissions by eliminating the use of fossil fuels, including natural gas, and transitioning the state's energy portfolio to renewable and zero carbon sources such as solar, wind, and geothermal. The State is already making great progress towards these goals, securing 67 percent of retail electricity from renewable and zero-carbon sources in 2023 ([California Energy Commission, 2025](#)). The proposed lease would positively contribute towards complying with the 100 percent renewable, zero-carbon sources requirement date of 2045.

ANALYSIS:

The lease areas are open lands with moderate to low vegetation fuels and are vulnerable to the above events, including dust storms and flash flooding from thunderstorms, and to a lesser extent, wildland fires. Although the lease areas and surrounding lands may be vulnerable to these weather events, these projected climate change impacts are not expected to affect the use of the lease areas for geothermal exploration.

RECOMMENDATION:

The Applicant is responsible for ensuring that the drilling locations are maintained in a manner that does not contribute to wildland fire hazards. Regular maintenance of vegetation within the project area and access to the leased lands will help minimize the threat of fire hazards.

TRIBAL CONSULTATION AND ENVIRONMENTAL JUSTICE:

In accordance with the Commission's [Environmental Justice Policy](#), staff conducted a comprehensive environmental justice evaluation for the original geothermal leases issued in 2020. This included identifying nearby communities with elevated environmental burdens using CalEnviroScreen 3.0, conducting outreach to 45 individuals and environmental justice organizations, and engaging in direct dialogue with one environmental justice group. Concerns raised regarding

hazardous materials, air and water quality, and equitable distribution of project benefits were addressed through meetings, clarification of project scope, and the development of a community engagement and outreach plan required under the lease terms.

Additionally, outreach was extended to 15 culturally affiliated Native American Tribes, consistent with AB 52 and the Commission's [Tribal Consultation Policy](#), though no requests for consultation were received.

Because there has been no change in the scope of the proposed project since the issuance of the original leases, this environmental justice evaluation remains valid, and no further analysis is necessary.

CONCLUSION:

For all the reasons above, staff believe the approval of these amendments is in the best interests of the State, and staff recommends the Commission approve the amendments.

OTHER PERTINENT INFORMATION:

1. Approval or denial of the applications is a discretionary action by the Commission. Each time the Commission approves or rejects the use of school land, it exercises legislatively delegated authority and responsibility as trustee of the State's school land, as authorized by law. If the Commission denies the application, the Applicant will not be able to drill on or underneath the leased land. Upon expiration or prior termination of the leases, the Lessee will have no right to a new lease or to renewal of any previous lease.
2. This action is consistent with the Leading Climate Activism focus area of the Commission Strategic Plan, which calls for leveraging lands and resources under the Commission's jurisdiction to seek and facilitate carbon-neutral, renewable energy revenue-generation activities, including geothermal development, and to evaluate all proposals in the context of climate resilience and adaptation.
3. A Mitigated Negative Declaration (MND), State Clearinghouse No. 2019119033, was prepared for this Project by Imperial County and adopted on December 11, 2019. Commission staff reviewed the MND and Mitigation Monitoring Program (MMP) pursuant to the provisions of CEQA (Pub. Resources Code, § 21081.6) and adopted by the lead agency.

The Commission considered the MND at its April 29, 2020 meeting ([Item 67, April 29, 2020](#)). As part of the Commission's approval of the lease, the Commission adopted an independent MMP made in conformance with the State CEQA Guidelines (Cal. Code Regs., tit. 14, § 15096), as contained on file in the Sacramento office of the California State Lands Commission and incorporated by reference hereto. The Commission's previously adopted MMP remains in full force and effect.

No substantial changes to the project, to the circumstances in which the project occurs, or other new information requires a subsequent or supplemental CEQA document for the project to continue. The Applicant will be required by the terms of the existing lease to continue to implement the Commission's previously imposed MMP.

4. This activity involves lands which have NOT been identified as possessing significant environmental values pursuant to Public Resources Code section 6370 et seq.; however, the Commission has declared that all lands are "significant" by nature of their public ownership (as opposed to "environmentally significant"). Since such declaration of significance is not based upon the requirements and criteria of Public Resources Code section 6370 et seq., use classifications for such lands have not been designated. Therefore, the finding of the project's consistency with the use classification as required by California Code of Regulations, title 2, section 2954 is not applicable.

EXHIBITS:

A-1. Land Description - Lease 9643

A-2. Land Description - Lease 9644

RECOMMENDED ACTION:

It is recommended that the Commission:

CEQA FINDING:

Find that an MND, State Clearinghouse No. 2019119033, was prepared for this project by Imperial County and adopted on December 11, 2019, and that the Commission has reviewed and considered the information contained therein; that in the Commission's independent judgment, the scope of activities to be carried

out under the lease to be issued by this authorization have been adequately analyzed; that none of the events specified in Public Resources Code section 21166 or the State CEQA Guidelines section 15162 resulting in any new or substantially more severe significant impact has occurred; and, therefore no additional CEQA analysis is required.

Find that the Commission's previously adopted Mitigation Monitoring Program remains in full force and effect.

STATE'S BEST INTERESTS:

Find that approval of the amendments is in the best interests of the State.

FINDING

Find that the lands subject to the proposed lease amendments remain unsuitable for competitive bidding, due to their irregular configuration and inaccessibility from reasonably available or obtainable surface drill sites. These lands are interspersed within the Applicant's existing federal and private geothermal lease holdings in the Truckhaven area and thus continue to lack practical access for parties other than the Applicant.

AUTHORIZATION:

1. Authorize an amendment to the Geothermal Resources Lease No. 9343 issued to ORNI 5 LLC, for the lands described in Exhibit A, Land Description, and as shown on Figure 1, Location Map and Figure 3, Site Map (for reference purposes only) attached and by this reference made a part hereof, to extend the existing lease term by an additional 5 years.
2. Authorize an amendment to the non-surface occupancy Geothermal Resources Lease No. 9644 issued to ORNI 5 LLC, for the lands described in Exhibit A, Land Description, and as shown on Figure 2, Location Map and Figure 4, Site Map (for reference purposes only) attached and by this reference made a part hereof, to extend the existing lease term by an additional 5 years.

EXHIBIT A-1

LEASE 9643

LAND DESCRIPTION

Six (6) parcels of State School and Lieu Lands in Imperial County, State of California, more particularly described as follows:

PARCEL 1

That portion of Section 32 Township 10 South, Range 10 East, San Bernardino Meridian, as shown on that Official Township Survey Plat approved October 6, 1856, Imperial County described as PARCEL FOUR in that certain Grant Deed recorded on November 13, 2014 in Document 2014022678 in Official Records, Imperial County.

PARCEL 2

That portion of Section 32 Township 10 South, Range 10 East, San Bernardino Meridian, as shown on that Official Township Survey Plat approved October 6, 1856, Imperial County described as PARCEL SEVEN in that certain Grant Deed recorded on November 13, 2014 in Document 2014022678 in Official Records, Imperial County.

PARCEL 3

South ½ of Section 34 Township 10 South, Range 10 East, San Bernardino Meridian, as shown on that Official Township Survey Plat approved October 6, 1856, Imperial County.

PARCELS 4 and 5

All of Section 4 Township 11 South, Range 10 East, San Bernardino Meridian, as shown on that Official Township Survey Plat approved June 4, 1856, Imperial County.

EXCEPTING THEREFROM any portion of land lying within the right-of-way of State Highway 86.

PARCEL 6

That portion of Section 10 Township 11 South, Range 10 East, San Bernardino Meridian, as shown on that Official Township Survey Plat approved June 4, 1856, Imperial County.

EXCEPTING THEREFROM any portion of land lying southwesterly of the northeasterly line of the right-of-way of State Highway 86.

END OF DESCRIPTION

Prepared 04/09/2025 by the California State Lands Commission Boundary Unit.



EXHIBIT A-2

LEASE 9644

LAND DESCRIPTION

Two parcels of State School and Lieu Lands in Imperial County, State of California, more particularly described as follows:

PARCEL 1

All Section 16 Township 11 South, Range 10 East, San Bernardino Meridian, as shown on that Official Township Survey Plat approved June 4, 1856, Imperial County.

PARCEL 2

That portion of Section 10 Township 11 South, Range 10 East, San Bernardino Meridian, as shown on that Official Township Survey Plat approved June 4, 1856 lying westerly of the westerly right-of-way line of Highway 86.

END OF DESCRIPTION

Prepared 04/09/2025 by the California State Lands Commission Boundary Unit.

