

Decision No. C22-0633-I

**BEFORE THE PUBLIC UTILITIES COMMISSION OF THE STATE OF COLORADO**

PROCEEDING NO. 22A-0382ST

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IN THE MATTER OF THE APPLICATION OF PUBLIC SERVICE COMPANY OF  
COLORADO FOR APPROVAL OF ITS STEAM REGULATORY AND RESOURCE PLAN.

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**INTERIM DECISION GRANTING INTERVENTIONS,  
REQUIRING ADDITIONAL APPLICATION  
INFORMATION AND SETTING 45-DAY RESPONSE TIME  
TO PROVIDE ADDITIONAL INFORMATION.**

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Mailed Date: October 19, 2022

Adopted Date: October 19, 2022

**I. BY THE COMMISSION**

**A. Statement**

1. On September 1, 2022, Public Service Company of Colorado (Public Service or Company) filed an Application for approval of its Regulatory and Resource Plan (Plan) (Application) concerning the investments in and operations of its district steam system through 2030.

2. Through this Decision, we grant the interventions of the Colorado Energy Consumers (CEC) and the City and County of Denver (Denver). Further we require Public Service to provide additional application information consistent with the discussion below pursuant to 4 *Code of Colorado Regulations* (CCR) 723-1-1301(c)(III) of the Commission's Rules of Practice and Procedure.

**B. Procedural Background**

3. On September 1, 2022, Public Service filed its Application pursuant to Commission Rules of Practice and Procedure 4 *Code of Colorado Regulations* (CCR) 723-1-1303 and 4 CCR

723-8-8002 of the Commission's Rules Regulating Steam Utilities, and in compliance with the terms of a settlement agreement approved by Decisions R19-0591, C19-0734 and C22-0251 in the Company's most recent Steam Rate Case, Proceeding 19AL-0063ST.

4. As relevant here, that settlement agreement directed the Company to file a Regulatory and Resource Plan (Plan) for the steam business; and the results of an Engineering Study that includes an evaluation of each of the Company's individual customer's steam facilities and potential future conversion to another fuel source, to be filed as part of the Plan. In addition to the Plan, the Company's filing includes the testimony and attachments of four witnesses.

5. On September 2, 2022, the Commission issued a notice of the Application.

**C. Interventions**

6. On September 20, 2022, Trial Staff of the Commission (Staff) filed its Notice of Intervention as of Right, Entry Of Appearance, Notice Pursuant To Rule 1007(a) And Rule 1401, And Request for Hearing. On October 4, 2022, the Colorado Energy Office (CEO) filed its Notice of Intervention by Right.

7. On October 4, 2022, the City and County of Denver (Denver) filed its Motion to Permissively Intervene in this Proceeding.

8. Denver indicated it seeks intervention in this proceeding in part due to ongoing discussions with the Company regarding the future of the steam system for Denver's facilities. Specifically, Denver seeks to further explore Public Service's Facility Steam System Assessment and its identification of geothermal and Community Ground Source Heat Pump systems as a possible alternative to the steam system in the future. While Public Service has not yet proposed a pilot, Denver nonetheless seeks to explore the potential with the Company and the Commission through this proceeding.

9. Denver points out that The Department of Energy (DOE), through release of the Community Geothermal Heating and Cooling Design and Deployment Funding Opportunity and the State of Colorado, through HB22-1381, have committed resources towards the exploration of geothermal district heating and cooling (GDHC). Denver provides that it owns and maintains its own steam distribution system apart from the Public Service's District Steam System. Denver further notes that its steam distribution system services buildings in the Civic Center area and is well situated to evaluate and potentially pilot a GDHC system. According to Denver, these facilities also are connected to Public Service's district chilled water-cooling system, which potentially could be leveraged as an additional thermal source/sink as part of a GDHC system. Denver believes that if successful, the concept could help to cost-effectively decarbonize buildings. Denver currently is in the process of applying for DOE funding to conduct studies that evaluate conversion to a geothermal district loop, and the City seeks collaboration with the Company and the Commission on the GDHC concept through this proceeding.

10. In addition, Public Service's Plan and Engineering Study directly impact Denver's interest and strategies in reaching Denver's greenhouse gas emissions reduction goals, according to Denver. Further, Denver asserts the Company's application may impact Denver's options to serve its energy requirements currently being served with steam and would impact any associated costs. Denver claims this impact will substantially affect the pecuniary or tangible interest of Denver.

11. CEC states that if Public Service's Application is approved, it will have a direct and substantial impact on CEC's interests and the rates, charges, and future viability of steam services that CEC's members receive from the Company. CEC argues Public Service proposes to preserve the *status quo* and maintain its existing steam production facilities through 2030. However, other

parties to the proceeding may advocate for an alternative approach regarding the future of the Company's steam operations. Because the outcome of this proceeding will affect Public Service's steam operations for the near future and will impact its ability to provide reasonably priced and reliable steam and related energy services to the CEC members who depend on steam in their operations, this proceeding may substantially affect the pecuniary or tangible interests of CEC's members.

12. In addition, CEC argues its constituent members have a direct, tangible, and pecuniary interest in this proceeding with respect to the Engineering Study, which evaluates the Public Service's individual customers' steam facilities and potential future conversion to another fuel source. Because Public Service concludes that for the majority of steam customers the cost of conversion is not economical, CEC seeks the opportunity to conduct discovery and evaluate the Company's conclusion regarding the Engineering Study so that its members may determine what is best for their respective business interests. CEC state it is concerned about the potential for some steam ratepayers who do convert causing a disproportionate rate impact for Public Service's remaining steam ratepayers, as there would be fewer customers collectively responsible for absorbing the costs of its prudent steam operations in rates.

13. We find that Denver and CEC each state good cause pursuant to the provisions of Rule 1401(c) to grant each parties' request for permissive intervention. Therefore, Denver and CEC are each intervenors in this proceeding. The intervenors in this Proceeding are Staff, CEO, CEC, and Denver.

#### **D. Application**

14. The Company's Application asks for approval of its Plan, which would govern investments in, and operation of, the Company's district steam system through 2030. In developing

its Plan, the Company states that it considered: three future load scenarios (flat load, 2.5 percent annual reduction and 5 percent annual reduction (which approximates the trend over the last decade)); the capability of existing steam assets to meet forecasted load scenarios through 2030; an evaluation of replacing gas-fired Units 1 & 2 at the Denver Steam Plant (DSP) with electric boilers; the reliability impacts of different load and resource scenarios; and a rate forecast through 2030, including impacts related to declining sales.

15. The Company estimates that DSP units 1 & 2 can be reliably life-extended beyond their scheduled 2025 retirement dates with annual incremental maintenance amounting to approximately \$100,000 total. A gas-fired replacement for either unit would cost approximately \$10 million. The Company states that in order to replace existing Units 1 & 2 at the DSP with electric boilers, would require it to install two 50 MVA transformers at the Zuni Station site (because there is insufficient room for them at the DSP) and run feeder lines underground for two miles to the DSP.

16. Including the cost of removing the old boilers and installing the new electric units, the Company estimates total project costs at up to \$113 million. By comparison, the steam system rate base in 2021 was just under \$65 million. The Company also considered installing new electric boilers at the Zuni site, at which an unused power plant is currently being decommissioned. That site has room for the needed electrical service, could utilize overhead feeders, has a dormant steam transmission line connecting the site to the district network, and could improve system resilience by providing an additional steam injection point. The Company estimates the cost of installing electric boilers at Zuni at between \$84 and \$109 million.

17. Considering the above estimated cost impacts, the Company proposes to simply maintain existing steam production resources and the existing steam distribution system, and to

periodically re-evaluate whether Unit 1 at the Denver Steam Plant (DSP) can be retired. The Company estimates it can reliably serve all projected peak system loads with these resources through 2030.

**E. Engineering Study**

18. As noted above, pursuant to the terms of the approved settlement agreement in Proceeding 19AL-0063ST, the Company conducted an Engineering Study to evaluate the economics and practicality of converting each of its 121 steam customers to either on-site gas-fired boilers or on-site electric resistance boilers. The Engineering Study found that electric conversions had paybacks exceeding 25 years for all customers, which the Company deems cost-prohibitive and therefore unlikely to lead to customer departure.<sup>1</sup> However, the Study determined that customers representing about 27 percent of steam revenues would have paybacks of eight years or fewer if they were to convert to gas-fired boilers, which could result in customer departure. The Company maintains that if these customers were to depart, it could initiate a negative spiral in which the resulting increased steam rates could induce further customers to depart from the system.<sup>2</sup>

19. Importantly, the Engineering Study investigated neither the potential to replace steam heating systems with air-source heat pumps, nor the potential to convert the entire steam system to a district geo-exchange system.

**F. Findings on Completeness of Application**

20. Although the Company states that it “intends to actively monitor the impact of new electrification measures and options in encouraging customer conversions away from steam” and

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<sup>1</sup> Hearing Exhibit 101, Direct Testimony of Alexander G. Trowbridge, pp. 26-28.

<sup>2</sup> *Id.*, pp. 28-31.

that it will “continue to evaluate other technologies that may be in nascent stages,”<sup>3</sup> its application is silent about air-source heat pump and geo-exchange technologies. Nor does the testimony of any of its witnesses suggest that these technologies are inapplicable for economic, technical or any other reason. In contrast, three of the four intervenors in this Proceeding indicate that evaluation of the potential of these technologies is a primary motivation for their intervention. Notably, two of these intervenors, Staff and Denver, were signatories of the Proceeding 19AL-0063ST settlement agreement that gave rise to the Engineering Study.

21. Given the potential for distributed heat pumps and district geo-exchange technologies to reduce the carbon dioxide emissions associated with heating and cooling buildings, which would advance both the State’s and the City of Denver’s decarbonization goals, and the existence of both state and federal funding sources targeted explicitly to the evaluation, design and construction of geo-exchange systems,<sup>4</sup> the Commission finds that it cannot properly evaluate the Company’s proposal for the operation of its steam system through 2030, because it is silent on these technologies.

22. While these technologies may hold promise for the evolution of the Company’s steam system, the Commission acknowledges that there may be valid technical, economic, or other reasons that make them impractical at this time. However, the Company makes no such contention in its Application.

23. Therefore, we find, pursuant to the provisions of Rule 1303(c)(III), that more information is necessary before deeming the Application complete. We accordingly direct the Company to consult with the intervenors in this Proceeding to attempt to develop a consensus

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<sup>3</sup> Hearing Exhibit 102, Direct Testimony of Steven W. Wishart, p. 35.

<sup>4</sup> See <https://www.energy.gov/eere/geothermal/articles/community-geothermal-heating-and-cooling-design-and-deployment> and § 24-38.5-113 C.R.S., in particular subparagraph (4)(b).

approach to developing information that will enable the Commission to determine whether air-source heat pumps, district geo-exchange, or other geothermal technologies are viable alternatives for the steam system's customers.

24. Public Service shall file a report in this Proceeding within 45 days of the publication of this Decision describing the results of its efforts to collaborate with the intervenors to develop a consensus approach to studying the viability of these technologies. Regardless of whether or not consensus is achieved, the Company will either present a proposal for the study of these technologies in the context of its district steam system or explain why it believes they are not viable candidates for its customers at this time. If the former, the Company shall propose a timeframe for the completion of this study.

25. Additionally, given that Company witness Mr. Wishart's own testimony indicates that the load trend over the last decade has been a decline of approximately 5 percent,<sup>5</sup> the Commission finds that the Company's load forecast scenarios may not bracket the range of likely future scenarios. Accordingly, we direct the Company to develop and introduce into the record an additional rate forecast that assumes an annual reduction in steam sales of 7.5 percent.

## II. ORDER

### A. The Commission Orders That:

1. Public Service Company of Colorado's Application for Decision Approving Its Regulatory and Resource Plan in Compliance with Decision No. C19-0734 shall the filing of additional information consistent with the discussion above.

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<sup>5</sup> Hearing Exhibit 102, p.18, lines 18-21.

2. Public Service shall file the required additional information consistent with the information in Ordering Paragraph No. 8 below no later than 45 days from the effective date of this Decision.

3. The Notice of Intervention as of Right by Commission Staff is noted.

4. The Notice of Intervention as of Right by the Colorado Energy Office is noted.

5. The Motion to Permissively Intervene filed by the Colorado Energy Consumers on October 4, 2022 is granted.

6. The Motion to Intervene filed by the City and County of Denver on October 4, 2022 is granted

7. The parties to this Proceeding are: Public Service Company of Colorado, Staff of the Public Utilities Commission, the Colorado Energy Office, Colorado Energy Consumers and the City and County of Denver.

8. Public Service shall confer with the parties to develop a consensus approach to developing information that will enable the Commission to determine whether air-source heat pumps, district geo-exchange, or other geothermal technologies are viable or are not viable alternatives for the steam system's customers. Regardless of whether consensus is achieved, within 45 days of the effective date of this Decision, the Company will either present a proposal for the study of these technologies in the context of its district steam system or explain why it believes they are not viable candidates for its customers at this time.

9. If the Company presents a proposal for the study of the indicated technologies, it shall propose a timeframe for the completion of this study.

10. The Company shall develop and present an additional analysis of steam rates through 2030 assuming a 7.5 percent annual reduction of steam sales.

11. This Decision is effective on its Mailed Date.

**B. ADOPTED IN COMMISSIONERS' WEEKLY MEETING  
October 19, 2022**

( S E A L )



ATTEST: A TRUE COPY

A handwritten signature in cursive script that reads "Doug Dean".

Doug Dean,  
Director

THE PUBLIC UTILITIES COMMISSION  
OF THE STATE OF COLORADO

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JOHN GAVAN

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Commissioners