

Utilities Policy Advisory Committee (UPAC)

Wednesday, October 1, 2025

9:20 a.m. – 11:00 a.m.

Blue River Board Room

121 S. Tejon Plaza of the Rockies or Microsoft Teams

[Join the meeting now](#)

9:20 a.m.	1.	Call to Order	
9:25 a.m.	2.	Approval of September 3, 2025 UPAC Meeting Minutes	Decision
9:30 a.m.	3.	Energy and Carbon Management Commission	Discussion
10:30 a.m.	4.	Updated Geothermal Assignment Timeline	Discussion
10:40 a.m.	5.	Customer Comment Customers can provide comments in person, by joining the meeting from a computer or by phone using the link above. If you would like to speak during the customer comment period, please sign up to speak through <u>BoardSubmissions@csu.org</u> prior to the meeting.	Discussion
10:45 a.m.	6.	Committee Member General Discussion	
11:00 a.m.	7.	Adjournment	

Next meeting: November 5, 2025

Note: UPAC Bylaws, Rule 6: Customer and Public Comment: (b) At the discretion of the Chair, or the majority of the Committee Members present, customers and members of the public will be allowed to comment or ask questions concerning items discussed at regular meetings or concerning matters discussed at special meetings. Comments or questions by individuals will be limited to five minutes each, and all customer or public comments will not exceed twenty minutes on any agenda item unless time is extended by the Chair or majority of the Committee Members present.

If you require an ADA-accessible version of this packet of information, please send an email to ub@csu.org or call 719-448-4800.

Utilities Policy Advisory Committee (UPAC)

Wednesday, September 3, 2025

8:00 a.m. – 10:30 a.m.

Blue River Board Room

121 S. Tejon Plaza of the Rockies or [Microsoft Teams](#)

1. Call to Order

Chair Katherine Danner called the meeting to order at 8:00 a.m.

Present – Vice Chair Michael Borden, Committee Member Larry Barrett, Committee Member Chris Meyer, Committee Member Scott Smith, Committee Member David Watson, Alternate Member Albert Badeau and Alternate Member Tom Carter

Utilities Board Chair Dave Donelson was also present at the meeting.

2. Approval of Aug. 8, 2025 UPAC Meeting Minutes

Committee Member Watson made a motion to approve the meeting minutes and Committee Member Barrett seconded the motion. The minutes passed unanimously.

3. State of Colorado Energy Office

Mr. Keith Hay, Managing Director, Policy with the Colorado Energy Office, presented on Geothermal in Colorado's Electric Power Sector. The vision of the Colorado Energy Office is "A prosperous, clean energy future for Colorado".

Alternate Member Carter asked if other modeling has been done on higher numbers, perhaps a 5% load growth. Mr. Hay answered that no additional modeling has been done, he doesn't believe that directionally that would change the results.

Alternate Member Carter said he did not see any mention of what is driven by vehicle electrification, or anything about industry electrification. Mr. Hay stated that the information provided is pre data centers, so all of the industrial load growth is included into that large base load. The only load growth looked at specifically was oil and gas electrification.

Committee Member Smith asked for the definition of a firm dispatchable. Mr. Hay said that the majority of that comes from coal units. He said that when deeper levels of decarbonization were looked at for firm dispatch ability, the model was based on a range of technologies – small modular reactors, geothermal and enhanced geothermal primarily. They also modelled gas combustion units with capture and both gas units with conversion to hydrogen and then hydrogen specific units.

Alternate Member Badeau asked if the relative cost per kilowatt (kw) is anticipated to change. Mr. Hay said the dollar values would change due to increased cost of resources; however, the relative economics would not change – with wind and solar still being the less expensive.

Board Member Barrett asked how important the federal tax policy is in terms of relative comparisons since there are many changes going on in tax policy. Mr. Hay said that the changes in HR1 have made wind and solar more expensive. The industry is seeing price increases that range from around 7% to a high of 30% in some bases for bids. These prices are still below gas and geothermal costs.

Vice Chair Borden asked if the cost of firming renewables is part of the relative cost vs. SMR, or is it while generative cost? Mr. Hay said that all of the pathways are required to meet reliability requirements, in terms of what the North American Electric Reliability Corporation (NERC) requires. Vice Chair Borden asked if battery supported renewables would be in the scope, and Mr. Hay said that they are.

Committee Member Burghart asked for an explanation of the reference to replacement of all fossil fuel resources with six gigawatts (gw) of green hydrogen generations. What is meant by green hydrogen and how is it going to be derived, with respect to water usage? Mr. Hay said the result was surprising. When the modeling was run, there were significant federal tax credits for hydrogen production and consumption, and it is not clear that hydrogen would come in as the least cost non-emitting resource any longer. Green hydrogen is defined in state statute and by IRS guidance as a result of the Inflation Reduction Act.

Alternate Member Carter asked if the net present value is calculated just over the 2023 to 2040 timeframe, and Mr. Hay said that it was calculated from 2023 to 2040. Mr. Hay said that this information and additional workbooks are available on the Colorado Energy Office website.

Alternate Member Badeau asked if pumping fluids other than water is in play. Mr. Hay said that it depends, typically existing water is used. Alternate Member Badeau asked if this is a closed loop system and Mr. Hay said that it is.

Committee Member Watson asked what the cost will be to Colorado residents for the projected \$45 to \$60 billion cost of new electrical generation. Mr. Hay said the information presented does not go down into community-level costs. The purpose of the modeling was to aggregate at a statewide level what the electricity consumption will look like and to understand from the perspective of the generation side what it would take to serve that load.

Committee Chair Danner asked if the Glade project is at risk due to the Department of Energy funding. Mr. Hay said that he would need to double-check this information, but he has not heard that it is at risk.

Committee Member Smith asked what the current coal-fired energy production in the state is. Mr. Hay said that it has been sitting at roughly 30 to 35%. Mr. Hay said the opportunity of advanced energy technology that the Colorado Energy Office has been asked to focus on is in southeast Colorado, west end of Montrose County, and the northwest. This includes gas, hydrogen and geothermal.

Committee Member Watson asked if the permitting process is being developed. Mr. Hay said that the Energy Office does not oversee this, another department has been tasked with this.

Committee Member Watson asked how many companies are marketing geothermal. Mr. Hay said that there are companies building geothermal in the United States, most focusing on existing hydrological sources.

Committee Member Borden asked if for-profit companies (such as Exxon) are being pushed to produce geothermal. Mr. Hay said he is not aware if the major gas companies are moving in this direction.

Committee Member Burghart asked about the budget and number of employees by the Colorado Energy Office. Mr. Hay said that he does not know the current amount but can get this information back to the Committee. The majority of funding for the Colorado Energy Office is through the federal budget, not the general fund.

Committee Chair Danner asked if geothermal is the only technology that is being looked at to implement in the northwest, the southeast, and the west end of Montrose county, or are other energy technologies being looked at? Mr. Hay said that gas with capture, small modular reactors, hydrogen and geothermal are all being considered. Additionally wind and solar are being considered in the southeast as well, since it is a rich wind section of Colorado.

Alternate Member Carter asked about which retiring coal plants are going to be useful for geothermal and which ones are not. If they are not suitable for geothermal, what will they be used for? Mr. Hay said that the window for enhanced geothermal is still being researched. Alternate Member Carter asked if there is enough transmission capacity in load growth areas. Mr. Hay said that the State would need to make between \$4 and \$5 billion in investment.

Committee Member Smith asked if analyzation has been done regarding public pushback on transmission investment. Mr. Hay said the Energy Office is in the process of revising the report, which should be available no later than Oct. 1, 2025.

Committee Member Smith said that the location of electric lines can cause significant problems or cost increases. He asked if the Colorado Energy Office is seeing this as well. Mr. Hay said that there are local concerns about transmission and energy citings. The office has been in touch with different groups about how these transmission lines can serve the community where they are located. For example, fiber lines being pulled with the transmission lines, which could have a direct benefit to the community where the transmission lines are located.

Committee Chair Danner asked if any of the tax credits differentiate from traditional geothermal and advanced geothermal. Mr. Hay said there is no differentiation.

Alternate Member Carter asked if Colorado Springs would be eligible for the U.S. Department of Energy Community Tax Credit Bonus. Mr. Hay said that it should be eligible.

Committee Chair Danner asked if there are any programs at the state or federal level to look at advanced geothermal to generate partnerships. Mr. Hay said there are no partnerships currently, but he can reach out to his contacts to see if this is happening.

Alternate Member Carter asked what happens with insurance, who carries the risk and what are the challenges? Mr. Hay said that he will need to research this and get an answer back to the committee.

Committee Member Smith asked what the primary limitations of geothermal are today. Mr. Hay said the primary limitation of existing geothermal resources is around where hydrologic wells and resources are located. The challenge with advanced geothermal is the timeline and how companies can incorporate that into their resource plans.

Alternate Member Badeau asked what the differences are between the two heat maps. Mr. Hay said the differences are based on the drilling depth. The second map is more indicative of enhanced geothermal capacity.

Committee Member Watson said we have 15 years to get to zero emissions. Mr. Hay said that the state does not have a post 2030 emissions requirement or utility planning framework. Committee Member Watson asked if Mr. Hay has any insight into the requirement for reduced emissions by 2030. Mr. Hay said the energy office is in conversation with different utilities on the timeline and cost trajectories. All of the utilities currently have plans that will allow them to meet this requirement, but the Energy Office is in talks to reduce costs to the stakeholders.

The Committee took a break at 9:12 a.m. and returned at 9:24 a.m.

4. Geothermal Assignment Timeline

Ms. Bethany Schoemer, Strategic Planning and Governance Specialist Senior, reviewed the proposed geothermal assignment timeline. Ms. Schoemer asked if the Committee would like another presentation in October or if they would like to move on with a Working Session.

Alternate Member Carter suggested a presentation from the Colorado Energy and Carbon Management Commission. Chair Danner asked what type of information would be asked for with this presentation. Alternate Member Carter said permitting and regulations information. Ms. Schoemer will reach out to the Colorado Energy and Carbon Management Commission to see if they will present at a future meeting.

Committee Member Burghart asked for more information about the contact from California Power Association, and what they might cover. Ms. Schoemer said that she does not have specific information, but this recommendation came from the American Public Power Association. The contact from California would be in place of the proposed October 2025 presentation by the American Public Power Association. Committee Member Watson asked if the California presentation would be based on actual operational geothermal experience, which Ms. Schoemer said it would.

Ms. Schoemer asked if a second meeting, in mid-October would be beneficial as a working session. Committee Member Meyer said that the working session is needed separate from the regularly scheduled UPAC meeting.

Committee Member Watson asked if the assignment scope questions could be changed, and Ms. Danner said that since these questions were approved by the Utilities Board, they should be answered as they appear.

Vice Chair Borden asked if it would be possible to reach out to some major oil and gas companies to ask them what they are working on currently.

Chair Danner said that a discussion around the Federal Energy Regulatory Commission (FERC) Regional Transmission Organization (RTO) agreements and transmission and how they may affect geothermal may also be helpful.

Committee Member Smith asked if it would be possible to contact the governor's office for a recommendation on members of the legislature that are on the Natural Resources Committee to explain a bit of the philosophy, since they are drafting the legislative bills.

5. Customer Comment

There were no customer comments.

6. Committee Member General Discussion

Alternate Member Badeau said he is uninformed on transmission plans and how they integrate with state plans or larger reasons outside the state. He asked if there are planning resources available to help with this.

Committee Member Smith asked if a representative from the Governor's Office and State Administration could come in to provide background that was considered when determining mandates and what they are proposing for the upcoming state legislative session.

Committee Member Meyer asked if decisions are being made on something that may not be achievable, what is the state doing with the possibility of the deadline not being met. What will be done . . . fines, extensions, etc.?

Chair Danner said Alternate Member Carter's request is for geothermal specific. The other request is for a broader discussion, perhaps outside the scope of the assignment.

7. Adjournment

Chair Danner adjourned the meeting at 9:42 a.m. The next meeting will be on October 1, 2025.

Deep Geothermal Operations in Colorado: Technologies, Resources, Impacts, and Policies

CSU - Utilities Policy Advisory Committee

October 1, 2025



COLORADO

Energy & Carbon Management
Commission

Department of Natural Resources

7 of 49

Michael Rigby
Energy Transition Senior Scientist

Overview

- Background and timeline
- Geothermal uses and deep technologies
- Colorado geothermal resources
- Deep geothermal impact considerations
- Permitting and regulations
- Incentives and projects

ECMC: A legacy of protective regulation

- Colorado's regulatory authority over oil and gas wells since 1951
- Our mission: To regulate the development and production of oil and gas, deep geothermal resources, the capture and sequestration of carbon, and the underground storage of natural gas in a manner that protects public health, safety, welfare, the environment and wildlife resources.
- Our staff: Engineers, environmental scientists, geologists, environmental protections specialists, field inspectors, community relations professionals, financial staff, reclamation specialists, among others

Brief Geothermal Regulatory Timeline

- Prior to 2023, geothermal operations were treated similar to water wells or other water rights and regulated fully by the Water Courts & DWR
- Many different technologies have been developing across the geothermal industry with increased interest in deep energy generation

2023

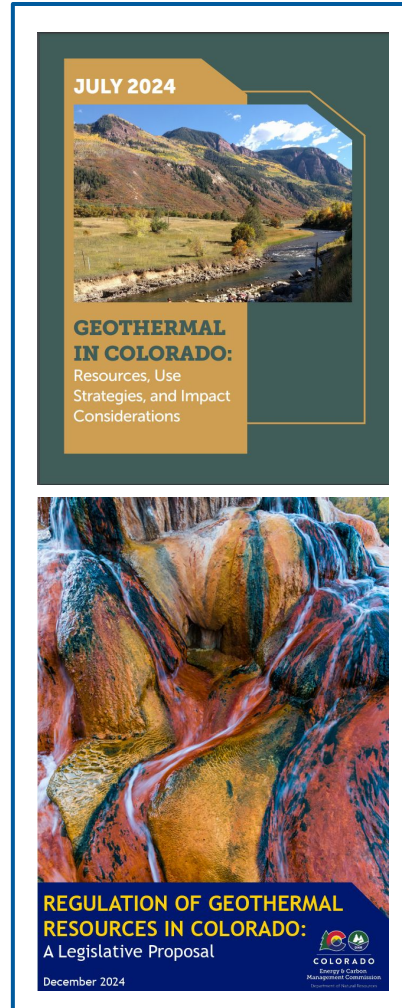
- SB 23-285
 - Grants ECMC authority over deep geothermal operations in CO
 - DWR retains authority over shallow operations and any use of water
 - Initiates two geothermal studies led by ECMC

2024

- Extensive stakeholdering to develop deep geothermal regulations
- July 1, 2024 - Geothermal Resource Study is released
- August 12, 2024 - Deep Geothermal Rulemaking - Rules adopted
- December 20, 2024 - Geothermal Regulatory Study is released

2025

- HB 25-1165
 - Includes additional provisions to protect prior geothermal operations from new development, among other items
- ECMC focused on regulatory program development
- DWR implementing permitting & notification requirements from HB25-1165
- DWR will begin stakeholding to amend Licensing & Geothermal Administrative Rules

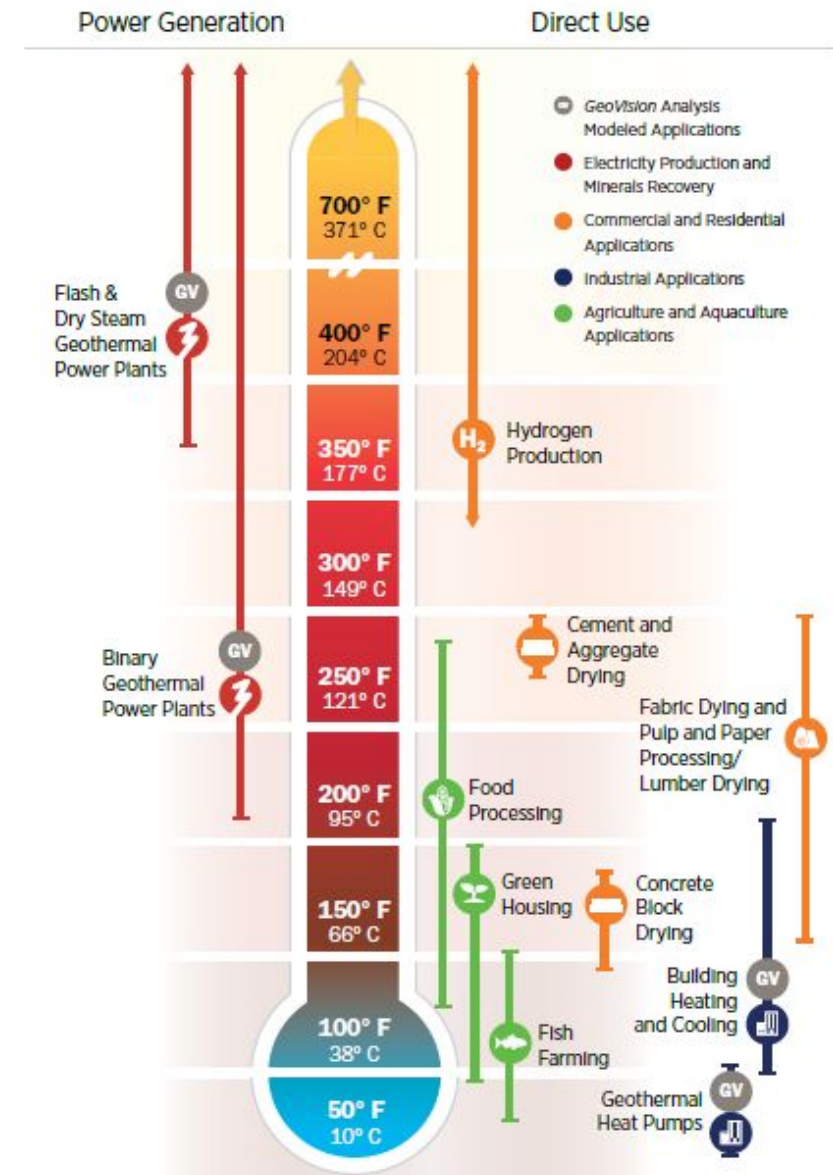




Geothermal Uses and Deep Technologies

Geothermal Uses

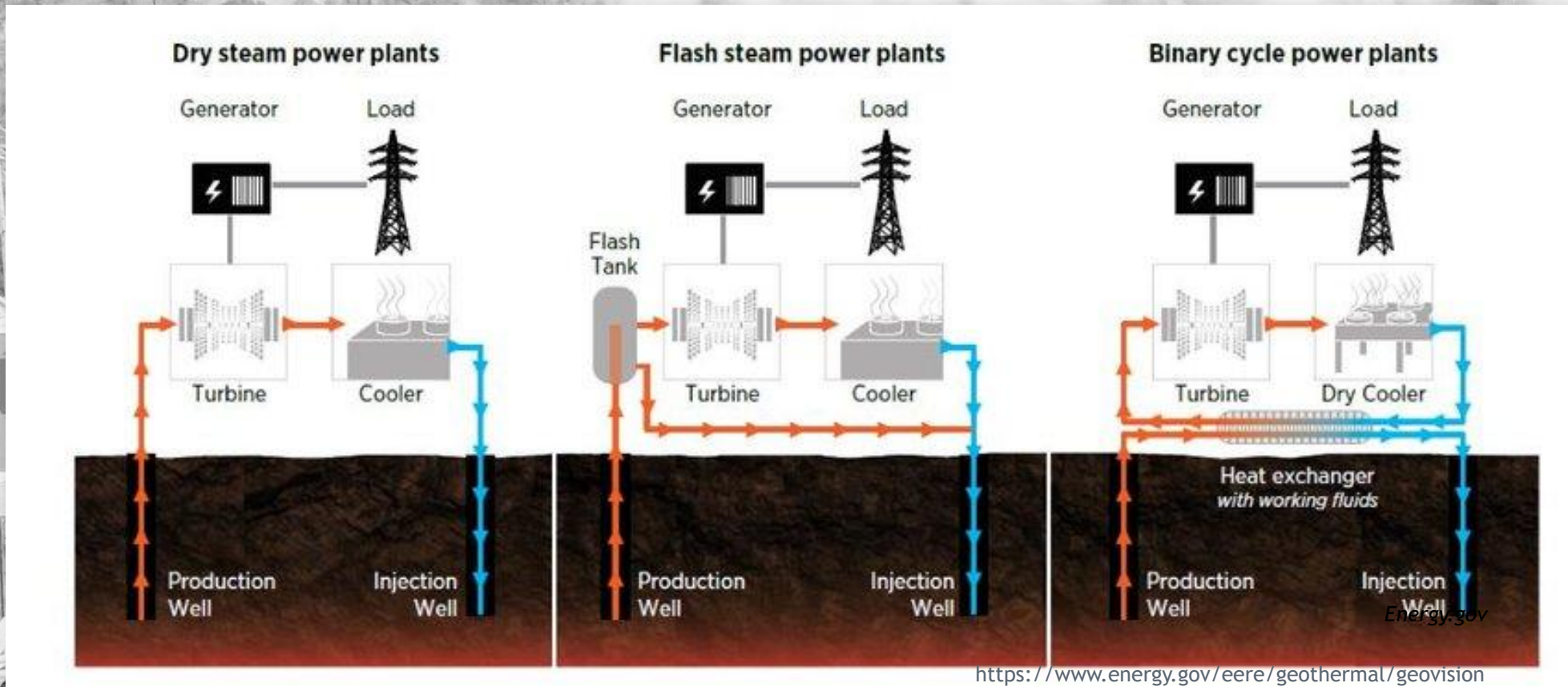
- Geo-exchange systems
 - Thermal Energy Networks
 - Heat pumps
- Direct Use
 - District Heating
 - Spas, snow melting, greenhouses, etc
- Electricity Generation
 - Binary-cycle
 - Flash/Dry Steam



<https://www.energy.gov/eere/geothermal/geovision>

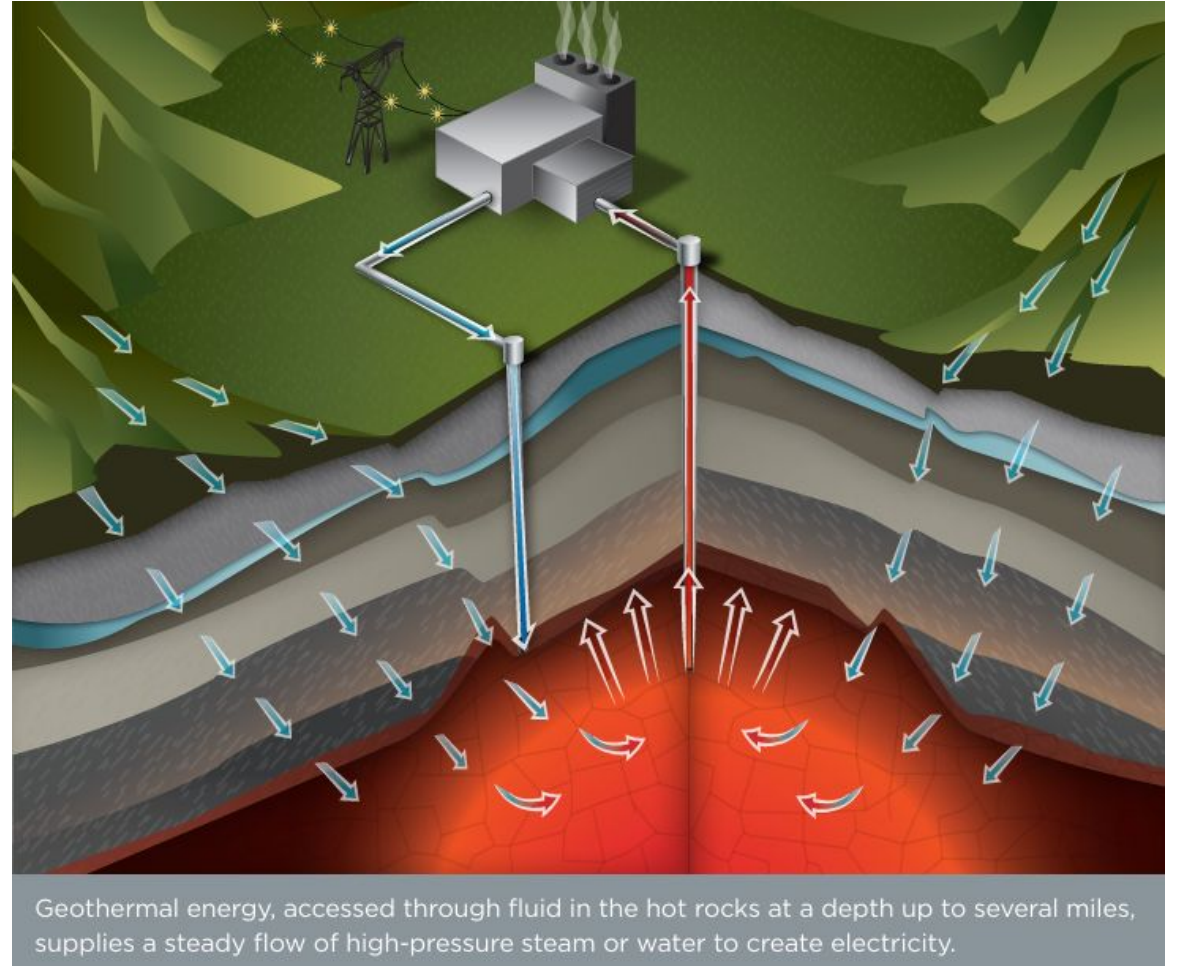
Electricity Generation

- Thermal energy is converted into electricity



Conventional Geothermal Systems

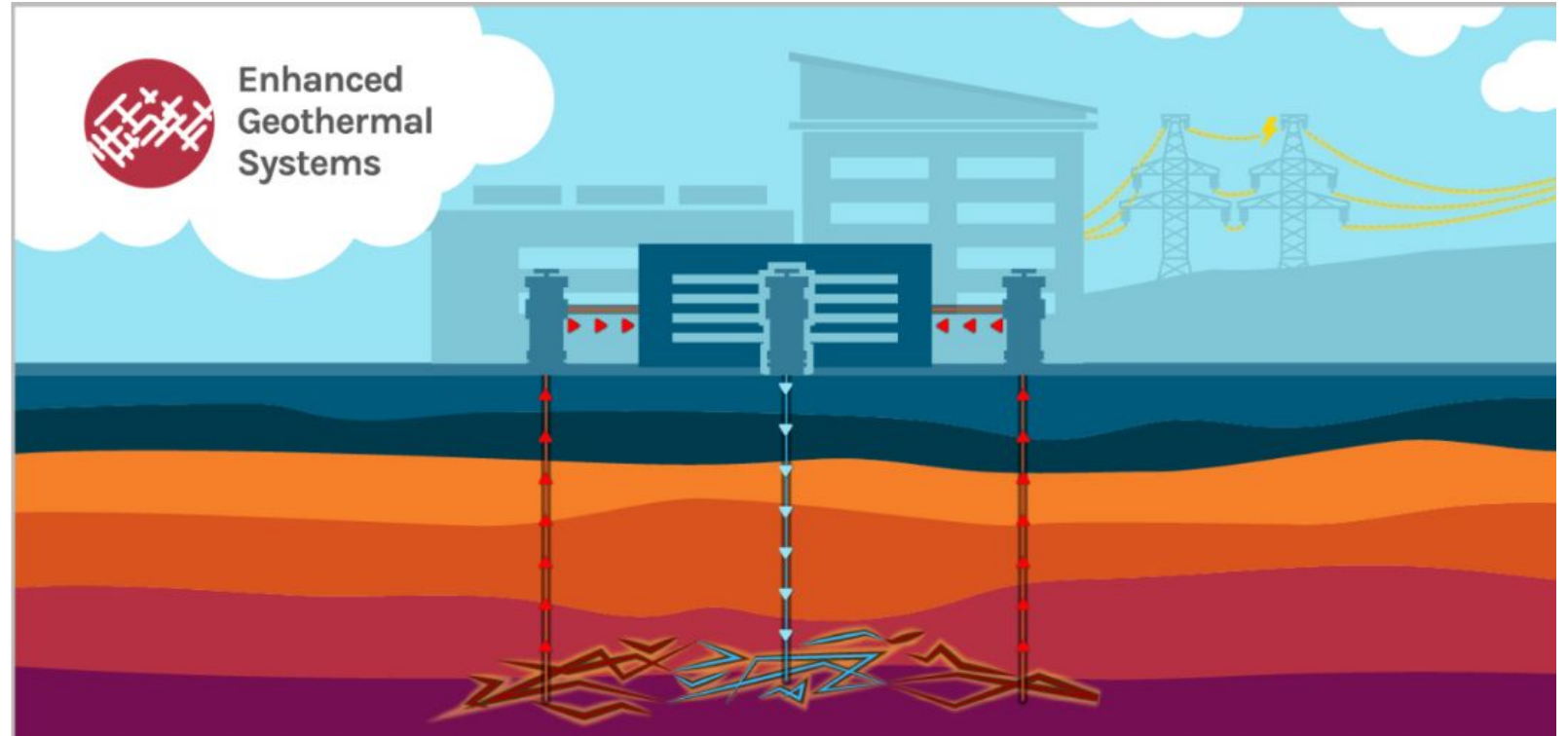
- Hydrothermal systems - considered conventional geothermal
- Uses existing technologies and does not require enhanced or human-made reservoirs
- Requires 3 main elements - heat, water, and permeability



<https://www.energy.gov/eere/geothermal/hydrothermal-resources>

Enhanced Geothermal Systems

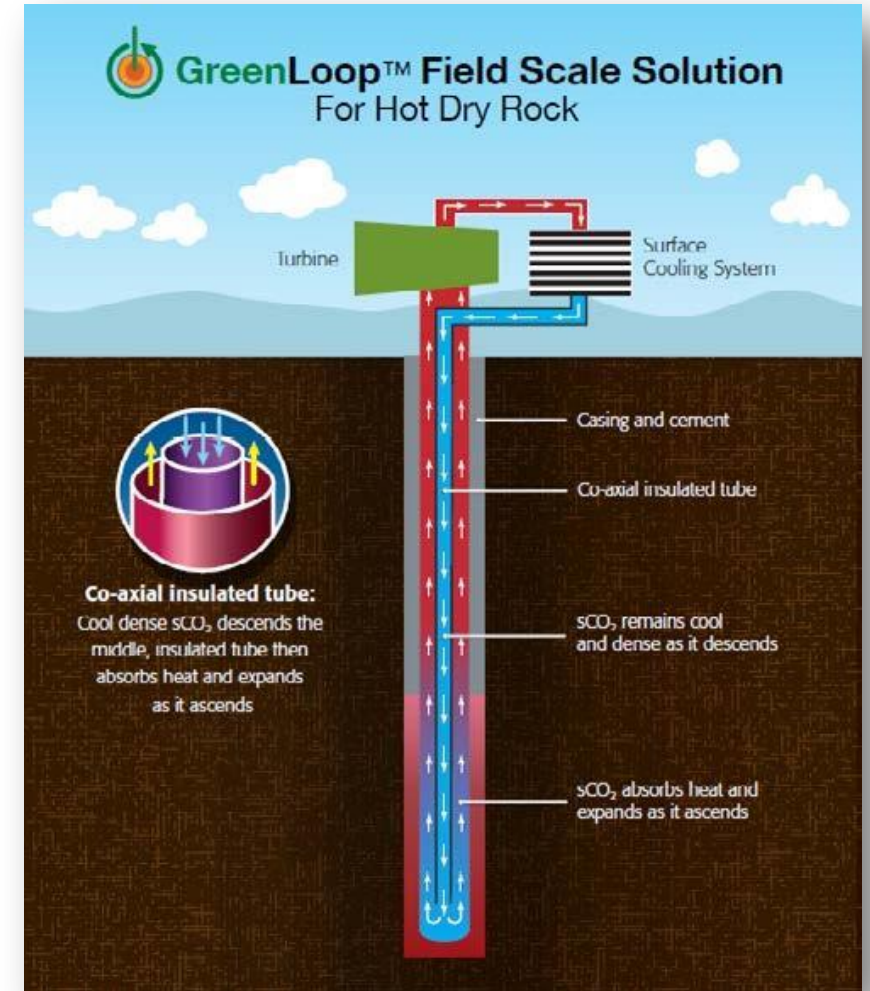
- Emerging technology
- Requires enhanced or human-made reservoirs
- Requires high subsurface temperatures, but human modifications supply water and/or rock permeability



<https://www.energy.gov/eere/geothermal/enhanced-geothermal-systems>

Advanced Geothermal Systems

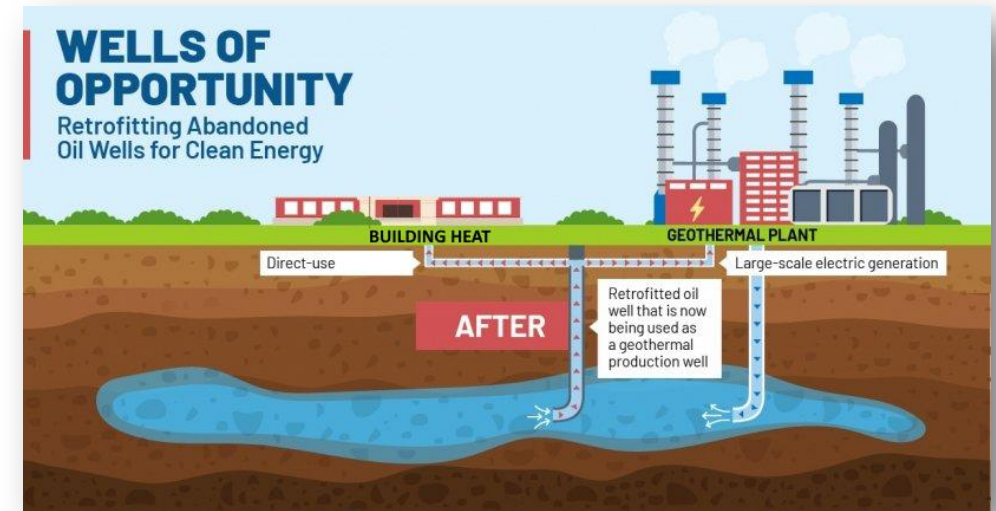
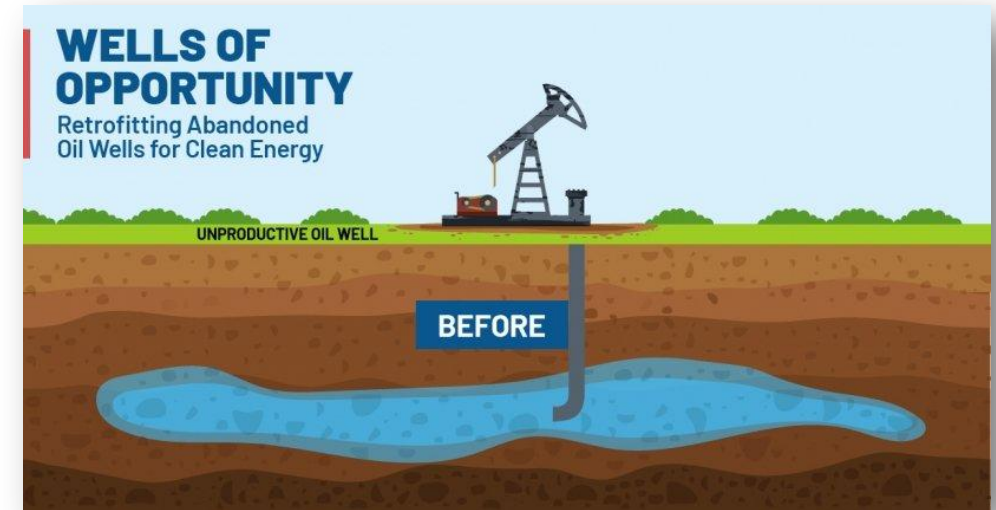
- Emerging technology: New strategies being investigated with future potential to be implemented in a variety of areas
- Systems that circulate fluid in a closed loop and do not exchange fluids with the subsurface
- Deep, long well bores with unique downhole construction
 - Can include several smaller wellbores (sidetracks) in the deep subsurface connected to a single wellbore that extends to the surface



<https://geothermal.org/our-impact/blog/new-opportunities-and-applications-closed-loop-geothermal-energy-systems>

Well Repurposing

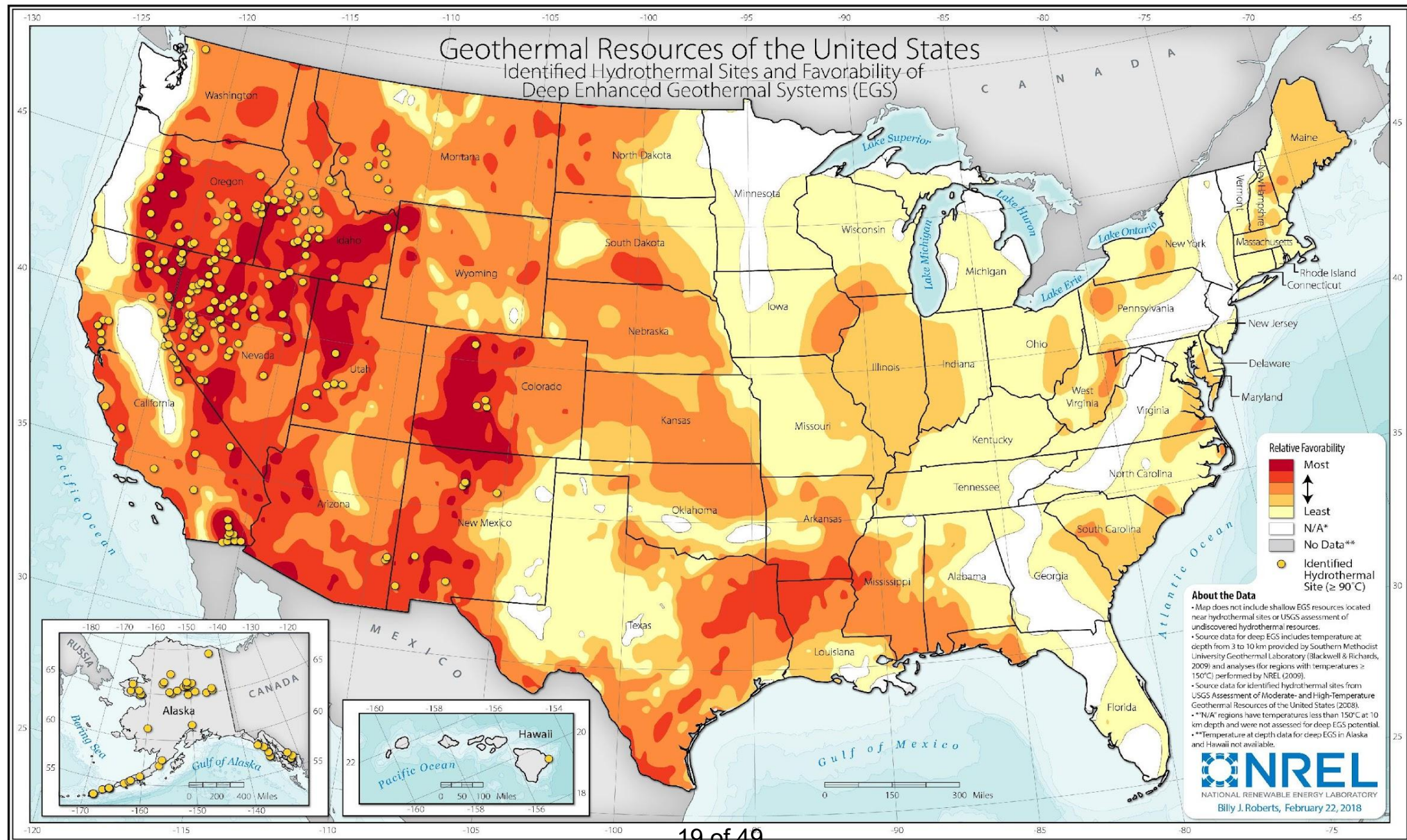
- Co-production - generating energy or directly using heat from existing oil and gas wells
 - Can reduce on site emissions and/or the heat can be utilized in close proximity to the producing well
- Conversion/Repurposing for direct use or local energy needs
 - This would convert the wellbore for use and no longer function as an oil and gas well
 - All wells considering conversion will need to be evaluated in the context of the new use strategy and wellbore integrity must be confirmed



<https://www.nrel.gov/news/detail/features/2023/full-steam-ahead-unearthing-the-power-of-geothermal>



Colorado Geothermal Resources



Geothermal Technical Resource Study

JULY 2024



GEOHERMAL IN COLORADO:

Resources, Use
Strategies, and Impact
Considerations

A collaboration between the ECMC, Colorado Geological Survey, and Teverra. The Geothermal Resource Study is a comprehensive review of Colorado's geothermal resources, use strategies, and impact considerations

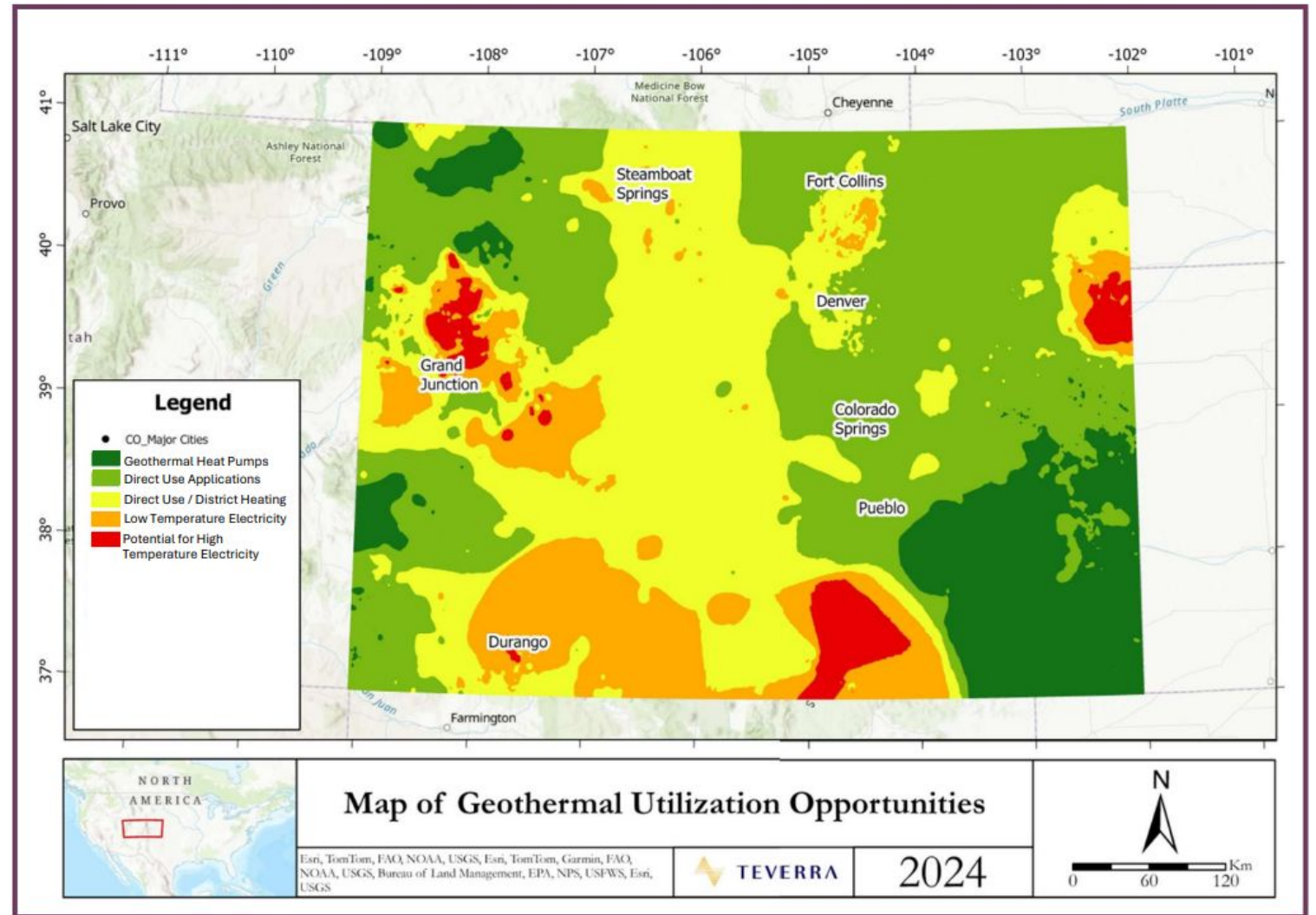
The information in this study provided valuable technical context as we established our regulations

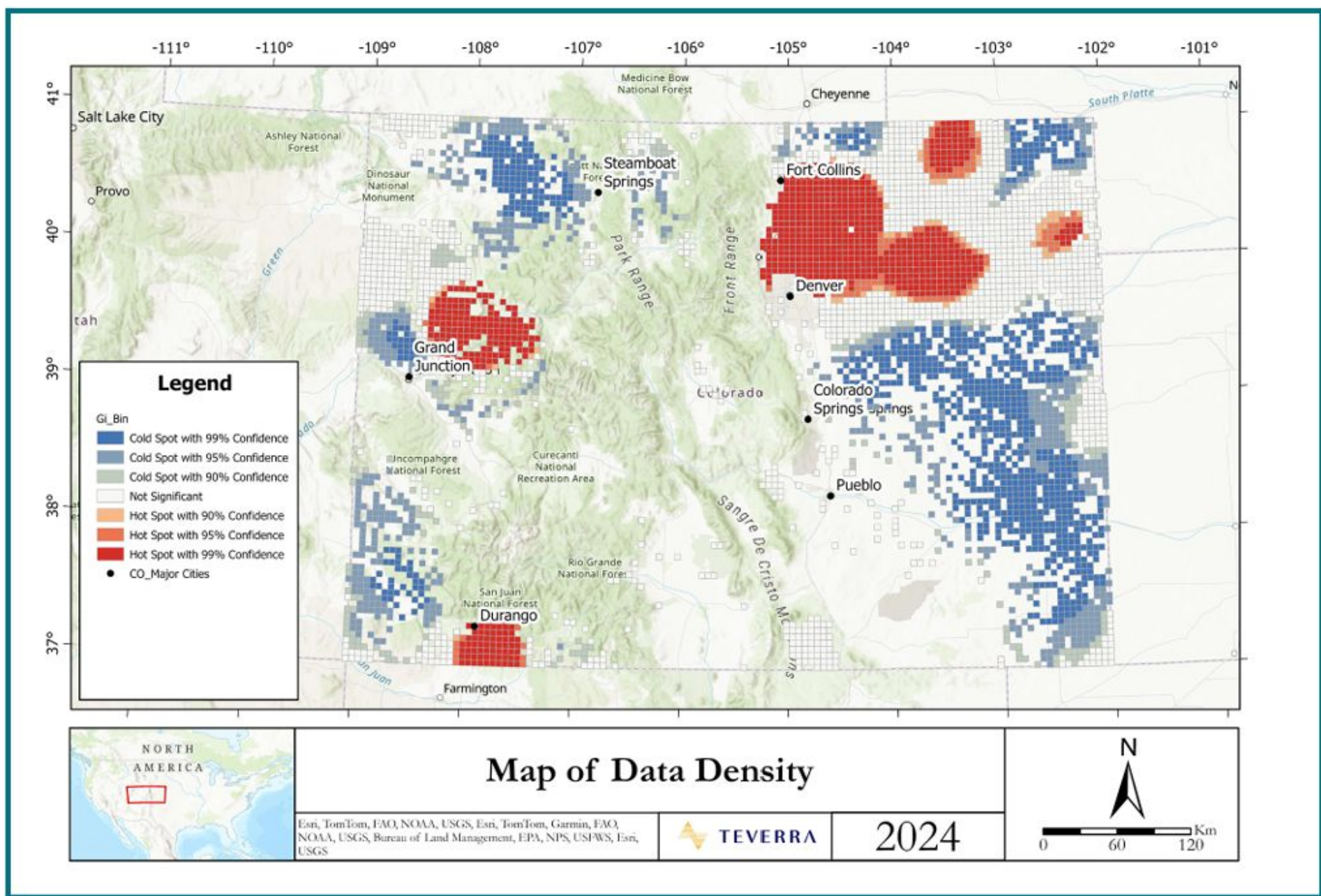
Topics covered in the study

- History of geothermal in Colorado, the geologic setting, and an introduction into current uses in the state
- Evaluation of the geothermal resources of Colorado including the analyses of existing well and temperature data and creation of several resource maps
- Applicable geothermal uses for Colorado and potential future applications based on resource mapping and technology developments
- Impacts and considerations for geothermal development including land use, water considerations, air impact considerations, and more
- Included the release of a large amount of data that was utilized in creating the content within the study

Colorado's Geothermal Potential: A Data-Driven View

- This map was compiled from over 63,000 corrected and normalized bottom-hole temperature readings from wells across Colorado
- Hotter colors indicate higher temperatures—a key indicator for potential geothermal use strategies
- This data de-risks exploration, informs state-level energy strategy, and provides potential operators information to build upon when evaluating projects





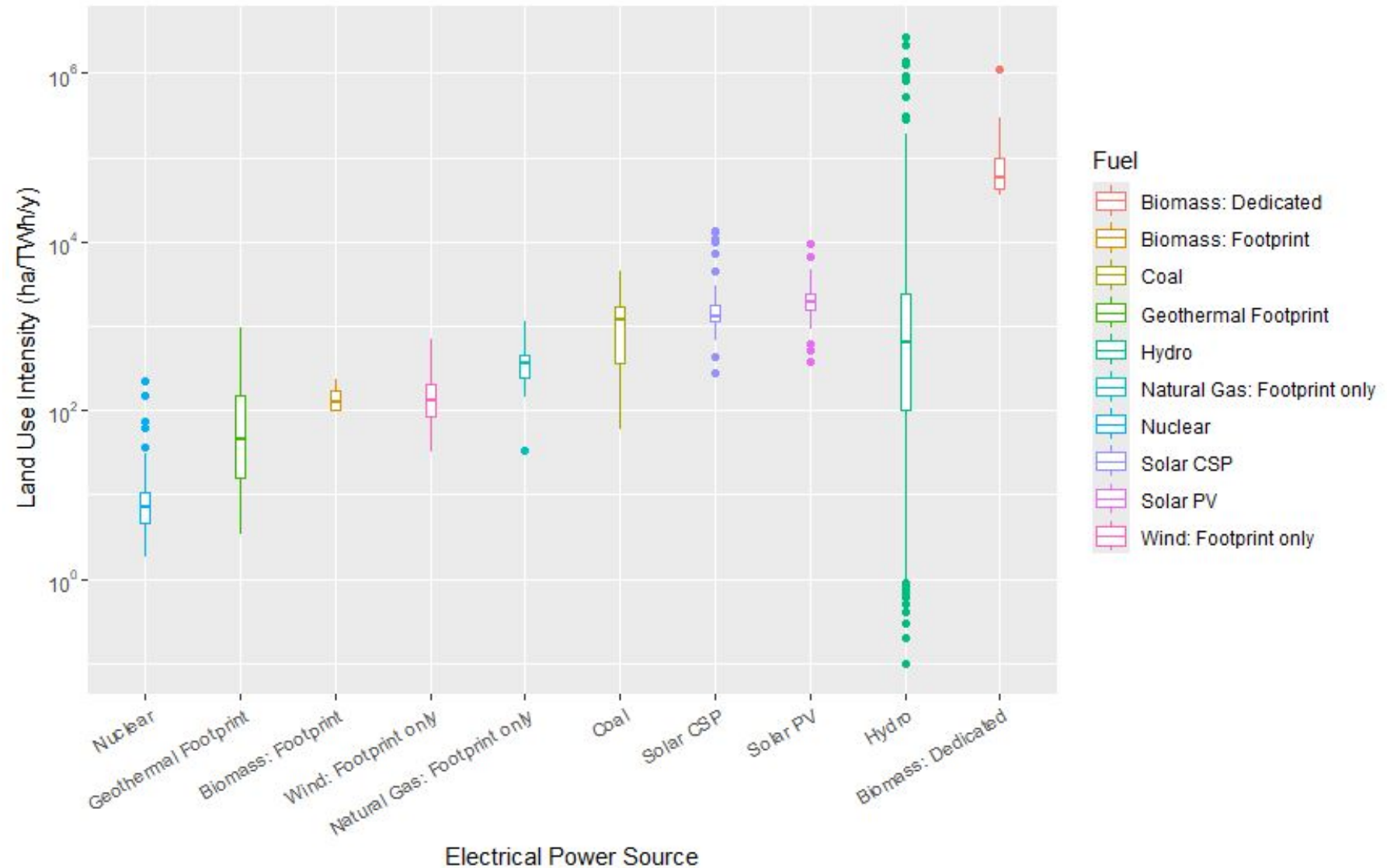
Geothermal Resource Study - Takeaways

- There are numerous opportunities for power potential based on the assessment.
 - Further investigation is imperative to ascertain the overall geothermal resource potential, as well as the total heat or energy demand, in order to devise an optimal utilization strategies.
- Colorado should consider conducting or supporting further detailed studies on the localized areas with the greatest potential for high temperature geothermal power production
- Well repurposing for geothermal power production or for direct use is an option with immediate deployment potential
- Throughout the state, there are geothermal opportunities that require minimal investment, on the order of \$5-10 MM, to sufficiently drill and test a probable geothermal resource
- Multiple use strategies such as cascading use systems, combined heat and power, or hybrid systems that combine multiple applications of geothermal and other technologies can bring additional value to Colorado.
- The geothermal resources of Colorado have potential for multiple use strategies that can provide tangible benefits to local communities and the state by reducing greenhouse gas emissions through clean, firm electricity generation and renewable heating and cooling.

Deep Geothermal Impact Considerations

Land Use

Geothermal compares favorably with other energy sources in terms of land use intensity



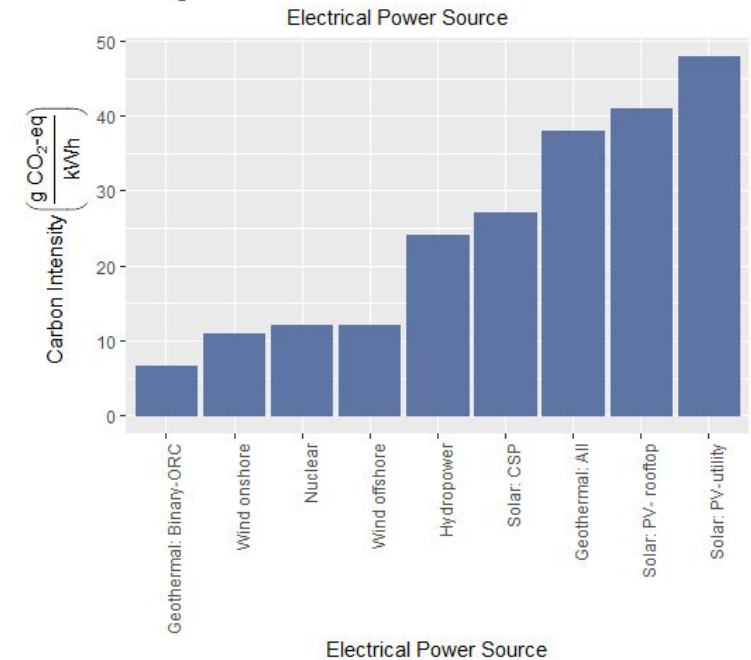
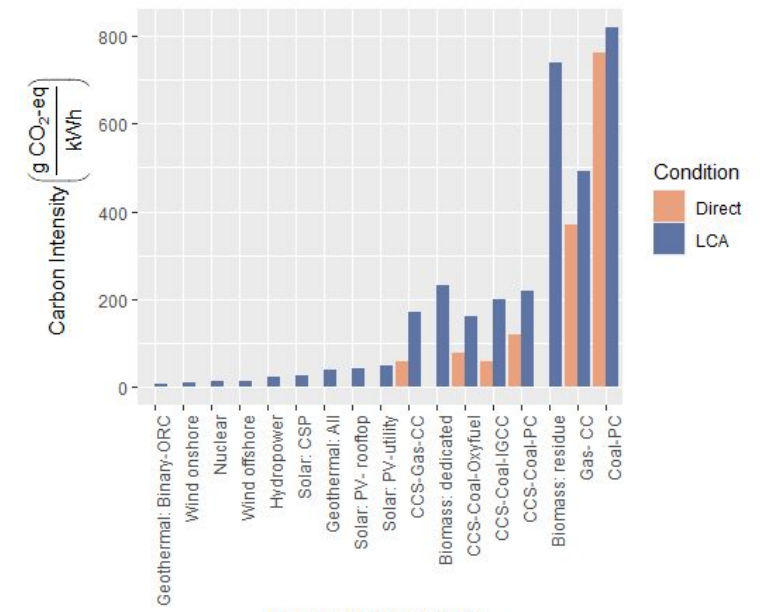
Water Considerations

- Water use is small compared to other uses of water
- Existing wellbore construction standards and mitigation strategies are effective in protecting groundwater resources
- Our collaborative approach with DWR ensures that the use of water resources are protected across all project types
- Many studies have found that impacts to freshwater and to surface systems are minimized by complete reinjection of geothermal fluids, which is the case for nearly all binary plants

Activity	Water Use (Acre-feet)
Drilling: 50 MW of geothermal (Estimate, One-time, EGS-binary)	103
Thermoelectric power (Coal, NG, Nuclear), annual	3,400
Oil and gas Development, annual	32,285
Colorado agricultural irrigation, annual	10,100,000
Colorado's total water use, annual	11,600,000

Air Emissions

- Air emissions for geothermal are essentially exclusive to the drilling and stimulation phase
- Over the long-term for all projects: direct use, geoexchange systems, and electricity production, emissions are reduced (GHGs, NO_x , SO_2 , VOCs, PM_{10}) compared with fossil fuels
- Binary geothermal (applicable in CO) has the lowest carbon intensity of any source of electricity



Induced Seismicity

- Generally, geologic environments in Colorado are at a lower risk for induced seismicity than would be found in the high-temperature systems where geothermal development has historically been concentrated.
- Even in the relatively low-risk settings found in Colorado, it is still recommended to mitigate risk based on project specific considerations
 - ECMC regulations include considerations for induced seismicity
- Multiple strategies can reduce risk
 - Reviewing and understanding faults in the region
 - Monitoring seismicity before and during operations
 - Balancing fluid production and injection - in the case of binary systems, all produced fluid is reinjected

Impact Summary

- Geothermal power operations excel at minimizing land use, water use and air pollutants
- The impacts of binary-cycle power plants are largely concentrated to the pre-production phase including drilling and completion operations
- Careful planning, permitting, and mitigation measures should be implemented to ensure that all operations are safe and protective of Colorado's communities and extraordinary outdoor environment
- Cascading uses and repurposing existing infrastructure can further reduce overall impacts of geothermal operations
- For more information on impacts, review chapter 7 or our [Geothermal Resource Study](#)

Colorado Regulatory Strategies



Technologies and Impacted Resources

Technologies and impacted resources are highly variable

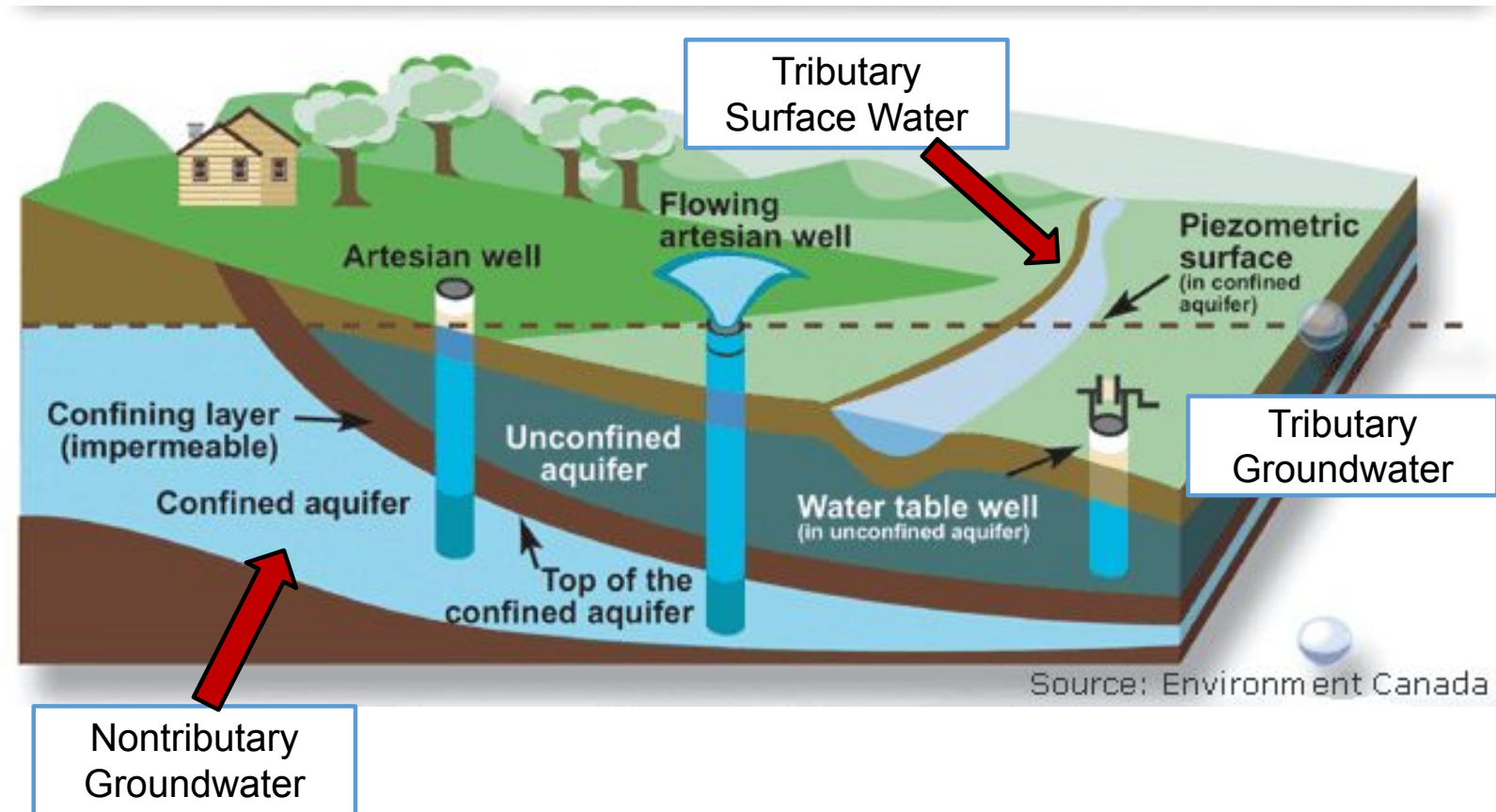
- Different from other operations (i.e., oil, natural gas) as the primary target (heat) is a characteristic versus a tangible substance
- Extraction can still impact other operations and property
- Geothermal resources in Colorado are:
 - A public resource when associated with tributary groundwater
 - A property right of the surface owner when associated with nontributary groundwater or hot dry rock
- Federally, geothermal resources are considered a mineral
- Many operations use groundwater or move groundwater, but several do not

Colorado Regulatory Strategies

- Leverage existing state agency expertise
 - DWR regulates water rights/uses and shallow geothermal operations
 - ECMC regulates deep geothermal operations and use of private resources
- Leverage existing water use and rights structure
 - tributary/nontributary
- Technologies and expertise as a driver for regulatory structure to ensure proper protections for all types of development, variable resources, and communities

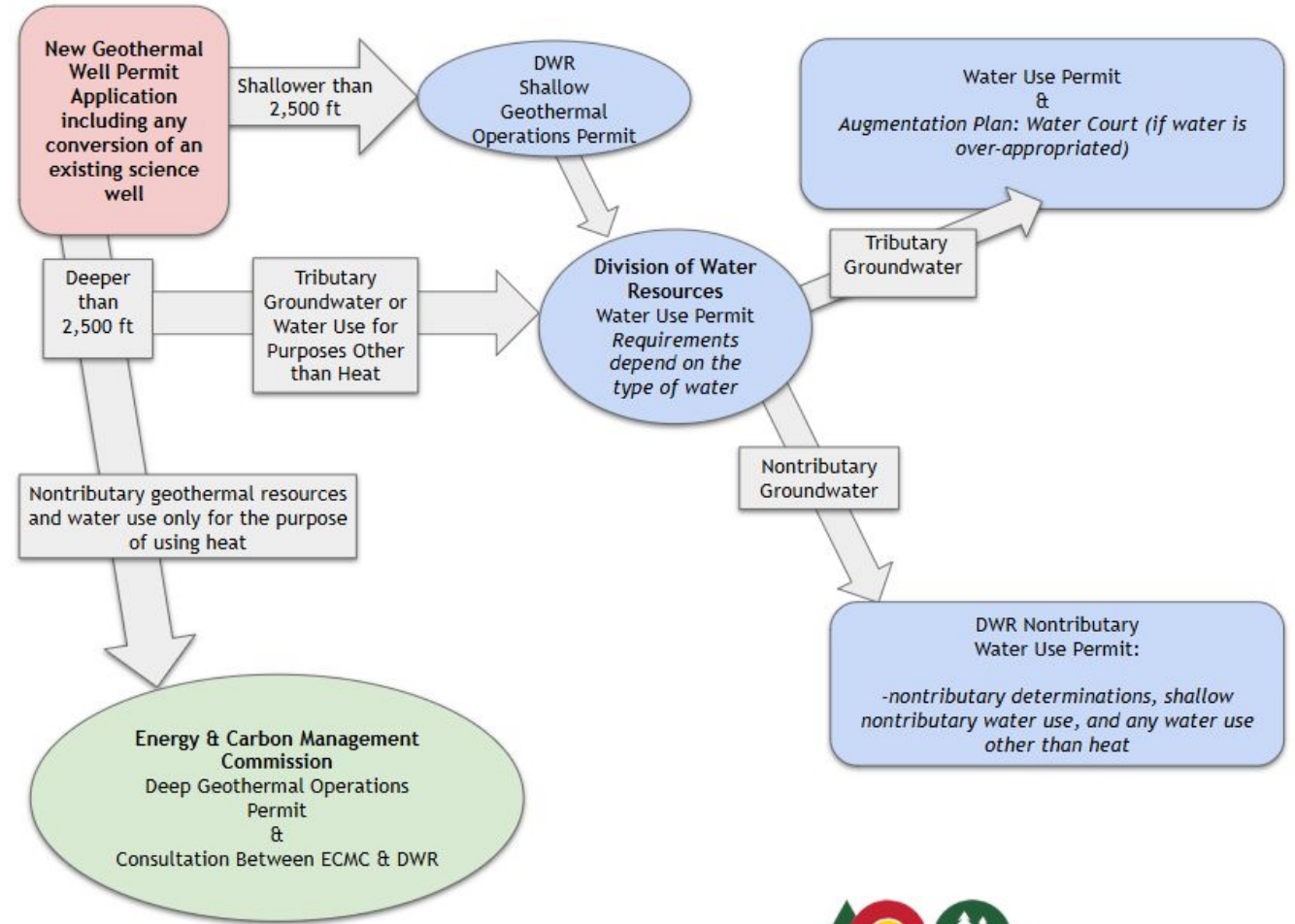
Tributary vs Nontributary

- Tributary waters are any water connected to surface streams
- Nontributary waters are confined groundwater that **when pumped would not impact surface streams**
- Very simplistic summary - unconfined vs confined groundwater
- All groundwater is assumed tributary unless proven otherwise



State Geothermal Regulation in Colorado

- Geothermal Operations permitting:
 - A simple depth metric
 - 2500'
- Use of the geothermal resource based upon the type of water (if any)
 - Tributary - DWR
 - Nontributary for extraction of heat only - ECMC
 - Deep, hot dry rock - ECMC



ECMC's Deep Geothermal Regulations

- A single rules series ([1300 Series](#)) was developed to delineate deep geothermal operation requirements
- The Rules address numerous topics spanning the entire lifecycle of a project including permitting, operations, and project abandonment
- Geothermal Resource Units - similar concept to oil/gas units but only applicable to deep geothermal operations using nontributary or hot dry rock resources
 - Created alongside the permit or after permit approval
 - Establishes a unit comprising a formation(s) across a permitted project area and represents the resources utilized by the project
 - Designates the geothermal resources to the permitted project and ensures equitable compensation to all impacted owners

ECMC Deep Geothermal Consultation

- Deep geothermal operations permits require consultation with a variety of potentially impacted agencies
 - Required pre application meeting to bring together potentially impacted agencies prior to application submission
 - Consultation with CDPHE, CPW, public water systems, SLB, DWR, EPA, the local government, tribal governments, and the BLM
- DWR Consultation
 - Tributary/Nontributary status and determinations
 - existing geothermal operations and associated notifications
 - aquifers and existing water wells
 - water rights, including historic hot springs

Local Government Involvement

- Local governments may develop regulations for the surface impacts of deep geothermal operations
- ECMC permitting process requires consultation with the relevant local government

§37-90.5-106, C.R.S.

- Commission cannot issue an operations permit unless the applicant has filed an application with the appropriate local jurisdiction to approve siting, or documentation that the local jurisdiction does not regulate deep geothermal
- Upon request, commission to provide technical support to local governments re: implementation of ECMC rules

Geothermal Incentives and Policies



IRA - Fed Geo Investment Tax Credit

Residential

- 30% | 2022-2025



Montclair State University
montclair.edu/clean-energy-sustainability-analytics/resources/clean-energy-information/geothermal-energy/

Investment Tax Credit (Commercial):

- 6% | Base Rate
- 30% | 5x Bonus Rate (6% base x 5)
 - Projects under 1 MW (approx. 284 tons) qualify
 - Projects over 1 MW (approx. 284 tons) must meet prevailing wage and apprenticeship requirements
- 10% | Domestic content bonus
 - US production of steel/iron; % requirements of components
- 10% | Energy Community
 - Brownfield redevelopment, fossil-fuel focused economy, census tract tied to retiring coal communities

Colorado Incentives and Policies

In recent years, Colorado has passed several critical bills to help kick-start the geothermal energy market including:

- **HB 19-1261 and SB 23-016:** establish Statewide GHG pollution reduction targets, including net-zero emissions economy-wide by 2050.
- **SB 21-264:** sets GHG emission reduction targets for gas utilities and requires investor-owned gas utilities to file five-year Clean Heat Plans with the PUC beginning in 2023.
- **HB 22-1381:** establishes the CEO Geothermal Energy Grant Program with \$12 million in funding.
- **HB 23-1272:** establishes tax credits for ground source heat pumps and thermal energy networks.
- **HB 23-1252:** permits gas utilities to offer TEN service as a heating source to their customers instead of gas and sets requirements for Public Service Company of Colorado (“Public Service”) to propose TEN pilot programs, among other topics.
- **HB 24-1370:** creates a process for up to five pilot communities to partner with Public Service on neighborhood scale electrification or thermal energy networks as Gas Pilot Planning Communities.

HB23-1272: State Geothermal Tax Credits

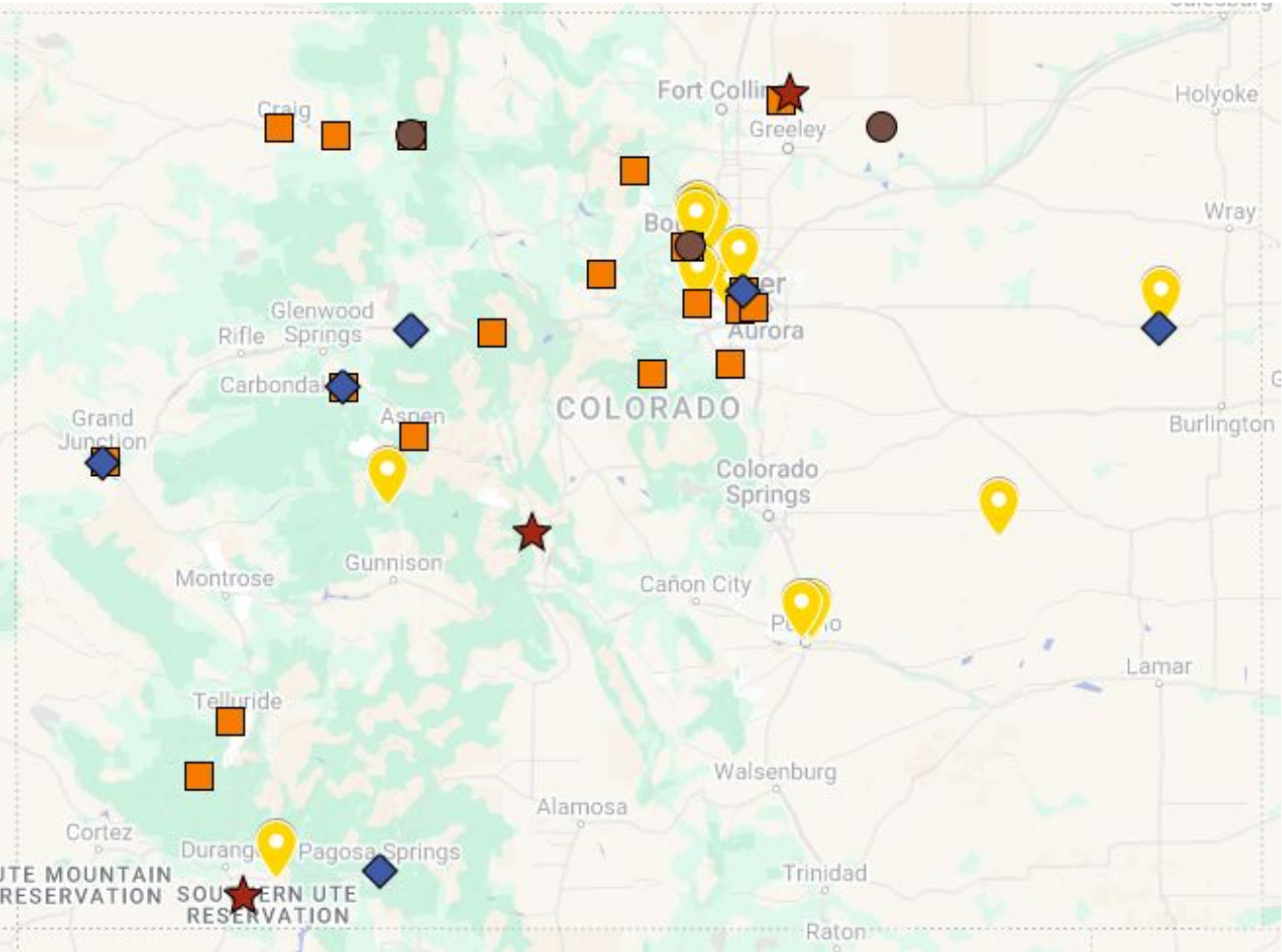
Geothermal Energy	2024 - 2033
Geothermal Electricity (Investment Tax Credit)	30% - 50% ITC, merit-based \$5 million cap per project
Thermal Energy Network (Investment Tax Credit)	30% - 50% ITC, merit-based \$5 million cap per project / study
Production Tax Credit	\$0.02/kWh

Heat Pump Technology (per residential unit)	2024 - 2025	2026 - 2029	2029 - 2033
Air-Source	\$1,500	\$1,000	\$500
Ground-Source, Water-Source, or combination system including either	\$3,000	\$2,000	\$1,000
Heat Pump Water Heater	\$500	-	-

The nonresidential building rate is the tax credit multiplied by the number of increments of 4 tons.

Thermal energy networks may combine the credit per connected residential unit and nonresidential building.

Projects Utilizing Colorado's Geothermal Incentives



\$12 million in grants and \$35 million in tax credits to support the use of zero-emission, geothermal energy for electricity generation and space/water heating and cooling in homes, businesses, and communities.



Single-Structure Geothermal Installation



Thermal Energy Network Study



Thermal Energy Network Installation



Geothermal Electricity Award

As of June 2025, \$23.8 million has been awarded across 60 Colorado geothermal projects!

In Summary

- The state has been working to establish safe, effective, and incentivized pathways for geothermal development
- Colorado has geothermal resources applicable to a variety of technologies and uses, including electricity generation
- Pilot projects and additional studies are important to get more movement in the industry and to define the resource potential across the state
- Geothermal operations are generally less impactful than other energy operations and can provide tangible benefits to impacted communities
- A comprehensive regulatory program has been established across the ECMC and DWR, leveraging state agency expertise and providing protections across highly variable technologies and resources
- There are federal and state incentive opportunities currently available for both exploratory and commercial projects. For questions on state incentives and policies including tax credits and grant programs, please reach out to the energy office - bryce.carter@state.co.us
- Colorado Geothermal Council is forming and will likely include discussions and work related to utilities and strategies for geothermal deployment

Questions?

Email - michael.rigby@state.co.us

Visit our website:

ecmc.state.co.us



COLORADO

Energy & Carbon Management
Commission

Department of Natural Resources



Colorado Springs Utilities
It's how we're all connected

Geothermal Assignment Timeline

October 1, 2025

Geothermal Energy Assignment Scope

1. Is geothermal energy a feasible source of energy in Colorado and for Colorado Springs Utilities? What should Springs Utilities be doing to prepare for geothermal generation in the future?
2. What is the state of the technology? And what are the associated project risks?
3. What is the cost range for different options? Should cost be seen as prohibitive?
4. What are the environmental pros and cons?
5. Are the water constraints in Colorado a prohibitive factor?
6. What is the regulatory/legal environment in Colorado and nationally?

Geothermal Energy Assignment Scope

7. Are there federal grants, private investment opportunities or other funding that Springs Utilities should investigate?
8. What is the permitting environment? Are there any that have been permitted in CO? Are there public land considerations? What is the build out timeframe?
9. What is being done domestically and internationally in areas with similar water limitations and climate and altitude are found?
10. What are the opportunities for partnerships and collaboration?
11. What is recommended for the frequency of UPAC re-examining this topic, including for the EIRP?
12. Based on this assignments' findings, what if any are areas needing further evaluation by UPAC?

Draft Timeline

- **July 2025:** Assignment approved by Utilities Board
- **August 2025:** Mt. Princeton Geothermal, LLC
- **September 2025:** Colorado Energy Office
- **October 2025:** Working session and Energy Carbon Management Commission
- **November 2025:** TBD
- **December 2025:** Regional Transmission Organization overview
- **January 2026:** Begin wrapping up recommendation



Colorado Springs Utilities

It's how we're all connected