

CONCURRENCE IN SENATE AMENDMENTS

AB 527 (Papan)

As Amended September 5, 2025

Majority vote

SUMMARY

Establishes an exemption from the California Environmental Quality Act (CEQA) for geothermal exploratory projects, if specified conditions are met, including full reclamation of the project site.

Senate Amendments

- 1) Require the well log for an enhanced geothermal exploratory project exempted by the bill to include the chemical and physical characteristics, and amounts, of well stimulation fluids.
- 2) Require the Division of Geologic Energy Management (CalGEM) to promulgate regulations, as specified, for enhanced geothermal system wells by January 1, 2029.
- 3) Prior to these CalGEM regulations, require the well operator to provide specified information to the CalGEM Supervisor.
- 4) Revise the definition of “geothermal exploratory project” to require, with specified exceptions, wells to be located at least one-half mile from commercial geothermal development wells.
- 5) Add exclusions for sites on or near sites the “Cortese List,” identified habitat, conservation easements, wetlands, roads, public buildings, and adjacent properties.
- 6) Require the lead agency to determine the project will not result in significant adverse impacts to natural resources, hydrological resources, tribal, historical, and other cultural resources, as well as that unusual circumstances do not exist that would cause the project to have a significant adverse impact on the environment.
- 7) Require the project applicant to provide to the lead agency a legally binding commitment to comply with specified labor standards.
- 8) Require the project developer to conduct a reconnaissance survey, as specified, to identify potential environmental impacts.
- 9) Requires the lead agency to consult with a California Native American tribe that is traditionally and culturally affiliated with the project area in order to determine if the project will result in significant adverse impacts to a tribal cultural resource.
- 10) Requires a geothermal field development project located on a site where a geothermal exploratory project was deployed using this bill’s exemption to use a baseline for CEQA review that reflects the site before the geothermal exploratory project.

COMMENTS

Geothermal is a form of renewable energy defined as heat energy from the earth. Geothermal resources are reservoirs of hot water that are naturally occurring or are manufactured to operate at varying temperatures and depths below the earth's surface. Wells, ranging from a few feet to several miles deep, can be drilled into underground reservoirs to tap steam and hot water that can be brought to the surface for use in electricity generation, direct heating, and industrial processes. The United States is the world's largest producer of geothermal electricity and California has the highest geothermal capacity of all states. "The Geysers" geothermal steam field, located within Lake, Mendocino, and Sonoma Counties, contains 349 out of California's 563 high-temperature geothermal wells within the state. Imperial County (including the Salton Sea) houses 194 of these wells, and the remaining 20 are located in Lassen, Modoc, and Mono Counties. California has installed 2,627 MW of geothermal nameplate capacity – accounting for 72% of the total geothermal plant capacity in the United States. Many of these geothermal resource areas are known to have been inhabited and visited by Native Americans for thousands of years prior to European settlement.

Under current law, a geothermal project is divided into two discrete components for purposes of CEQA. The "exploration" phase involves drilling one or more exploration wells at a given site to map out the subsurface environment and assess exactly where a new geothermal power plant should be located. The subsequent "geothermal field development" phase involves drilling the necessary injector and producer wells, building the power plant, grid connections, and associated infrastructure. This phase is much more complicated and expansive. Typically, a geothermal developer cannot move forward with geothermal field development until some level of exploration has taken place as they need to site the wells in precisely the right location to make sure they are getting enough heat to support power generation, and that information can only be ascertained through exploration.

In 2024, the U.S. Department of Interior adopted add a new categorical exclusion from the National Environmental Policy Act (NEPA) for geothermal resource confirmation activities on federal geothermal resource leases. According to the author, the new categorical exclusion was based on the Bureau of Land Management's (BLM) assessment that geothermal exploration projects, when completed under a high-bar environmental standard, have virtually no negative impacts to the environment.

This NEPA exclusion was adopted for use by BLM for projects on federal lands nationwide. Recent geothermal projects in Nevada and Utah are located on vast expanses of desert managed by BLM, with little potential for land use or environmental conflicts. BLM arrived at a 20 acre limit on total surface disturbance by looking back at the statistical details of 26 prior projects. Those 26 projects varied widely in well pad size and total disturbance, with 20 acres being the approximate median. The projects ranged from .08 acres (in New Mexico) to 143 acres (in Nevada). The 20-acre limit does not appear to be based on any particular environmental criteria and is not tailored to project or site characteristics.

In California, the geothermal resource potential is not necessarily on federal land, and exploratory and development projects are not necessarily subject to NEPA. Nonetheless, the CEQA exemption in this bill applies regardless of whether the project is on federal land or otherwise subject to NEPA review. Of the 26 projects examined by BLM, three were in

California (two in Inyo County and one in Imperial County). One of the three was on federal land (Inyo National Forest near Mammoth Lakes), and all were under 20 acres.

According to the Author

AB 527 will accelerate the development of geothermal resources and advance California's climate goals by expediting exploratory well projects which have a de minimis impact. In order to gather essential subsurface data to determine the viability of a potential geothermal field, developers must drill exploratory wells. Currently, this exploratory endeavor is treated as a separate project, subject to its own environmental review process. The federal government has previously allowed latitude concerning exploratory wells. In October 2024, the Biden Administration proposed a categorical exclusion under NEPA for these de minimis exploration projects. AB 527 seeks to align California's approach with this federal exclusion, allowing carefully vetted exploratory geothermal projects to be exempt from CEQA. This alignment will eliminate redundant regulatory hurdles, ensuring projects move forward more quickly and efficiently bringing us that much closer to our renewable energy goals.

Arguments in Support

According to co-sponsor Fervo Energy, categorical exclusions for exploratory drilling projects that meet a high standard of environmental stewardship are critical to attracting geothermal developers to California. Developers must fully understand a site's subsurface characteristics to attract financing for a full and capital-intensive geothermal project. California's unique process largely precludes it from developer consideration, as it does not offer the same certainties in timeline and cost that other states can afford. By lowering barriers for developers to confirm their resources and initiate project financing, this bill would greatly improve the chances of attracting geothermal energy developers such as Fervo.

Arguments in Opposition

According to Defenders of Wildlife and other environmental organizations, this bill is unnecessary – while the background document mentions “perceived regulatory challenges” and discusses the competitive advantage that may shift siting to other states, there is no detailed information about any actual regulatory roadblocks to permitting geothermal exploration in California. In our experience, many of these projects go through lead agency review at the county level in a timely manner and with few challenges. Complying with California's robust environmental laws is critical to preserving our resources while developing energy projects.

FISCAL COMMENTS

According to the Senate Appropriations Committee, the Department of Conservation (DOC) estimates one-time costs of \$3.28 million in year one for internal infrastructure development and ongoing costs of about \$432,000 annually for two positions (the Oil, Gas, and Geothermal Administrative Fund [OGGA]) to implement the provisions of this bill, including developing and applying specialized expertise in enhanced geothermal systems; leading collaborative efforts with similarly focused agencies from other states; reviewing and permitting of advanced geothermal wells differentiated from enhanced geothermal system wells where additional methods other than hydraulic fracturing is proposed; reviewing seismic monitoring plans; reviewing disclosures of anticipated composition and disposition of well stimulation fluids; technical support for regulatory development; and administrative support. CalGEM notes OGGA is partially funded by fees assessed on geothermal operators. In the absence of an identified

funding source, to fund the work required in this bill, CalGEM would need to assess fees on geothermal operators.

VOTES:

ASM NATURAL RESOURCES: 14-0-0

YES: Bryan, Alanis, Connolly, Ellis, Flora, Garcia, Haney, Hoover, Kalra, Muratsuchi, Pellerin, Schultz, Wicks, Zbur

ASM APPROPRIATIONS: 15-0-0

YES: Wicks, Sanchez, Arambula, Calderon, Caloza, Dixon, Elhawary, Fong, Mark González, Hart, Pacheco, Pellerin, Solache, Ta, Tangipa

ASSEMBLY FLOOR: 76-0-3

YES: Addis, Ahrens, Alanis, Alvarez, Arambula, Ávila Farías, Bains, Bauer-Kahan, Bennett, Berman, Boerner, Bonta, Bryan, Calderon, Caloza, Carrillo, Castillo, Chen, Connolly, Davies, DeMaio, Dixon, Elhawary, Ellis, Flora, Fong, Gabriel, Gallagher, Garcia, Gipson, Mark González, Hadwick, Haney, Harabedian, Hart, Hoover, Irwin, Jackson, Kalra, Krell, Lackey, Lee, Lowenthal, Macedo, McKinnor, Muratsuchi, Ortega, Pacheco, Papan, Patel, Patterson, Pellerin, Petrie-Norris, Quirk-Silva, Ramos, Ransom, Celeste Rodriguez, Michelle Rodriguez, Rogers, Blanca Rubio, Sanchez, Schiavo, Schultz, Sharp-Collins, Solache, Soria, Stefani, Ta, Tangipa, Valencia, Wallis, Ward, Wicks, Wilson, Zbur, Rivas

ABS, ABST OR NV: Aguiar-Curry, Jeff Gonzalez, Nguyen

UPDATED

VERSION: September 5, 2025

CONSULTANT: Lawrence Lingbloom / NAT. RES. / (916) 319-2092

FN: 0001986