

**ALASKA STATE LEGISLATURE  
HOUSE SPECIAL COMMITTEE ON ENERGY**

February 28, 2023

10:16 a.m.

**MEMBERS PRESENT**

Representative George Rauscher, Chair  
Representative Tom McKay  
Representative Stanley Wright  
Representative Mike Prax  
Representative Calvin Schrage  
Representative Ashley Carrick

**MEMBERS ABSENT**

Representative Josiah Patkotak

**COMMITTEE CALENDAR**

HOUSE BILL NO. 74

"An Act relating to geothermal resources; relating to the definition of 'geothermal resources'; and providing for an effective date."

- HEARD & HELD

**PREVIOUS COMMITTEE ACTION**

BILL: HB 74

SHORT TITLE: GEOTHERMAL RESOURCES

SPONSOR(S): RULES BY REQUEST OF THE GOVERNOR

02/15/23	(H)	READ THE FIRST TIME - REFERRALS
02/15/23	(H)	ENE, RES
02/23/23	(H)	ENE AT 10:15 AM BARNES 124
02/23/23	(H)	-- MEETING CANCELED --
02/28/23	(H)	ENE AT 10:15 AM BARNES 124

**WITNESS REGISTER**

JOHN BOYLE, Commissioner  
Department of Natural Resources  
Juneau, Alaska

**POSITION STATEMENT:** Introduced HB 74 on behalf of the sponsor, House Rules by request of the governor.

AARON O'QUINN, Leasing Manager  
Division of Oil and Gas  
Department of Natural Resources  
Juneau, Alaska

**POSITION STATEMENT:** On behalf of the sponsor, House Rules by request of the governor, co-presented a PowerPoint, titled "HB 74: Geothermal Resources."

DAVID LEPAIN, PhD, Director  
Division of Geological and Geophysical Surveys  
Department of Natural Resources  
Juneau, Alaska

**POSITION STATEMENT:** On behalf of the sponsor, House Rules by request of the governor, co-presented a PowerPoint, titled "HB 74: Geothermal Resources."

BRETT HUBER, Chair  
Alaska Oil and Gas Conservation Commission  
Department of Commerce, Community, and Economic Development  
Anchorage, Alaska

**POSITION STATEMENT:** Answered questions during the hearing on HB 74.

JOHN CROWTHER, Deputy Commissioner  
Department of Natural Resources  
Juneau, Alaska

**POSITION STATEMENT:** Answered questions during the hearing on HB 74.

HALEY PAINE, Deputy Director  
Division of Oil and Gas  
Department of Natural Resources  
Anchorage, Alaska

**POSITION STATEMENT:** Answered questions during the hearing on HB 74.

#### **ACTION NARRATIVE**

[10:15:57 AM](#)

**CHAIR GEORGE RAUSCHER** called the House Special Committee on Energy meeting to order at 10:16 a.m. Representatives Carrick, McKay, Wright, Schrage, and Rauscher were present at the call to order. Representative Prax arrived as the meeting was in progress.

#### **HB 74-GEOTHERMAL RESOURCES**

[10:17:22 AM](#)

CHAIR RAUSCHER announced that the only order of business would be HOUSE BILL NO. 74, "An Act relating to geothermal resources; relating to the definition of 'geothermal resources'; and providing for an effective date."

[10:18:30 AM](#)

JOHN BOYLE, Commissioner, Department of Natural Resources, stated that Governor Mike Dunleavy seeks to implement an "all of the above" strategy for energy in Alaska, as this would make use of both fossil fuels and renewable energy sources, with the goal of lowering energy costs for Alaskans. He stated that the goal of the proposed legislation would be to incentivize investments into the development of geothermal energy in the state.

[10:22:04 AM](#)

AARON O'QUINN, Leasing Manager, Division of Oil and Gas, Department of Natural Resources, co-presented a PowerPoint, titled "HB 74, Geothermal Resources" [hard copy included in the committee packet]. He began on slide 2 and gave an outline of the presentation.

[10:23:07 AM](#)

DAVID LEPAIN, PhD, Director, Division of Geological and Geophysical Surveys, Department of Natural Resources, co-presented a PowerPoint, titled "HB 74, Geothermal Resources." He moved to slide 3 and slide 4, giving an overview of the necessary elements of geothermal energy. He explained that a well would bring steam up into the facility, spinning the turbines, and this would produce electricity. He continued that water would be injected into the ground in another area to cool and eventually be reheated. He continued to slide 5, giving an overview of the geothermal heat flow in Alaska. He stated that Alaska is thought to have an elevated heat flow, which mostly comes from granite and volcanic systems. He said that the volcanic systems often show up in the form of hot springs.

[10:28:21 AM](#)

DR. LEPAIN continued to slide 6 and pointed out the geothermal gradients in the state. He said that the cone on the map shows the geothermal source in the Alaska Peninsula. He continued to

slide 7 and slide 8 and gave an overview of the quality of the geothermal resource in the state. He said that hotter temperatures, higher flow rates, more shallow depths, and natural recharge are all better for producing more energy at a lower cost; however, he added that having all these factors in a single geothermal source is rare. He stated that a properly managed geothermal resource would be able to produce energy indefinitely, adding that the technology to use these resources is quickly improving.

[10:34:26 AM](#)

REPRESENTATIVE CARRICK asked whether reinjection of water into the ground has long-term sustainability.

DR. LEPAIN answered that this depends on the management of the source; if managed correctly with multiple far-off reinjection wells, the source can be used indefinitely. In response to a follow-up question, he stated that the turbines have a lifespan of between 30 and 40 wells, however, he expressed uncertainty concerning the lifespan of the wells.

[10:37:38 AM](#)

REPRESENTATIVE PRAX asked whether the state is involved in Chena Power's project in Dutch Harbor.

MR. O'QUINN answered that this project is on land owned by the Native corporations, so the state is not involved.

[10:39:20 AM](#)

BRETT HUBER, Chair, Alaska Oil and Gas Conservation Commission (AOGCC), Department of Commerce, Community, and Economic Development, returned to a previous question and reiterated that a geothermal project could continue to produce for "many decades," and it would be possible to drill a new well in proximity to an old, useable well.

[10:40:30 AM](#)

REPRESENTATIVE PRAX asked whether HB 74 would cause the state to become more involved with companies to develop geothermal energy.

[10:41:25 AM](#)

JOHN CROWTHER, Deputy Commissioner, Department of Natural Resources, answered that private landowners would continue to manage their own land, and the bill is meant to get the state to develop geothermal energy on state lands and private landowners on their own land.

[10:43:11 AM](#)

DR. LEPAIN, in response to a follow-up question, answered that the name of the Dutch Harbor project is Makushin Volcano. He added that the bill would allow the state to do more research on the potential of certain areas for geothermal energy sites.

[10:45:39 AM](#)

MR. O'QUINN continued to slide 9 and slide 10 and gave an overview of HB 74. He explained that the bill would allow Alaska's geothermal exploration program to be modernized. It would align geothermal licensing with the requirements for oil and natural gas, making it more economically viable for private interests. The proposed legislation would also reform definitions for geothermal resources so there is a focus on commercial use. He continued that the bill would increase the amount of land that can be used for exploration, and it would repeal the provision allowing the state to renegotiate the royalties after a period of 20 years.

[10:49:10 AM](#)

MR. O'QUINN continued to slide 11 and slide 12 and gave an overview of the leasing and permitting process and project history. He stated that the two most recent permits for exploration were offered in 2021 for Mount Spurr and 2022 for Augustine Island. He said that under the current rules, if there are competing proposals to use land for a geothermal project, there is a competitive process, but in the case of only a single bid, the permit is usually issued. Currently, the permits last only two years; however, the bill would change this to five years, modeled after oil and natural gas licensure.

[10:52:10 AM](#)

REPRESENTATIVE PRAX asked whether five years would be enough time for geothermal exploration.

MR. O'QUINN answered that the five-year period is meant to provide a balance between getting some amount of work done and

"warehousing" tracts of land for later use. He added that if some work is done during the five-year exploration period, the owner of the permit will be eligible for a ten-year lease.

[10:53:36 AM](#)

MR. O'QUINN continued to slide 13 and slide 14 and showed a brief summary of the sectional analysis for HB 74. He continued to slide 15 and stated that Section 1 would allow AOGCC to pursue primacy for Class V injection wells for geothermal developments.

[10:56:00 AM](#)

REPRESENTATIVE SCHRAGE questioned the definition of a Class V well.

MR. HUBER answered that there are 32 categories that would fall under the definition of Class V, including geothermal wells. He added that it does not change the rules of the permitting process; it would allow a state agency to issue the permits rather than the federal government. In response to a follow-up question, he said that the bill would allow AOGCC to exempt certain smaller-scale projects from permitting.

REPRESENTATIVE SCHRAGE asked whether any permits for geothermal projects had been rejected in the past.

MR. O'QUINN expressed uncertainty. In response to a follow-up question, he said that AOGCC views geothermal wells in much the same way as unregulated water wells around the state, and they would therefore be low risk.

[11:01:53 AM](#)

REPRESENTATIVE CARRICK asked for a comparison between the average depths of a water well and a geothermal well.

MR. HUBER answered that in his personal experience, water wells are often around 500 feet, although there is no official data kept on them.

MR. CROWTHER added that the smaller scale projects that would be exempt would be more shallow and less complex wells because they would be for personal or smaller scale use, and the electricity generated from them would not be sold.

[11:06:18 AM](#)

CHAIR RAUSCHER asked if the bill would have any potential impact on land held by Native Alaskans.

MR. O'QUINN answered that the state would only lease state land, and lands held by the Native Corporations are considered private. Those lands would still be subject to the permitting process, just as they are for oil and natural gas.

[11:07:48 AM](#)

REPRESENTATIVE PRAX asked whether AOGCC overlaps with the Department of Environmental Conservation (DEC).

MR. HUBER answered that DEC has a role with certain environmental issues while AOGCC handles the actual permitting, and that both agencies work together on these types of projects. In response to a follow-up question, he stated that there is a "very extensive" process in which AOGCC reviews the plans of a project before any permits are issued, and any change of plans must be approved. In the case of a catastrophic loss of control of a well, an investigation would take place.

[11:13:33 AM](#)

MR. O'QUINN continued to slide 16 and gave a brief overview of Sections 2, 10, and 15. He stated that these sections would eliminate some duplicate language found in existing state statutes. He moved to slide 17 and slide 18, stating that Section 3 would bring the geothermal exploration program in line with the oil and natural gas program, which considers permits to be "surface level". Section 3 would also exclude private geothermal users from the requirement to apply for a license or lease. He stated that Section 17 would allow for current permits to be converted to licenses.

[11:15:53 AM](#)

MR. O'QUINN continued to slide 19 and showed a graphic depicting the harvesting of geothermal power. He explained the difference in depth between private and commercial usages, as the difference in depth is part of the reason for not requiring private use permits.

MR. O'QUINN moved to slide 20 and gave an overview of the "preferential rights" found in Section 3 of HB 74. He

reiterated that it would change the rules for geothermal energy to match those of oil and natural gas in regard to the surface and subsurface owner of a parcel of land. He added that permitting laws for any work being done on the surface would remain the same.

[11:20:21 AM](#)

MR. O'QUINN continued to slide 21, pointing out that Section 4 and Section 7 would change geothermal leases to last 10 years, with the possibility of a 5-year extension. He stated that the rule allowing the commissioner of the Department of Natural Resources to renegotiate the rental and royalty agreement after 20 years of production would be repealed.

MR. O'QUINN continued to slide 22 and stated that Section 6 of the proposed legislation would increase the amount of acreage a lessee can hold to 100,000 acres. Rental fees would be changed to be a part of the regulatory process rather than statutory. He continued to slide 23 and said that Section 8 would modernize the unitization statute for geothermal resources to match those used for oil and natural gas. He moved to slide 24 and stated that Sections 9 and 14 would change the definition of geothermal resources to:

the natural heat of the earth; the energy, in whatever form, below the surface of the earth present in, resulting from, or created by, or which may be extracted from, such natural heat; and all minerals in solution or other products obtained from naturally heated fluids, brines, associated gases, and steam, in whatever form, found below the surface of the earth; but excluding oil, hydrocarbon gases, or other hydrocarbon substances.

[11:23:17 AM](#)

REPRESENTATIVE MCKAY asked whether revenues to the state from geothermal production would be subject to the permanent fund.

MR. CROWTHER expressed the belief that this would be the case.

[11:24:06 AM](#)

CHAIR RAUSCHER questioned the generation of the money being added to the permanent fund.

MR. CROWTHER answered that payments from permitting and royalties from geothermal production would be added to the permanent fund. In response to a follow-up question, he said that the resource from which the royalty would be collected is the electricity created by the steam generated from pulling the geothermal heat from the ground.

[11:26:06 AM](#)

REPRESENTATIVE PRAX asked whether any royalties would be set in statute.

MR. O'QUINN answered that there is a minimum royalty rate set in statute while the royalty rate for the lease could be set via regulation.

[11:28:00 AM](#)

HALEY PAINE, Deputy Director, Division of Oil and Gas, Department of Natural Resources, added that there is currently a 1.75 percent royalty rate set in statute for the first 10 years, which is increased to 3.75 percent after 10 years.

[11:28:32 AM](#)

REPRESENTATIVE PRAX, to make geothermal production more economical, asked whether more latitude should be given for the negotiation of royalty rates.

MS. PAINE answered that the minimum royalty rates have been lowered in the past. She added that the prime purpose of HB 74 in regard to royalty rates is to remove the ambiguity that exists once a project has been producing for 20 years.

[11:31:09 AM](#)

MR. O'QUINN continued to slide 25 and stated that Section 13 of the proposed legislation would change the definition of geothermal fluids. The new definition would add certain types of liquids and exclude hydrocarbons.

MR. O'QUINN continued to slide 26 and stated that Section 12 would modify the penalties section of the current statutes to allow AOGCC to assess penalties for violations related to geothermal wells.

[11:33:06 AM](#)

CHAIR RAUSCHER asked whether there is a specific dollar amount prescribed for violations.

MR. HUBER answered that the proposed bill would match the penalties for geothermal production violations to the violations for oil and natural gas.

[11:34:22 AM](#)

DR. LEPAIN moved to slide 27 and stated that the fiscal note for HB 74 would allow for the Alaska Division of Geological and Geophysical Surveys to hire an additional geologist. The position would be a senior level geologist responsible for publishing geological data for the advancement of geothermal development in the state. He expressed the understanding that this program would attract federal funds to help spur geothermal resource development.

[11:37:06 AM](#)

MR. CROWTHER stated that there are several additional slides with supplemental information regarding geothermal systems in Alaska.

[11:37:40 AM](#)

CHAIR RAUSCHER asked how granite systems work in terms of geothermal systems and volcanic systems.

DR. LEPAIN answered that volcanic systems manifest themselves in more obvious ways, but granite systems do produce their own heat.

[11:39:07 AM](#)

REPRESENTATIVE PRAX asked whether geothermal production could result in other valuable byproducts and whether this would be accounted for in the bill.

MR. CROWTHER answered that to ensure safe operations, AOGCC would require license holders to understand what they are drilling through, and this would make such a scenario unlikely. If data were gained showing the presence of other valuable resources, such as hydrocarbons, the license holder would need to apply for another license to pursue these resources. In response to a follow-up question, he said that royalties on any

other resources would still be collected if the license holder applied for another license to harvest those resources.

[HB 74 was held over.]

[11:43:39 AM](#)

**ADJOURNMENT**

There being no further business before the committee, the House Special Committee on Energy meeting was adjourned at 11:43 a.m.