

Utilities Policy Advisory Committee (UPAC)

Wednesday, November 5, 2025

8:00 a.m. – 10:00 a.m.

Rosemont Conference Room

121 S. Tejon Plaza of the Rockies or Microsoft Teams

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8:00 a.m.	1.	Call to Order	
8:02 a.m.	2.	Approval of October 1, 2025 UPAC Meeting Minutes	Decision
8:05 a.m.	3.	Geothermal Energy Recommendation	Discussion
9:40 a.m.	4.	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 BoardSubmissions@csu.org prior to the meeting.	Discussion
9:45 a.m.	5.	Committee Member General Discussion	
10:00 a.m.	6.	Adjournment	

Next meeting: December 3, 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.

Utilities Policy Advisory Committee (UPAC)

Minutes

Wednesday, October 1, 2025

8:00 a.m. – 9:15 a.m.

Rosemont Conference Room

121 S. Tejon Plaza of the Rockies or Microsoft Teams

8:00 a.m.

1. Call to Order

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

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 (online)

8:10 a.m.

2. Geothermal Discussion

Ms. Danner explained the objective of this session is to begin drafting a recommendation for the Utilities Board.

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?

Vice Chair Borden asked if geothermal will move the needle of the energy horizon in Colorado Springs Utilities, and Committee Member Barrett agreed with this question. Committee Member Barrett has concerns about the depth and scale of geothermal, and how transactional it is. Committee Member Barret also said that the presentations to date do not demonstrate that other organizations are pursuing this option.

Alternate Member Carter asked what the definition of feasible is in this context. Committee Member Meyer said that the answer is yes. But he said that this transaction is not with the budgetary constraints. Chair Danner said that it is feasible technologically, but it may not be reasonable for Colorado Springs Utilities economically.

Chair Danner said that the relationship between Xcel Energy and others may be more advantageous in partnerships.

Committee Member Smith said that transmission would be a constraint for geothermal.

Chair Danner said that the deeper well plays a role in how many megawatts can be produced.

2. What is the state of the technology? And what are the associated project risks?

Vice Chair Borden said that on a broad scale, the technology remains scientific rather than commercialized.

Committee Member Meyer said that the prior presentation indicated one risk is that exploratory drills need to be done, so it is not that well developed and very localized. Vice Chair Borden said that there is also a lot of linear risk. Committee Member Smith said that there are a lot of risks, without a lot of payoff.

Chair Danner said that the risks are minimal, once operational.

Committee Member Barrett said that the presentation indicated that the financing could come from tax credits and incentives, though these remain uncertain. The presentation also showed other risks.

Committee Member Burghart said that previous presentation said the cost is \$47 million for a 10-megawatt (mw) plant. These costs do not cover permitting costs.

3. What is the cost range for different options? Should cost be seen as prohibitive?

Committee Member Barrett said that the costs given by the different presenters are vastly different.

Committee Member Meyer said that “based on the assignment given” versus “based upon the presentations received,” there is a wide range of cost.

Vice Chair Borden said that costs should be broken down into construction costs and operational costs.

Committee Member Burghart said that it would be beneficial to include the cost per megawatt.

4. What are the environmental pros and cons?

Committee Member Burghart said that due to limited information about water requirements, there is uncertainty about whether deeper drilling would yield more power. Committee Member Barrett said that from an environmental point of view, there are pros associated with it. The cons are seismic risks.

Committee Member Barrett asked how large the drilling hole is. Chair Danner said this is 4 to 6 inches in diameter. The small footprint is a benefit, but that is assuming you can get it to where you want to go.

Vice Chair Borden said that the drilling could be akin to oil and gas drilling. Chair Danner said this is minus the fracking. Committee Member Barrett said the environmental impact is positive once it is built.

Committee Member Smith said this is probably the most publicly accepted when compared to other resources. Chair Danner said there was a lot of community resistance to the Mt. Princeton project.

Vice Chair Borden said that there will always be community pushback, even though it may be beneficial to the community.

Cons include general drilling risks, Vice Chair Borden said.

5. Are the water constraints in Colorado a prohibitive factor?

Chair Danner said this is a closed loop system, so it is not a prohibitive factor. More information may be required.

Committee Member Barrett said a geothermal project could replace other fossil resources.

Committee Member Smith said that secondary water could be used.

6. What is the regulatory/legal environment in Colorado and nationally?

Alternate Committee Member Badeau said that a previous presentation said that there are 3 or 4 agencies that need to be involved.

Chair Danner said that the regulatory/legal environment is not as clearly defined as the previous nuclear project – since the technology is not used in the state and legal hurdles may need to be addressed as they occur.

Vice Chair Borden asked if there was an agency tied to mining, especially if the plant is in the mountains.

7. Are there federal grants, private investment opportunities or other funding that Springs Utilities should investigate?

Committee Member Burghart said there is a federal geothermal tax credit, but the amount and feasibility is unknown

Vice Chair Borden suggested listing off the grants and the requirements for each.

Committee Member Meyer said there are federal and state agencies that offer grants and these could be listed. He said there are also private grants and investment opportunities.

Committee Member Barrett said that the federal government may limit who these credits are available to.

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 time limit? Vice Chair Borden said the build out timeframe is within normal construction timelines. However, the permitting timeframe could take some time.

Committee Member Meyer said that National Environmental Policy Act (NEPA) is involved if the plant is on federal land.

9. What is being done domestically and internationally in areas with similar water limitations and climate and altitude are found? Committee Member Smith asked if the questions could be reordered into themes – general, regulatory, environmental, finance and recommendations – since many of these questions “overlap.”

10. What are the opportunities for partnerships and collaboration? Vice Chair Borden said that organizations can collaborate with neighboring utilities.

Committee Member Barrett asked if the military would be a potential partner.

11. What is recommended for the frequency of UPAC re-examining this topic, including for the EIRP?

Chair Danner said that initially the recommendation was 3 to 5 years and asked if this needed to be changed.

Vice Chair Borden said if there is a larger or more commercially significant build, that would trigger a more frequent and earlier look.

Committee Member Barrett said the EIRP is a 3-to-5-year process.

Committee Member Watson said the group that previously presented said that the timeline was 2 to 4 years before drilling could begin.

12. Based on this assignment’s findings, what, if any, are areas needing further evaluation by UPAC?

Vice Chair Borden asked if this is constrained to geothermal, but other broad resources could be considered.

The Committee was not prepared to answer this question at this time.

9:15 a.m.

3. Adjournment

Chair Danner adjourned the working session at 9:15 a.m., and invited Committee Members to the Blue River Board Room where the regular UPAC meeting would occur. The next meeting will be on Nov. 5, 2025.

Utilities Policy Advisory Committee (UPAC)

Minutes

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

9:20 a.m.

1. Call to Order

Chair Katherine Danner called the meeting to order at 9:22 a.m.

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

9:25 a.m.

2. Approval of September 3, 2025 UPAC Meeting Minutes

Committee Member Watson made a motion to approve the meeting minutes, and Committee Vice Chair Borden seconded the motion. The minutes passed unanimously.

9:30 a.m.

3. Energy and Carbon Management Commission

Mr. Michael Rigby, Energy Transition Senior Scientist; and Ms. Julie Murphy, Director with the Colorado Energy & Carbon Management Commission, gave a presentation on Deep Geothermal Operations in Colorado: Technologies, Resources, Impacts, and Policies.

Committee Member Smith asked what the cooler system is used for in the dry steam power plants, the flash steam power plants, and the binary cycle power plants. Mr. Rigby said that the fluid, before being returned to the ground, needs to be cooled down further before being re-injected into the ground for efficiency.

Alternate Committee Member Badeau asked the difference between dry steam and flash steam. Mr. Rigby said that dry steam is all steam, but flash steam consists of some liquid as well as steam.

Committee Member Watson asked where the Mt. Princeton project is in the process, and Mr. Rigby said that it is currently not in their organization's process. Mr. Rigby said the system they are proposing is more of a conventional system.

Chair Danner asked how the well sizes compare for the advanced geothermal versus the enhanced geothermal. Mr. Rigby said geothermal well bores are generally wider in diameter than oil and gas wells, being at a minimum of 9 inches wide.

Chair Danner asked what the typical megawatt output of an advanced geothermal system is. Mr. Rigby said that it is project specific and geothermal is an emerging technology, so these numbers will vary based on the scale of the project. However, a single bore would be in the 3 MW range.

Committee Member Meyer asked if Mr. Rigby was aware of any companies that are currently looking at co-production in Colorado. Mr. Rigby said that companies are currently looking at this and doing pilot studies. Committee Member Meyer asked if it is more difficult on a large scale. Mr. Rigby said that in the long run there is potential, if multiple different well bores are tied together, but maybe not yet.

Committee Vice Chair Borden asked if there were oil and gas companies looking at geothermal more broadly as a diversification of their portfolio. Mr. Rigby said that all the “big players” across the nation are looking at geothermal, from Exxon to Chevron.

Committee Member Barrett asked how likely little earthquakes and tremors in Texas and Oklahoma are. Mr. Rigby said that it wasn’t hydraulic fracturing caused by geothermal, these were caused by wastewater disposal.

Alternate Committee Member Carter asked if there was a requirement for payment for the decommissioning cost to be paid ahead of time or accounted for. Mr. Rigby said that there is financial assurance where organizations are required to put money down at the beginning of the project.

Committee Member Watson asked for clarification on the amounts available through tax credits, incentives, and grants. Mr. Rigby said that these have not been used up, but they have been awarded. If a project does not move forward, some of it may come back into that bucket.

Committee Member Watson said that Colorado Springs Utilities does not have a large research and development (R&D) budget. Mr. Rigby said the R&D is more focused on emerging technologies and encouraged Colorado Springs Utilities to participate in some of those conversations and getting tied into what is happening to better understand where the organization may fall. Mr. Rigby said that there are more projects moving forward outside of Colorado that can be learned from.

Committee Member Burghart asked what is known about federal permitting and regulatory requirements. Mr. Rigby said that generally Colorado has only 35% federal lands. The federal process is developing and changing. There is a long permitting timeline on federal lands to go through the National Environmental Policy Act (NEPA) process.

Committee Member Barrett asked for comments on public perceptions and public opinions about geothermal and what the organization might anticipate. Mr. Rigby said there is variable perception, certain communities have pushed back in Colorado on geothermal – while others are embracing it. From the Colorado Energy & Carbon Management Commission, geothermal is favorable – it is clean, it is firm, and there is a lot of potential across different resources.

Alternate Committee Member Badeau asked if the state tax credit program has a defined limit. Mr. Rigby said that he believes so, but the best contact to answer this question is Mr. Bryce Carter with the State of Colorado.

Committee Member Smith asked what portion of the state's electric production could be geothermal. Mr. Rigby said optimistically that well over 10%, but it could also reduce load risk through thermal energy networks.

Committee Vice Chair Borden asked where the state is heading in energy generation. With the current goals, is Colorado on track? Ms. Murphy said that the oil and gas sector is on track. Transportation of energy is currently experiencing slowdowns.

Committee Member Burghart asked if there were other utilities participating in the Colorado Geothermal Council. Mr. Rigby said that there are numerous companies and co-ops participating in the tri-state area.

Committee Member Meyer asked how often geothermal should be looked at. Chair Danner stated that Colorado Springs Utilities is on a 3-to-5-year Energy Integrated Resource Plan (EIRP). Ms. Murphy said that looking at it every 1 to 2 years makes sense.

Committee Vice Chair Borden asked how UPAC members can get more information on the Geothermal Council. Mr. Rigby said that he would be able to provide contact information and provide information on meetings as well.

Alternate Committee Member Badeau asked if the council is considered a state sanctioned organization that is subject to open meetings or if the general public can participate. Ms. Murphy said that events are planned in different parts of the state for the general public and others to attend.

Committee Member Burghart asked what the ECMC's annual budget is, and Ms. Murphy said it is roughly \$37 million. He asked given the types of developments discussed today, does the budget need to be expanded? Ms. Murphy said that current budget is sufficient to regulate geothermal.

Alternate Committee Member Badeau asked if oil and gas wells can be converted to geothermal. Mr. Rigby said that the commission looks at repurposing existing structures to geothermal.

Committee Vice Chair Borden asked if plugged wells can be opened for geothermal use and how effective that is. Mr. Rigby said that is well bore specific. More recent plugging jobs will last longer than previous plugged wells.

Committee Member Barrett asked if there are any capped wells in El Paso County that may be viable. Mr. Rigby said there are capped wells, but those would need to be evaluated by an engineering firm to determine if they could be used for geothermal.

10:30 a.m.

4. Updated Geothermal Assignment Timeline

Ms. Bethany Schoemer, Strategic Planning and Governance Specialist Senior, reviewed the proposed geothermal assignment timeline.

Alternate Committee Member Badeau suggested contacting the Utah Furbo project for a presentation in November. If they are unavailable, Chair Danner asked if the November meeting would be another working session. If they are available, Chair Danner asked if the committee would like to do another Working Session and a presentation.

Ms. Schoemer asked if the Bylaws would need to be changed if the meeting format consists of a Working Session and a Presentation session. Mr. David Beckett, City Attorney, said that the request to have a working session as well as a presentation could be performed without a change.

Committee Member Burghart said that good progress was made at today's working session. He believes the continued discussion would be beneficial.

Committee Member Watson said that he believes the committee has a pretty good idea of the status of the technology. He questioned what the Regional Transmission Organization (RTO) overview would bring to the discussion. Chair Danner said that the RTO presentation is for general knowledge.

Committee Member Barrett shared his previous experience with RTOs, and he feels that would be beneficial to the committee – on how the RTO works. Alternate Committee Member Carter agreed that the presentation on the RTO would be beneficial.

Committee Member Meyer said that CapeStation is scheduled to be online in 2026. This would be a great presentation.

Alternate Committee Member Badeau asked if a copy of the Commission charter could be obtained. Chair Danner said this information can be requested.

10:40 a.m.

5. Customer Comment

Mr. Russ Bogardus, Customer, said that geothermal direct should be looked at. He has completed a design for a greenhouse. Mesa College has done a tremendous amount of work on geothermal transfer. The perspective may need to be expanded.

10:45 a.m.

6. Committee Member General Discussion

Committee Vice Chair Borden said the working session was very helpful in answering the proposed geothermal assignment questions.

11:00 a.m.

7. Adjournment

Chair Danner adjourned the meeting at 10:48 a.m.



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Utilities Policy Advisory Committee Geothermal Recommendation

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?

- Small source potentially.
- Not a large source in Colorado given the footprint of the state
- Concerns about the depth and scalability
- Potentially not a lot of money out there for it right now
- A lot of resources diverted to nuclear
- Yes, feasible can it be implemented at CSU with states goals: no, not possible or transactional but can be done. Technologically feasible but not economically feasible
- Otero pumping station because the amount of the 10-megawatt range would be a project that CSU may want to explore further.
- How the current relationship with Xcel and RTO. More advantageous a dedicated resource our there vs. what we have currently.
- Transmission is a large limiting factor. We don't have any of the natural resources close enough.
- Potential growth in the field with new technologies coming online

What is the state of the technology? And what are the associated project risks?

- Uncertain and a lot
- Scientific experiments rather than broad scaled still in the research phase. For very specific areas it is developed low overall value, broad commercialization still in the research phase because of that the project risks anywhere but established heat zones are very high perhaps prohibitive
- California, Iceland, Europe technology is advanced technology
- Project risks: Geographically distanced locations or it is questionable technology
- Uncertainty of the resource characteristics: exploratory drills. Not that developed and very localized if CSU was going to do something what are the flow or transmission options that is high risk.
- Resource itself, the heat, depth, availability to transmit for little payoff
- Technical risk, financial risk, operational risk, not a lot of construction risk if technical and financial risks are fine. Once operational technology is fine.
- Tax credits high risk.

What is the cost range for different options? Should cost be seen as prohibitive?

- 47 million for 10 megawatt and associated cost for transmission. Permitting cost?
- Not cost competitive against model
- State Energy Office: Initial capital 36.8 mil. Capital cost for SMR 42 mil. Difficult to get to 800 mgw of geothermal
- Based upon last assignment cost range per megawatt to build; cost to build and life expectancy;
- not only cost per megawatt and estimated cost in dollars
- This is the cost roughly with caveats.

What are the environmental pros and cons?

- Lack of certainty whether deep drilling has positive, negative, or neutral impact
- Drilling part very similar to oil and gas
- Pros: very small footprint if you get everything in place perfectly, clean energy, once built very favorable clean energy source. Geothermal technology most publicly accepted,
- Cons: general drilling risks, similar risks to deep drilling activities

Are the water constraints in Colorado a prohibitive factor?

- No
- Maybe need more information if there are technologies that use more
- Geothermal would displace a fossil project; you would have a good water source trade off and can use non pot water

What is the regulatory/legal environment in Colorado and nationally?

- Dependencies but 3-4 agencies that have to be involved. Outline the agencies involved.
- CDPHE, DNR, Energy Carbon Commission
- Timeline: no defined path since the technology is not actively used in the state

Are there federal grants, private investment opportunities or other funding that Springs Utilities should investigate?

- Tax credit but how much would be applied for the type we are considering that might provide to CSU is uncertain. 6% base rate on the credit 5x the 6% for projects under 1 megawatt; project over 1 megawatt have to meeting labor requirements.
- List ones available for grants. There are federal (list two or three agencies) and state (list those agencies).
- Federal tax credits (with limitations to obtain those credits)
- Classify the hurdles to get them maybe in an appendix

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?

- Goes with #6
- Build out timeframe: just like any other traditional generator once permitting is done. No clear answer. Mention transmission.
- If it's federal: NEPA.
- Build out: exploration risk factor
- Year 0, year 1, year 2, etc.

What is being done domestically and internationally in areas with similar water limitations and climate and altitude are found?

- Reorder this question 1 and 2 and 9 general questions. Environmental, 4 and 5. Regulatory: 6 and 8. Finance, 3, 7, and 10. 11 and 12 administrative leave as is.
- We don't think this is a necessary thing to look into.

What are the opportunities for partnerships and collaboration?

- Could collaborate with Xcel with transmission that would be between us and sources of geothermal energy
- Otero pump collaboration with Aurora/Xcel
- Military potentially

What is recommended for the frequency of UPAC re-examining this topic, including for the EIRP?

- Enhanced geothermal technology 3-5 years
- If something happens closer to home maybe a more frequent look. Conditional trigger.

Based on this assignments' findings, what if any are areas needing further evaluation by UPAC?

- Should be further evaluation of broad resources
- Big gap to meet current goals
- TBD on recommendation
- Transmission in general—resource wide
- How utilities are managing peak demand



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