

**BEFORE THE
COLORADO PUBLIC UTILITIES COMMISSION**

IN THE MATTER OF THE APPLICATION
OF PUBLIC SERVICE COMPANY OF
COLORADO FOR APPROVAL OF ITS
2021 ELECTRIC RESOURCE PLAN AND
CLEAN ENERGY PLAN

Proceeding No. 21A-0141E

HEARING EXHIBIT 1410

**TESTIMONY OF NOAH LONG ON BEHALF OF THE CONSERVATION COALITION
IN OPPOSITION TO THE PROPOSED NON-UNANIMOUS, NON-COMPREHENSIVE
SETTLEMENT**

DECEMBER 7, 2021

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LIST OF ATTACHMENTS

- Attachment NL-34 Bob Bergman, Colorado Public Utilities Commission, “Competitive Procurement in Electric Resource Planning” (Feb. 2021)
- Attachment NL-35 Proceeding No. 16A-0396E, Attachment 9 Public Refile of Highly Confidential 120-Day Report, Appendix H

1 **I. INTRODUCTION OF THE WITNESS**

2 **Q. Please state your name, position, and employer.**

3 A. My name is Noah Long. My business address is 200 West De Vargas St. #2, Santa Fe,
4 NM 87501. I am the Western Region Director for Climate and Clean Energy for the Natural
5 Resources Defense Council (“NRDC”).

6 **Q. Have you submitted other testimony in this proceeding?**

7 A. Yes, I submitted answer and cross-answer testimony in this proceeding.
8

9 **II. SUMMARY OF KEY POINTS**

10 **Q. Did the Conservation Coalition join the proposed settlement?**

11 A. No.

12 **Q. Please explain why the Conservation Coalition did not join the proposed settlement.**

13 A. The primary reason the Conservation Coalition did not join the proposed settlement is
14 that our proposed coal actions would reduce emissions more than the settlement *and* save
15 hundreds of millions of dollars in direct customer costs- savings that the commission could
16 dedicate in part to transition investments in coal communities while still saving customers
17 money. As I discuss below, the Company estimates that the settlement would lead to lower
18 emissions, but higher customer costs, than the Company’s preferred portfolio. However, the
19 standard the Commission is required to use, and that parties should use, is not whether a
20 settlement is better than the applicant’s original proposal. The appropriate standard is whether
21 the settlement is better than the other portfolios in the record on the statutory factors of cost,
22 emission reductions, and reliability. *See* § 40-2-125.5.(4)(d)(I)-(III), C.R.S.

1 The proposed settlement does not meet that standard. As Dr. Roumpani’s modeling
2 demonstrates, the Conservation Coalition’s coal actions for Pawnee and Comanche 3 would
3 result in an additional 2 million tons of CO₂ before 2030 and 4 million tons of CO₂ reductions
4 before 2040 while saving \$206 million in direct customer costs, compared to the settlement (or
5 \$328 million, inclusive of earlier securitization benefits). When CO₂ costs and securitization
6 savings are considered, the Conservation Coalition’s coal actions would save \$521 million
7 relative to the settlement’s coal actions. Moreover, the settlement will likely impose greater
8 costs than these figures reflect, because the Company failed to include any estimate of the cost
9 impact from the settlement provision that the Comanche 3 be replaced through a separate, stand-
10 alone solicitation that guarantees the Company own \$626 million in resources to replace
11 Comanche 3.

12 In addition, the proposed settlement has other major flaws: significant uncertainties
13 about attaining emissions reductions; it attempts to lock in burning coal at Comanche 3 until
14 2035, despite the numerous operational problems at Comanche 3; it attempts to prohibit the
15 Commission from revisiting the 2035 Comanche 3 retirement date in future ERPs; and it
16 guarantees that future costs at Comanche 3 would be recoverable- despite a retirement date
17 nearly 15 years in the future.

18 The settlement is undoubtedly the result of a political deal by some key parties to
19 “address” just transition by keeping Comanche 3 open far longer than can be justified from a cost
20 or emissions perspective. It uses more expensive, complicated, unenforceable and uncertain
21 operational constraints as an alternative, and in doing so raises customer cost by at least \$200
22 million. The commission should reject the coal actions in the settlement and instead pursue the
23 portfolio that achieves the greatest reductions and offers the lowest cost: CC6econ*, as described

1 in Dr. Roumpani's settlement testimony. In doing so, the Commission could dedicate a
2 significant share of the savings from the Conservation Coalition's portfolio to transition
3 assistance, clean economic development and worker benefits in transitioning communities. That
4 would be a far better outcome than keeping coal in the portfolio until 2035, as the settlement
5 proposes.

6 **Q. What are your chief substantive concerns with the proposed settlement?**

7 A. Based on the evidence that is in the record, the Conservation Coalition believes that the
8 evidence shows that the provisions of the proposed settlement listed below should not be
9 approved and should instead be modified as follows:

- 10 • **Pawnee**: Converting Pawnee to gas at the end of 2024 would lower customer costs and
11 emissions compared to the settlement proposal to convert Pawnee to gas by 2026. In
12 addition, the settlement is silent about whether the Company will continue its irrational
13 policy of designating Pawnee as must-run and refusing to operate Pawnee economically.
14 The Conservation Coalition's preferred coal actions, which have Pawnee convert to burn
15 gas in 2024 and dispatch economically, would reduce costs and emissions compared to
16 the settlement agreement's proposal for Pawnee.
- 17 • **Comanche 3 retirement date and operational restrictions**: The proposed settlement
18 disregards the economic data, selects a 2035 retirement date, and tries to compensate for
19 that later retirement date by achieving emission reductions in a costly way. Specifically,
20 the settlement proposes a complicated, uncertain, and unenforceable set of operational
21 changes: using the social cost of carbon in dispatch for one-and-a-half years, followed by
22 a year of no operational restrictions at all, and then the use of target (but unenforceable)

1 capacity factors. This is clearly the result of political horse-trading; no economically
2 rational utility would ever propose this combination of actions on its own. As Dr.
3 Roumpani's modeling demonstrates, the economically rational way to achieve greater
4 emissions reductions and lower costs than the settlement is to dispatch Comanche 3
5 economically (without the SCC in dispatch) and retire it earlier than 2035. The
6 settlement rationalizes this complicated extension of Comanche 3's operations through
7 appealing to the benefits to Pueblo of continuing the operation of the largest pollution
8 source in the state, Comanche 3. But the settlement proposal is so much more expensive
9 than the Conservation Coalition's proposal that up to an additional \$200 million could be
10 funded by PSCo customers on workforce and community transition in Pueblo before the
11 Conservation Coalition's portfolio would have the same cost to customers as the
12 settlement, excluding the costs of proposed utility-only ownership of \$626 million of
13 replacement energy.

- 14 • **Comanche 3 stand-alone solicitation & guarantee of Company ownership and cost**
15 **recovery:** The settlement proposes that replacement resources for Comanche 3 be
16 acquired in a solicitation separate from any ERP for an action outside this resource
17 acquisition period, that the Company be guaranteed ownership of \$626 million in
18 resources to replace Comanche 3, and that the Company be guaranteed recovery of all
19 remaining undepreciated costs for Comanche 3 for a retirement date nearly 15 years in
20 the future. This will increase the cost to replace Comanche 3 with lower-emitting
21 resources in three ways: (1) a solicitation separate from an ERP solicitation will receive
22 fewer bids than if combined with the ERP solicitation, resulting in a smaller pool of bids
23 and less competition; (2) guaranteeing \$626 million in Company ownership, with no

1 Commission review of the reasonableness of this level of Company ownership, prohibits
2 the Commission from selecting a lower level of Company ownership that has a more
3 reasonable cost; and (3) guaranteeing full recovery of undepreciated costs is premature,
4 given that some of those costs include future expenses that have not yet been subject to a
5 prudence review.

- 6 • **Craig and Hayden:** The Company is committing to end the irrational practice of
7 designating Comanche 3 as must-run, and is instead committing to dispatch Comanche 3
8 economically. But the Company designates all of its coal units as must-run, not just
9 Comanche 3. For the same reasons that the Company should be dispatching Comanche 3
10 economically, it should be dispatching all of its other coal units economically as well, and
11 removing their must-run designations. Yet the settlement agreement is not clear about
12 whether the Company is removing the must-run designations for the Craig 2 and Hayden
13 1 and 2 coal units.

- 14 • **Phase II modeling inputs:** The Conservation Coalition has two overarching concerns
15 with the Phase II modeling inputs in the proposed settlement. First, some of the inputs are
16 inappropriate, particularly the Effective Load Carrying Capability (“ELCC”) for stand-
17 alone batteries, and using a Planning Reserve Margin that fails to investigate whether
18 expanding the transmission connection to PacifiCorp could lower costs.
19 Second, it makes little sense for the Company to have agreed that some of its modeling
20 inputs need to be changed, but to not use any of the new inputs in its Phase I modeling
21 concerning the settlement. This results in a mismatch between the inputs used for Phase I
22 and Phase II modeling. Most importantly, by failing to use the updated input

1 assumptions in its Phase I modeling, the Company is not accurately modeling the coal
2 actions in the settlement and does not have a proper evidentiary basis for the coal actions
3 in the settlement--because the Company is not modeling the proposed coal actions in the
4 settlement under the same assumptions it has committed to use in Phase II. This is
5 fundamentally arbitrary and leaves the Commission without a proper evidentiary record
6 for evaluating the full impacts of the proposed settlement.

7 **Q. How does the analysis submitted to support the settlement affect your consideration**
8 **of its merit?**

9 A. Setting aside the fact that the settlement will lead to higher greenhouse gas emissions and
10 higher customer costs than the Conservation Coalition's recommended portfolio, the modeling
11 conducted after the settlement was filed is also insufficient. The settling parties have not
12 presented any evidence of the impacts of key provisions of the settlement, such as the guarantee
13 that PSCo own \$626 million in resources to replace Comanche 3 and that the Comanche 3
14 replacement resources be procured through a separate, stand-alone solicitation rather than the
15 normal Phase II RFP. In addition, the modeling the settling parties presented on December 1
16 does not use *any* of the updated inputs that the settlement proposes to change for Phase II. Thus,
17 even today, the settling parties still have not produced EnCompass modeling that shows the
18 costs, emissions, capacity expansion, and reliability impacts of the *entire* settlement agreement.

19 **Q. Are you saying that the December 1 modeling submitted by the Company does not**
20 **model all of the key provisions in the settlement agreement?**

21 A. Yes. PSCo submitted modeling on December 1 that does not address the provisions of the
22 settlement that radically change how resources to replace Comanche 3 would be acquired. The
23 settlement proposes a procurement process for replacing Comanche 3 that entails a stand-alone

1 solicitation, separate from the normal Phase II RFP; and a guarantee that PSCo own at least \$626
2 million in replacement resources, with no opportunity for Commission review of the
3 reasonableness of the costs of utility ownership. This disregards the requirements in SB 19-236
4 for the commission to aim for a 50/50 split between utility and third-party ownership only “if the
5 Commission finds the cost of utility or affiliate ownership of the generation assets comes at a
6 reasonable cost and rate impact.” Section 40-2-125.5(5)(b), C.R.S. Prior to filing the proposed
7 settlement, no party ever suggested this procurement process in testimony, and to my knowledge,
8 this Commission has never guaranteed a minimum dollar amount of Company-owned resources
9 to a utility prior to a solicitation.

10 Mr. Landrum’s settlement testimony expressly states that he did not model these radical
11 changes that the settlement proposes for procuring resources to replace Comanche 3.¹ In
12 addition, Mr. Landrum admits that he did not model the settlement using *any* of the new inputs
13 that the settlement proposes to use in Phase II.²

14 **Q. Did the Conservation Coalition file a motion pointing out that key aspects of the**
15 **settlement were not in the record, and requesting that the Commission instruct PSCo to**
16 **conduct EnCompass modeling of the settlement agreement compared to options in the**
17 **record?**

18 A. Yes. Unfortunately, even after raising this directly with the Company and the settling
19 parties, and raising it in our motion, the Company has still failed to model key provisions of the
20 proposed settlement agreement, including: the standalone solicitation for Comanche 3

¹ Hearing Exhibit 135 at 17-18.

² *Id.* at 10-11.

1 replacement resources; the guarantee of \$626 million in Company-owned resources to replace
2 Comanche 3; and the modeling inputs that would be changed for Phase II.

3 **Q. Do you have concerns about the adoption of the settlement given that there is no**
4 **EnCompass modeling of the entire settlement and because the Company expressly stated it**
5 **did not model the impacts of all key terms of the settlement agreement?**

6 A. Yes. I understand why the Commission is anxious to issue a prompt decision in this case
7 and proceed to Phase II, particularly given all the other matters on the Commission's plate. I
8 sympathize with wanting to conclude Phase I promptly—we have no interest in delay simply for
9 the sake of delay. Unfortunately, I fear that adopting this settlement on the current record will
10 ultimately backfire, because it will make the Commission's Phase I decision legally suspect.
11 Having the Commission issue a Phase I decision based on an inadequate record is not in
12 anyone's interest, particularly if it causes further delay and reconsideration.

13

14 **III. SUMMARY OF RECOMMENDATIONS**

15 **Q. What do you recommend the Commission do in its Phase I order regarding the**
16 **proposed settlement?**

17 A. I recommend the Commission enter a Phase I order that rejects the following provisions
18 in the proposed settlement and instead adopts the following requirements (either through
19 rejecting the settlement in its entirety, or modifying the settlement):

- 1 • **Phase II Inputs:**
- 2 ○ Paragraph 5, ELCC for stand-alone battery storage: Adopt for Phase I the ELCC values in
3 Derek Stenclik’s testimony, until the Company can conduct an improved ELCC study for use
4 in Phase II.³
- 5 ○ Paragraph 8, Comanche 3 inputs to use in Phase II: Adopt for Phase II the Comanche 3
6 inputs recommended in Tyler Comings’ testimony, which more accurately reflect the historic
7 availability factor and forced outage rate of Comanche 3 than the inputs the Company has
8 used in its modeling.
- 9 ○ Paragraph 22, modeling of new gas resources: Adopt the restrictions on the assumed life of
10 new gas recommended in Tyler Comings’ testimony, in light of the fact that the Company’s
11 modeling of new gas relies upon speculative hydrogen combustion turbines that are not
12 commercially available today and the Company has not fully accounted for the cost of
13 converting new gas plants to burn 100% hydrogen;
- 14 ○ Paragraph 23, no round-trip modeling: Adopt Derek Stenclik’s recommendation for how to
15 conduct Phase II modeling to ensure that the portfolio is reliable.
- 16 • **Paragraphs 25-26, Craig 2 and Hayden 1 & 2:**
- 17 ○ Require PSCo to remove the must-run designation for Hayden 1 and Hayden 1, and make all
18 reasonable and good faith efforts to do so for Craig 2, unless the Company files a document
19 explaining that it is legally unable to do so, and the Commission finds that the Company’s
20 explanation is reasonable.
- 21 • **Paragraphs 28-29, Pawnee:**

³ This recommendation was supported by COSSA-SEIA witness Kevin Lucas. See Hearing Exhibit 2201 at 12:2-7.

- 1 ○ Require PSCo to convert Pawnee to burn gas no later than December 31, 2024; direct PSCo
- 2 to file a CPCN for the conversion within 60 days of the issuance of the Phase I Order in this
- 3 proceeding to accomplish this gas conversion; and
- 4 ○ Require PSCo to remove the must-run designation for Pawnee by June 1, 2022.
- 5 • **Paragraphs 31-47, Comanche 3:**
- 6 ○ Remove the entire section (IV)(D) on Comanche 3, including
- 7 ▪ Remove the provision that replacement resources for Comanche 3 be acquired through a
- 8 separate, stand-alone solicitation, and instead have replacement resources acquired
- 9 through a Phase II ERP acquisition, as is normally done;
- 10 ▪ Remove the provision guaranteeing the Company ownership of \$626 million in resources
- 11 to replace Comanche 3;
- 12 ▪ Remove the provision guaranteeing the Company recovery of all undepreciated costs
- 13 associated with Comanche 3 unless retirement is moved to 2027; and
- 14 ○ Require the retirement of Comanche 3 by December 31, 2027; and
- 15 ○ Require the Company to remove the must-run designation for Comanche 3 by June 1, 2022.
- 16 • **Paragraph 49, Performance Incentive Mechanism (“PIM”)**
- 17 ○ With respect to a separate proceeding regarding a PIM for emission reductions, remove the
- 18 provision that eliminates discovery rights and remove the provision requiring a Commission
- 19 decision within 30 days of a hearing. Instead, the Commission should provide any
- 20 reasonable limitations on discovery it thinks necessary but preserve some discovery, and
- 21 should provide at least 14 days for submission of Statements of Position after the conclusion
- 22 of the hearing and 30 days between filing of SOPs and the Commission decision.

- 1 • Paragraph 60, potential expansion of the transmission link to PacifiCorp
- 2 ○ The Commission instructed PSCo to conduct supplemental modeling of a 400 MW increase
- 3 in the transmission connection between PSCo and PacifiCorp. The Company's supplemental
- 4 modeling showed that expanding this transmission link could save over \$700million. The
- 5 settlement eliminates consideration of this cost-saving measure in this ERP, and instead
- 6 defers consideration to the next ERP. This is a significant missed opportunity. The
- 7 Commission should instruct PSCo to study this transmission link now, and present results
- 8 early enough in Phase II so that it can potentially incorporated into a final Phase II order.

9 **Q. What is the Conservation Coalition's position on provisions of the proposed**

10 **settlement that you have not identified?**

11 A. The Conservation Coalition does not object to the Commission approving the provisions

12 of the proposed settlement agreement that are not mentioned in my testimony.

13 **Q. What is the Conservation Coalition's position on issues not addressed by the**

14 **settlement?**

15 A. The Conservation Coalition maintains its prior positions, articulated in its answer and

16 cross-answer testimony, on all issues not covered by the proposed settlement agreement.

17

18 **IV. THE SETTLEMENT MUST BE COMPARED TO ALL PROPOSALS ON THE**

19 **RECORD, NOT JUST PSCO'S DIRECT CASE**

20 **Q. Are there improvements in the settlement compared to the Company's preferred**

21 **portfolio in its direct case?**

22 A. From my perspective, yes, there are some areas of improvement. The proposed settlement

23 will likely lead to lower emissions, though at a higher cost. The Company's settlement testimony

1 emphasizes that the proposed settlement is better than the Company's direct case. That is, the
2 Company attempts to show that on a variety of metrics, the proposed settlement is better than the
3 preferred portfolio the Company presented in its direct case.

4 **Q. As a policy matter, should the Commission evaluate the proposed settlement solely**
5 **by determining whether it improves the Company's direct case?**

6 A. No. In its direct case, the Company presented a preferred portfolio. But there are more
7 than twenty parties in this case, most of which presented recommendations in testimony. At
8 least three parties (CEO, Conservation Coalition, and UCA) filed testimony with EnCompass
9 modeling of portfolios different than any portfolios the Company presented.

10 Thus, the important question is not whether the proposed settlement is better than the
11 Company's preferred portfolio in its direct case. Rather, the question is whether the proposed
12 settlement is better than the options in the record, including the options intervenors
13 recommended, under the applicable statutory factors of emissions, customer costs, and
14 reliability. *See* Section 40-2-125.5(4)(d)(I)-(III). As Dr. Roumpani's modeling demonstrates,
15 the answer is "no": the settlement has higher emissions and higher customer costs than the
16 Conservation Coalition's preferred portfolio, and is no better on reliability.

17 **Q. What is your understanding of how the Commission should review the proposed**
18 **settlement?**

19 A. Several statutes apply to this ERP and CEP. For example, SB 19-236 requires the
20 Commission to make several findings regarding this ERP and CEP. Among other things, SB 19-
21 236 requires that the Commission review a Clean Energy Plan to determine whether it is in the
22 public interest, based on three factors: emission reductions, and the health and environmental
23 benefits of emission reductions; reliability; and cost to customers on a net present value basis.

1 Section 40-2-125.5(4)(d)(I)-(III), C.R.S. The Commission must also determine whether the
2 annual rate impact from the CEP activities is below the 1.5% annual rate cap established by SB
3 19-236. Section 40-2-125.5(5)(a), C.R.S.

4 The statutes applicable to this ERP and CEP do not have separate standards for
5 settlements. In fact, I am not aware of any statute applicable to PSCo's resource plans that has
6 different standards for settlements as compared to the Company's direct application. Instead, the
7 statutory requirements are the same regardless of whether the Commission is reviewing a
8 proposed settlement or the Company's application. Thus, the Commission still needs to
9 determine whether the proposed settlement is supported by the evidence in the record and is
10 consistent with applicable legal requirements—in the same way the Commission would make
11 this determination in the absence of a proposed settlement.

12 **Q. Does Mr. Landrum's settlement testimony ignore the modeling in the record from**
13 **intervenors?**

14 A. Yes. In its December 1 settlement testimony, the Company does not compare the coal
15 actions in the settlement proposal to *any* of the 19 combinations of coal actions that intervenors
16 modeled in their testimony. Instead, Mr. Landrum's settlement testimony compares the
17 settlement to only the Company's ERP and preferred portfolios.

18 Colorado should be proud of the competitive solicitations used in Phase II ERPs, because
19 competition can drive innovation, reduce costs, and lead to better outcomes. The same is true for
20 policies and ideas: competition leads to better outcomes. The Commission should evaluate all the
21 options on the record to determine the best option for customers, the environment and the public
22 interest under the statutory factors, not simply the outcomes the settling parties think is
23 politically expedient.

1 **Q. Does the evidence show that the Conservation Coalition’s recommended portfolio**
2 **will reduce emissions and reduce costs more than the proposed settlement, while ensuring**
3 **reliability and a just transition?**

4 A. Yes. The Conservation Coalition has now submitted three rounds of EnCompass
5 modeling that show that the optimal portfolio, from a cost and emissions perspective. The
6 portfolios have Comanche 3 retiring at the end of 2027, Pawnee converting to gas at the end of
7 2024, and both units being dispatched economically.

8 **Q. Is a portfolio that retires Comanche 3 in 2027, converts Pawnee to gas in 2024, and**
9 **dispatches both units economically superior to the proposed settlement’s coal actions on the**
10 **relevant statutory factors?**

11 A. Yes. SB 19-236 requires the Commission to base its decision on the Clean Energy Plan
12 on three primary factors: emissions reductions, customer cost, and reliability.⁴ Dr. Maria
13 Roumpani’s testimony presents EnCompass modeling showing that this set of actions for
14 Comanche 3 and Pawnee has lower emissions and lower customer costs than the proposed
15 settlement, while still meeting the same reliability standards. Thus, on two of the statutory
16 factors, the Conservation Coalition’s portfolio is better than the proposed settlement, and on the
17 third factor, reliability, there is no difference between the Conservation Coalition’s portfolio and
18 the settlement.

19 In addition, the Conservation Coalition’s portfolio ensures a just transition by
20 guaranteeing the same tax revenues to Pueblo as under the proposed settlement. And the
21 Company has committed to no layoffs of employees regardless of when Comanche 3 closes. I

⁴ § 40-2-125.5(4)(d)(I)-(III), C.R.S.

1 recommend the Commission go further: it could require that the Company dedicate a significant
2 portion of the \$200 million in savings from adopting the Conservation Coalition preferred
3 portfolio instead of the settlement to transition investments in coal communities, while still
4 saving customers money relative to the proposed settlement.

5 **Q. Are you saying that the proposed settlement would increase both costs and**
6 **emissions relative to the Conservation Coalition's portfolio?**

7 A. Yes. The fundamental flaw in the proposed settlement is that it is both more costly and
8 more polluting than alternatives in the record. People unfortunately still often think of cost and
9 emission reductions as trade-offs: that you have to increase costs to decrease emissions. But the
10 Conservation Coalition's portfolio has no such trade-off: the Commission can both lower costs
11 and lower emissions relative to the proposed settlement by modifying the settlement to
12 incorporate the coal actions recommended by the Conservation Coalition.

13 **Q. Why does the proposed settlement have higher costs and higher emissions compared**
14 **to the Conservation Coalition's portfolio?**

15 A. Dr. Roumpani is the Conservation Coalition's modeling expert, and her settlement
16 testimony goes into greater detail on this topic. But my understanding is that there are three
17 primary reasons. First, the settling parties avoided selecting an economically optimal retirement
18 date for Comanche 3. The Conservation Coalition is the only party that used EnCompass to
19 determine the least-cost retirement date for retiring Comanche 3. Dr. Roumpani found that when
20 the model is allowed to select the retirement date for Comanche 3, the model retires Comanche 3
21 on the earliest date it is allowed. Instead of following the economics, the settling parties selected
22 a 2035 retirement date for Comanche 3 that is more costly than earlier retirement dates.

1 Second, the settling parties selected a Pawnee gas conversion date later than 2024 and
2 appear to have failed to remove the must-run designation for Pawnee and dispatch the unit
3 economically prior to conversion. These actions in the settlement agreement increase costs and
4 emissions relative to converting Pawnee to gas in 2024 and dispatching the unit economically,

5 Third, the settling parties are using a complicated combination of operational restrictions
6 to try to approximate the emission reductions achievable through retiring Comanche 3 on an
7 economically rational schedule. In particular, the settlement proposes temporarily using the
8 social cost of carbon in dispatch, which will significantly increase customer costs but is not
9 allowed to affect the retirement decision of carbon-emitting resources. That is, the settling parties
10 decided to use the social cost of carbon in dispatch but do not allow the model to retire units
11 early because of the social cost of carbon in dispatch. This results in a using the social cost of
12 carbon in dispatch of large coal units with high carbon emission rates, such as Comanche 3.
13 Coal units like Comanche 3 have high fixed costs, and thus were designed to run as baseload
14 units at high capacity factors to recover their high fixed costs. Using the social cost of carbon in
15 dispatch results in Comanche 3 running much less than if it were dispatched economically. This
16 increases costs in two ways: first, customers are paying the high fixed costs for Comanche 3 but
17 getting very little energy benefits from the unit; and second, when Comanche 3 runs less than it
18 would if economically dispatched, higher-priced gas generation takes its place. If the Company
19 had run the model with the social cost of carbon in dispatch for Comanche 3 and allowed the
20 model to select the optimal retirement date, the model would likely have immediately retired
21 Comanche 3.

1 **Q. Have you ever heard of a utility proposing to operate a large coal unit using the**
2 **complicated and unenforceable mix of operational restrictions proposed in the settlement**
3 **for Comanche 3?**

4 A. No. I oversee NRDC's climate and utility regulatory work throughout the Western
5 United States, and also follow the electric industry throughout the country. I have never heard of
6 any electric utility proposing to use the social cost of carbon in dispatch for one-and-a-half-years,
7 then ending the use of the SCC in dispatch, followed by the use of target capacity factors. And
8 the reason no other utility in the country has ever proposed this should be obvious: it is not an
9 economic, certain or enforceable way to achieve emission reductions.

10 **Q. Does the settlement propose to use this complicated set of operational restrictions to**
11 **avoid retirement for any unit other than Comanche 3?**

12 A. No. Every other coal unit is either being converted to gas or retired before 2030. But the
13 settling parties refused to do the economically rational thing and retire Comanche 3 before 2030
14 as well. As I discussed at length in my answer and cross-answer testimony, there are strong
15 consumer, climate and public interests in ensuring the retirement of all coal by 2030, at the latest.

16 The settlement proposes a non-sensical and expensive set of operational restrictions that
17 no party ever suggested in testimony to try to get emission reductions from Comanche 3. As Dr.
18 Roumpani's modeling shows, greater emission reductions can be achieved at a lower cost by
19 dispatching Comanche 3 economically and then retiring it by the end of 2027.

20 **Q. Do the provisions of the settlement lead to an enforceable and certain set of resource**
21 **decisions that will lead to affordable energy and declining emissions?**

22 A. No. The settlement combines variations on recommendations of settling parties regarding
23 the operation of Comanche 3, but ultimately leaves the Company some discretion, which makes

1 the emission reductions uncertain. No party suggested this combination of operational
2 restrictions in their pre-settlement testimony.

3 The expected result is unusual to say the least: under the proposed settlement, emissions
4 from Comanche 3 will decline in 2022 and 2023 (when the SCC is used in dispatch), then spike
5 in 2024 (when no operational restrictions are in place), only to then gradually decline starting in
6 2025 (when new operational restrictions begin). None of the settling parties has explained how
7 this is a rational and coherent approach to operating the single largest source of CO₂ emissions in
8 Colorado.

9 Nor, as I will discuss more below, is there any serious discussion of how these
10 operational restrictions would be implemented in practice: what if the company joins an energy
11 imbalance market sooner than the 2024 date assumed by Mr. Landrum? What if there are
12 operational demands for the energy or capacity from Comanche (because it has not yet been
13 replaced) that require higher utilization and emissions than Mr. Landrum assumed in his
14 modeling? What if Comanche 3 continues to experience the same maintenance and reliability
15 issues that have plagued the unit thus far?

16 As I mentioned above, the Conservation Coalition's portfolio delivers lower emissions at
17 lower cost with far greater certainty in emissions reductions than the settlement portfolio's coal
18 actions. No one has provided a rational explanation for preferring the settlement's complicated
19 combination of operational restrictions to options with lower emissions and lower costs (i.e., the
20 Conservation Coalition's portfolio). Thus, the settlement appears to be the result of political
21 horse-trading rather than an evidence-based, rational approach to resource planning that the
22 Commission should require.

23

1 **V. COAL ACTIONS IN THE PROPOSED SETTLEMENT**

2 **A. THE SETTLEMENT HAS HIGHER EMISSIONS AND HIGHER COSTS**
3 **THAN THE CONSERVATION COALITION'S PORTFOLIO**

4 **Q. Can you please summarize your concerns with the emissions and cost implications**
5 **of the Settlement?**

6 A. In response to Mr. Landrum's settlement testimony summarizing his modeling of selected
7 parts of the settlement, Dr. Roumpani conducted new modeling comparing the proposed
8 settlement to the coal actions the Conservation Coalition recommended in its answer and cross-
9 answer testimony. The Conservation Coalition's preferred portfolio includes: Pawnee converts
10 to burn gas by December 31, 2024; Comanche 3 retired by December 31, 2027; and the must-run
11 designations for both Pawnee and Comanche 3 are removed so that the units can be dispatched
12 economically.

13 Dr. Roumpani's settlement testimony shows that under her base case scenario, the
14 Conservation Coalition's preferred portfolio would lead to an additional 4 million tons of CO₂
15 reductions while saving \$206 million in direct customer costs, compared to the settlement.
16 When CO₂ costs and securitization savings are considered in the PVRR, the Conservation
17 Coalition's coal actions would save \$521 million relative to the settlement's coal actions.

18 Moreover, the increased cost of the settlement relative to the Conservation Coalition's
19 portfolio is likely far greater than these figures reflect, because the Company failed to include
20 any estimate of the cost impact from the settlement provision that the Comanche 3 be replaced
21 through a separate, stand-alone solicitation that guarantees the Company own \$626 million in
22 resources to replace Comanche 3.

1 The cost savings from the Conservation Coalition’s portfolio compared to the settlement
2 are so large that up to \$200 million of the savings could be allocated to Pueblo and other coal
3 transitioning communities for workforce and community transition, and customers would still
4 save money (and that does not include the additional savings from being protected from the
5 guaranteed utility ownership provisions in the settlement). The Conservation Coalition’s
6 preferred portfolio would be a win-win-win compared to the settlement: greater (and more
7 certain) emission reductions; lower customer costs; and more money available for workforce and
8 community transition.

9 **Q. How would you recommend the commission address transition through use of some**
10 **of the benefits from saving at least \$206 million by rejecting the settlement and instead**
11 **adopting the coal actions in the Conservation Coalition’s preferred scenario?**

12 A. The settlement delays closure of Comanche 3 to avoid/delay transition rather than address
13 the economic impacts of closing uneconomic coal to save customers money and reduce
14 pollution. When combined with securitization, closing Comanche 3 in 2027 is not only a more
15 certain, but also a more affordable, path for reducing emissions. However, as I have emphasized
16 in both my previous sets of testimony, I strongly support actions and investments to ensure a full
17 and robust transition and stronger cleaner economy in Pueblo and in the other communities
18 transitioning away from some economic reliance on coal.

19 The Commission has a golden opportunity in this regard: instead of taking the settling
20 parties up on a more polluting, more expensive set of resource actions, the Commission can
21 adopt the Conservation Coalition’s portfolio and achieve incremental emission reductions at a
22 lower cost than the settlement. The Commission can then use some of the customer savings
23 from the Conservation Coalition’s portfolio for transition assistance. Specifically, the

1 Commission should include in their Phase I order a requirement that, in addition to the workforce
2 and tax payment commitments required by SB 19-236, Xcel fund the economic transition in the
3 affected coal communities by an amount up to the amount of savings between the Conservation
4 Coalition's proposal and the settlement.

5 This would enable payments and investments up to \$200 million dollars to coal
6 communities in the near-term for economic development and diversification. This would be the
7 biggest investment by a state that I am aware of to address, rather than to avoid and delay, the
8 necessary transition to clean energy. Even if the Commission were to use all of the savings
9 differential, customers would still be better off than under the settlement because 1) customers
10 and the public with benefit from reduced carbon emissions and carbon costs, as well as from the
11 reduction of other pollution and 2) customers would benefit from reduced costs and increased
12 benefits from avoiding the settlement's guarantee of ownership to the company, which is
13 proposed, though not analyzed, in the settlement.

14

15 **B. MUCH OF THE EMISSION REDUCTIONS IN THE SETTLEMENT ARE**
16 **UNCERTAIN AND UNRELIABLE.**

17 **Q. Is there significant uncertainty about the emission reductions that can be expected**
18 **from the proposed settlement?**

19 A. Yes. The emission reductions expected from the proposed settlement are uncertain,
20 because of two aspects of the settlement: the provision that the use of social cost of carbon in
21 dispatch will end as soon as PSCo joins any organized market; and the provision that the
22 capacity factor targets for Comanche 3 are targets, rather than legally enforceable limits.⁵ Taken

⁵ Non-Unanimous Partial Settlement Agreement [hereinafter, *Settlement*] at 16-17 (¶¶ 34-35).

1 together, these provisions mean that the actual emissions under the proposed settlement may be
2 higher than PSCo has projected in its modeling of the settlement.

3 **Q. Why are the emission reductions from using the social cost of carbon in dispatch**
4 **uncertain?**

5 A. PSCo expects the use of the social cost of carbon in dispatch to account for a significant
6 fraction—5 million tons—of the additional emission reductions from the settlement.⁶ Mr.
7 Landrum’s modeling assumes that the social cost of carbon will be used in dispatch from June 1,
8 2022 through December 31, 2023.⁷ But the settlement agreement does not require PSCo to use
9 the social cost of carbon in dispatch between June 1, 2022 and December 31, 2023. Instead,
10 paragraph 34 of the settlement states that PSCo will begin using the SCC in dispatch after it
11 receives approval from FERC to do so, but no earlier than June 1, 2022. The Company will then
12 use the social cost of carbon “until it enters an organized market structure of any kind, including,
13 without limitation, an energy imbalance market.”⁸

14 PSCo had planned to join an energy imbalance market as soon as 2022, and thus there is
15 reason to believe that PSCo could join an imbalance market before 2024, which would result in
16 ending the use of the social cost of carbon in dispatch and thus ending the emission reductions
17 associated with SCC in dispatch. Put simply, the modeling makes an assumption that the SCC
18 will be used in dispatch until 2024, but the actual language of the settlement simply does not
19 obligate PSCo to use the SCC in dispatch until 2024.

⁶ Hearing Exhibit 135 at 12.

⁷ *Id.* at 8.

⁸ Settlement at 16 (¶ 34).

1 **Q. Why are the emission reductions expected from the target capacity factors for**
2 **Comanche 3 uncertain?**

3 A. The proposed settlement also relies heavily on target capacity factors for Comanche 3 to
4 reduce emissions.⁹ But the settlement states that these do not create any legal obligations for
5 PSCo, meaning that the targets are not legally enforceable. In fact, the settlement expressly
6 allows PSCo to exceed the target capacity factors, and the only remedy for PSCo exceeding the
7 targets is for PSCo to explain why it exceeded the targets in a fuel clause docket.¹⁰ Given that
8 there is no penalty for PSCo exceeding the target capacity factors, and that the settlement
9 expressly allows PSCo to exceed the targets, it is possible that PSCo will operate Comanche 3
10 more than the target levels in the settlement, which would result in higher emissions than the
11 Company estimates from the settlement.

12 **Q. Does the Conservation Coalition's preferred portfolio offer both more emission**
13 **reductions, and more certainty about emission reductions, than the proposed settlement?**

14 A. Yes. The pathway recommended by the Conservation Coalition generates more
15 cumulative emission reductions than the settlement and those emission reductions are more
16 certain. That is because under the Conservation Coalition's proposal, a larger percentage of
17 emission reductions come from retiring/converting carbon-emitting units and replacing them
18 with zero or lower-emitting units. Once a unit has been converted or retired and replaced, there
19 is absolute certainty that the unit will not emit anymore; and if the replacement resources are
20 zero-emitting resources, there is certainty about those emission as well. By contrast, a large
21 fraction of the incremental emission reductions from the proposed settlement come from

⁹ Hearing Exhibit 135 at 12-13.

¹⁰ Settlement at 17-18 (¶ 36).

1 operational restrictions that are more uncertain and lead to more uncertain emission estimates
2 than under the Conservation Coalition's portfolio.

3 **Q. Does Dr. Roumpani's modeling show that the Conservation Coalition's preferred**
4 **coal actions will reduce emissions more than the settlement coal actions, even under many**
5 **of the input assumptions the settlement proposes to use in Phase II?**

6 A. Yes. In his settlement testimony, UCA witness Joseph Pereira claims that the settlement
7 might generate more emission reductions than Mr. Landrum calculated, because Mr. Landrum
8 did not model the settlement using the inputs that the settlement proposes to change for Phase II.
9 As I noted above, I agree with Mr. Pereira that none of the settling parties has modeled the
10 settlement using the updated inputs that the settlement proposes to use in Phase II.

11 However, Dr. Roumpani compared the settlement coal action to the Conservation
12 Coalition's coal actions under many (but not all) of the same input assumptions that the
13 settlement proposes to use in Phase II. For example, Dr. Roumpani's modeling uses the social
14 cost of carbon values required by 2021 Colorado legislation and the 2021 NREL costs for
15 generic resources, which the settlement proposes to use in Phase II. And Dr. Roumpani's
16 modeling shows that the Conservation Coalition's portfolio has greater emission reductions and
17 lower costs than the settlement, even using many of the input assumptions recommended by the
18 settlement. Thus, Mr. Pereira's argument does not support adopting the settlement.

19 **Q. Should the Commission dismiss the emission reductions differences between the**
20 **settlement and the Conservation Coalition's preferred portfolio as relatively small**
21 **compared to the total CO₂ reductions under either portfolio?**

22 A. No. The cumulative emissions reductions are significant. The Conservation Coalition's
23 portfolio would reduce CO₂ emissions more than the settlement both in the near-term (before

1 2030) and over the entire analysis period. As I discussed in my answer testimony, reductions in
2 the power sector are both the keystone to emissions reductions through electrification of other
3 sectors, and very often significantly cheaper and more readily available than in other sectors.
4 Furthermore, the emissions reductions that Mr. Landrum has estimated from the settlement
5 should be viewed as uncertain, given the differences between the assumptions Mr. Landrum
6 made about how the settlement will be implemented and what is actually required by the text of
7 the settlement. The incremental CO2 emission reductions from the Conservation Coalition's
8 portfolio relative to the settlement are important and should be considered by the Commission,
9 particularly since these emissions reductions come at a lower cost than the settlement.

10

11 **C. THE SEPARATE SOLICITATION FOR COMANCHE REPLACEMENT**
12 **RESOURCES AND GUARANTEE OF \$626 MILLION IN COMPANY-**
13 **OWNED RESOURCES AND FULL COST RECOVERY WILL RAISE**
14 **CUSTOMER COSTS AND OFFERS NO PUBLIC BENEFITS.**

15 **Q. What is your reaction to the settlement's proposal to acquire resources to replace**
16 **Comanche 3 through a separate, stand-alone solicitation in which the Company is**
17 **guaranteed to own \$626 million of replacement resources?**

18 A. I have serious policy and legal concerns with these provisions. As a policy matter, I am
19 concerned that these provisions will raise the cost and undermine innovation in the transition
20 away from the coal-fired Comanche 3 unit to cleaner energy sources. As a legal matter, I am
21 troubled by the settling parties' lack of any analysis of the cost impacts of these provisions and
22 the conflict with the ownership provisions of SB 19-236.

1 **Q. Why is the Conservation Coalition, which presumably focuses on environmental**
2 **issues, concerned about the provisions regarding the stand-alone Comanche 3 solicitation**
3 **and guaranteeing the Company ownership of \$626 million in replacement resources?**

4 A. As environmental advocates, we recognize that the transition to clean energy has to be
5 accomplished in a way that preserves reliability and affordability. The moment that the energy
6 transition becomes unaffordable for customers is the moment that the transition stops. Thus,
7 anyone who advocates for decarbonizing our electricity system must care that the transition is
8 done affordably. Not only does the settlement cost more and emit more, it ignores costs
9 altogether when it comes to ensuring utility ownership of Comanche 3 replacement power. The
10 company and settling parties ask the Commission to ignore the balancing in SB 19-236 that was
11 designed to protect customers in this transition in favor of enriching PSCo's shareholders.

12 **Q. Do you believe that the Comanche 3 standalone solicitation and guarantee of \$626**
13 **million in Company-owned resources will likely raise customer costs?**

14 A. Yes, I do, for at least two reasons. First, all other things being equal, it is preferable to
15 have a solicitation receive more bids. Having a standalone solicitation will likely result in fewer
16 bids than if the solicitation to replace Comanche 3 were combined with the normal Phase II
17 solicitation in an ERP. Second, guaranteeing \$626 million in Company ownership of
18 replacement resources will eliminate consideration of PPAs for the first \$626 million of
19 resources to replace Comanche 3. Yet in PSCo's last ERP, the cheapest approved bids were
20 PPAs.¹¹

¹¹ See Attachments NL-34 and NL-35.

1 **Q. Are you concerned by the settlement prohibiting the Commission from evaluating**
2 **different levels of Company ownership of resources to replace Comanche 3?**

3 A. Yes. In this proceeding, the settlement proposes that PSCo would present portfolios in
4 Phase II that evaluate levels of utility ownership below 50%.¹² This is designed to enable the
5 Commission to determine what level of utility ownership is reasonable—a finding the
6 Commission is required to make under SB 19-236.¹³ However, the proposed settlement does not
7 contain any provision allowing the Commission to review a level of utility ownership below
8 \$626 million. Thus, the settlement purports to prohibit the Commission from engaging in the
9 kind of review that it will conduct in Phase II of this proceeding of the cost and rate impacts of
10 different levels of utility ownership.

11 **Q. Is there any analysis on the record that suggests it is lawful, in this ERP and CEP,**
12 **for the Commission to approve a solicitation process for an action outside the RAP, that**
13 **conflicts with the ownership balance provisions of the solicitation process in SB 19-236?**

14 A. No.

15 **Q. Do you believe there is a direct connection between the 2035 retirement date for**
16 **Comanche 3 and the guarantee that the Company will own at least \$626 million in**
17 **resources to replace Comanche 3?**

18 A. Yes. The Company is interested in being guaranteed Company-owned resources to
19 replace Comanche 3. If the Company were to agree to retire Comanche 3 during this resource
20 acquisition period (i.e., before 2030), SB 19-236 would apply and would require the Commission

¹² See Attachment 1 to Settlement Agreement at 1 (proposing to model a 40% ownership portfolio and a “midpoint ownership portfolio.”)

¹³ § 40-2-125.5(5)(b), C.R.S.

1 to approve a level of utility ownership that has reasonable cost and rate impacts under § 40-2-
2 125.5(5)(b), C.R.S.

3 The proposed settlement selects a retirement date for Comanche 3 outside of the RAP
4 (i.e., past 2030). The Company appears to believe that this allows them to skirt the requirements
5 of SB 19-236 and be guaranteed \$626 million in Company-owned replacement resources,
6 without any Commission review of whether that level of Company ownership comes at a
7 reasonable cost or benefits customers.

8 These two aspects of the settlement—the retirement date of 2035 for Comanche 3 (a
9 proposed final decision on retirement outside the RAP) and the guarantee of \$626 million in
10 Company-owned resources from a future, unanalyzed solicitation—are linked. Had the
11 Company selected a retirement date for Comanche 3 before 2030, the Company would obviously
12 not have been able to propose a precise dollar amount of guaranteed Company-owned resources,
13 because SB 19-236 would clearly prohibit such a guarantee without Commission review of the
14 reasonableness of that level of utility ownership in Phase II. Delaying retirement of Comanche 3
15 until after 2030 (i.e., outside the resource acquisition period) is being used as a fig-leaf to
16 circumvent the statute’s letter and spirit—which is critical to protect customers and keep costs
17 affordable during the energy transition.

18 **Q. Are there other reasons used to justify a delay in Comanche 3 retirement?**

19 A. Yes. Some of the settling parties appear to rationalize delaying retirement of Comanche 3
20 on the assumption that doing so increases the likelihood that Comanche 3 can be replaced with
21 zero-carbon resources. However, nothing in the records supports such an inference and the
22 significant limitations on competitive bidding in the settlement undermines this rationalization.
23 Under the proposed settlement, at least \$626 million of the resources that replace Comanche 3

1 will not be the best available zero-carbon options on the market, but will be limited to only
2 options that involve Company ownership.

3 Furthermore, there is information on the record that shows Comanche 3 can be replaced
4 in 2027 with mostly zero carbon sources, and far less gas than the company proposes- but the
5 settlement ignores this information.¹⁴

6 **Q. Are you also concerned about the settlement provision guaranteeing recovery of the**
7 **entire undepreciated plant balance at Comanche 3?**

8 A. Yes, I am. Paragraph 33 of the proposed settlement provides that, regardless of the
9 method of cost recovery, the Company will recover the undepreciated balance at Comanche 3 at
10 the time it is retired by 2035 under the proposed settlement. The problem is that the settlement is
11 estimating the undepreciated balance as of the time of retirement, which is more than a decade
12 away, and thus the Company will be spending additional capital at Comanche 3 between now
13 and when it retires. And those future costs have not yet been subject to a prudence review by the
14 Commission.

15 I do not oppose full cost recovery of reasonable and approved costs when a unit is being
16 retired early. However, in the case of early retirement, I believe it is inappropriate to guarantee
17 recovery of future costs before they have been subject to a prudence review, and before the
18 Commission can know if the company prudently managed significant investment asset of the
19 plant to maximum customer benefit throughout its life. Thus, in my opinion, it is inappropriate
20 to guarantee that the entire undepreciated balance should be recovered at the time that Comanche
21 3 retires when that retirement date is proposed to be so far in the future. This is particularly true

¹⁴ See Hearing Exhibit 1411; Hearing Exhibit 1401, Rev. 1 at 21, 37; Hearing Exhibit 1409 at 27-28.

1 given the Commission Staff's March 2021 report that alleges mismanagement and poor
2 operational practices at Comanche 3, which heightens the need for prudence reviews of future
3 capital spending at Comanche 3.

4 I am not saying the Commission should decide now that future capital costs at Comanche
5 3 are not recoverable. My point is that it is premature to decide whether future costs at
6 Comanche 3 should be recovered with a proposed retirement date so far in the future.

7

8 **D. THE SETTLEMENT SHOULD NOT BE CONSTRUED TO PROHIBIT**
9 **THE COMMISSION FROM REEVALUATING THE RETIREMENT**
10 **DATE FOR COMANCHE 3 IN FUTURE ERPS.**

11 **Q. Does the settlement explicitly say that the Commission will not reevaluate the**
12 **retirement date for Comanche 3 in PSCo's next ERP?**

13 A. No. I have been unable to find such a provision in the proposed settlement.

14 **Q. Are you nonetheless concerned that some or all of the settling parties intend the**
15 **settlement to prohibit the Commission from reevaluating the Comanche 3 retirement date**
16 **in the next ERP?**

17 A. Yes. My concern is based on statements that settling parties have made in rebuttal and
18 settlement testimony.¹⁵ In rebuttal testimony, Ms. Jackson expressly says that she believes that
19 the Commission's decision in this ERP as to the Comanche 3 retirement date should not be
20 revisited in the next ERP, regardless of the retirement date that is selected.¹⁶ Ms. Jackson makes
21 a similar point in her settlement testimony.¹⁷ I am concerned that PSCo, and other settling

¹⁵ See Hearing Exhibit 2601 at 8; Hearing Exhibit 2707 at 10, 13.

¹⁶ Hearing Exhibit 121 at 73-74; *see also* Hearing Exhibit 134 at 17-18.

¹⁷ Hearing Exhibit 134 at 17-18.

1 parties, intend the settlement to preclude the Commission from reevaluating the appropriate
2 Comanche 3 retirement date in the next ERP.

3 Ms. Jackson justifies this recommendation based on the need for certainty in transition
4 planning.¹⁸ I agree that certainty can have positive elements for transition planning – though
5 locking-in a unit’s retirement date more than a decade in advance has many drawbacks that the
6 Company and the settling parties do not mention at all in their settlement testimony. That is a
7 reason for the Commission to decide now to retire Comanche 3 within this RAP, as I have
8 suggested (i.e., to retire Comanche 3 prior to 2030). Any retirement date outside the RAP
9 requires reevaluation in future ERPs. Thus, to the extent that parties want certainty regarding the
10 Comanche 3 retirement date, the only way to obtain that certainty is to decide in this ERP to
11 retire the unit prior to the end of the RAP, i.e., prior to 2030.

12 **Q. Should the Commission adopt the coal actions proposed in the Settlement, do you**
13 **believe that the proposed settlement should be interpreted by the Commission as**
14 **prohibiting the Commission from reevaluating the Comanche 3 retirement date in the next**
15 **ERP?**

16 No. Neither PSCo nor any other settling party has explained whether it is lawful for a
17 Commission to attempt to preclude a future Commission from reevaluating a unit’s retirement
18 date under changed circumstances. Setting aside whether it would be lawful, and I don’t believe
19 it is, it would be poor resource planning for the Commission to categorically prohibit
20 reevaluation of a resource planning decision in the next ERP. One of the main objectives of
21 ERPs is to regularly reevaluate planning decisions in light of new information.

¹⁸ Hearing Exhibit 121 at 73-74.

1 **Q. Did some of the settling parties themselves recommend that the Comanche 3**
2 **retirement date be revisited in the next ERP?**

3 A. Yes. Staff and the City of Denver both recommended that with a Commission decision in
4 this ERP to postpone retirement beyond the RAP, the Commission revisit the Comanche 3
5 retirement date in the next ERP.¹⁹

6 **Q. Do you believe it would be a mistake for the Commission to approve a Comanche 3**
7 **retirement date and attempt to preclude reevaluation of that date in the next ERP?**

8 A. Yes. The Commission uses a RAP for a reason. Usually that period of final resource
9 retirement and new resource acquisition is XX years, but SB 19-236 extended that period in this
10 ERP/CEP through 2030 in order to allow for maximizing emissions reductions, while ensuring
11 reliability and affordability within this critical decade for carbon reductions. The Company's
12 proposal to lock-in operation of Comanche 3 until 2035 and not reevaluate that decision in future
13 ERPs is inconsistent with the public interest and the nature of resource planning- particularly as
14 required by the legislature for this ERP/CEP. Making final decisions to operate coal for 15 years
15 is in direct contradiction to the public interest, statutory framework, and Commission rules.

16 Every year that passes, the need for carbon reduction becomes more dire. Every major
17 analysis of how to meet Colorado's greenhouse gas reductions goals shows that the most cost-
18 effective way to meet the statewide carbon reduction goals is to end all coal-fired generation by
19 2030 or sooner.²⁰ Thus, in terms of carbon policy, if the Commission were to approve the 2035
20 retirement date for Comanche 3 in the settlement (which it should not do), it would be disastrous
21 to take the single largest source of CO₂ emissions in Colorado off the table in the next ERP and

¹⁹ Hearing Exhibit 2700 at 57-60; Hearing Exhibit 901 at 19-20.

²⁰ Hearing Exhibit 1400, Rev. 1 at 8-13.

1 attempt to lock-in the retirement date in this ERP, with no reevaluation in the future. Every
2 major analysis of how to meet Colorado's greenhouse gas reduction goals shows all coal must
3 close in this decade or sooner.²¹ Every year that passes, the need for carbon reduction becomes
4 more dire. Given the size, cost, and recent reliability history of the plant, it is also a poor
5 decision from a customer, reliability, and cost perspective.

6 **Q. If parties want certainty on when Comanche 3 will retire, does that weigh in favor of**
7 **retiring Comanche 3 prior to 2030?**

8 A. Yes. Ms. Jackson justifies this recommendation based on the need for certainty in
9 transition planning.²² I agree that certainty can have positive elements for transition planning
10 (though locking-in a unit's retirement date more than a decade in advance has many drawbacks
11 that the Company and the settling parties do not discuss). But this is a reason for the
12 Commission to decide now to retire Comanche 3 within this resource acquisition period (i.e., to
13 retire Comanche 3 prior to 2030). Any retirement date outside the RAP requires re-evaluation in
14 future ERPs. Thus, to the extent that parties want certainty regarding the Comanche 3 retirement
15 date, the only way to obtain that certainty is to decide in this ERP to retire the unit prior to end
16 of the RAP, i.e., prior to 2030.

17 Thus, I believe that as a matter of sound resource planning, economics, and climate
18 policy, the only defensible rationale for providing ironclad certainty on the Comanche 3
19 retirement date is to retire Comanche 3 prior to 2030, such as the December 31, 2027 retirement
20 date the Conservation Coalition recommends.

21

²¹ See Hearing Exhibit 1400, Rev. 1 at 8-13.

²² Hearing Exhibit 121 at 73-74.

1 **E. THE SETTLEMENT’S PROPOSAL FOR PAWNEE WILL COST MORE**
2 **AND EMIT MORE THAN ALTERNATIVES IN THE RECORD.**

3 **Q. What does the proposed settlement specify for the 500 MW Pawnee coal plant?**

4 A. Among other things, the proposed settlement specifies that Pawnee would be converted
5 to burn gas no later than January 1, 2026.

6 **Q. Does the proposed settlement remove the must-run designation that the Company**
7 **uses for Pawnee that prevents Pawnee from being dispatched economically prior to**
8 **conversion?**

9 A. The settlement does not contain a provision that clearly states that the must-run
10 designation will be removed for Pawnee, whereas the settlement contains clear language
11 committing to remove the must-run designation for Comanche 3.²³ Many of the settling parties,
12 including UCA, CEO, and Staff, advocated that the Company remove the must-run designation
13 for Pawnee and economically dispatch Pawnee. But the proposed settlement does not include
14 this.

15 **Q. Would accelerating the date by which Pawnee is converted to gas, and dispatching**
16 **Pawnee economically, reduce costs and emissions relative to the proposed settlement?**

17 A. Yes. The evidence in the record shows that each of these actions would reduce
18 emissions from Pawnee while also reducing customer costs. The Conservation Coalition’s
19 modeling shows this, with respect to accelerating the gas conversion date. Other parties’
20 testimony shows that economic dispatch of Pawnee would reduce emissions and costs.

21 **Q. What evidence is there that converting Pawnee to burn gas in 2024 would reduce**
22 **emissions and costs relative to the settlement’s proposal to convert Pawnee to gas by 2026?**

²³ Settlement at 17 (¶ 35(i)).

1 A. Dr. Maria Roumpani is submitting testimony showing the results of EnCompass
2 modeling. Dr. Roumpani's modeling shows that a portfolio in which Pawnee converts to gas in
3 2024 and is dispatched economically has lower emissions and lower customer costs than the
4 proposed settlement's actions for Pawnee.

5 **Q. What evidence is there that economic dispatch of Pawnee would reduce emissions**
6 **and costs compared to the settlement's proposal to continue to operate Pawnee without**
7 **economic dispatch?**

8 A. Two of the settling parties—CEO and UCA—recommended that Pawnee be dispatched
9 economically beginning in 2025, based on modeling they submitted claiming that there would be
10 cost savings and emission reductions from removing the must-run designation for Pawnee.²⁴

11 **Q. Is the settlement's rejection of economic dispatch for Pawnee directly contrary to**
12 **what CEO, staff, and UCA recommended in their answer testimony?**

13 A. Yes, it is. CEO, Staff, and UCA were very explicit that they believed that the Company
14 should use economic dispatch for Pawnee.

15 **Q. Given that the settlement agreement commits to using economic dispatch for**
16 **Comanche 3, is there any reason not to use economic dispatch for Pawnee?**

17 A. No. PSCo's settlement testimony did not explain why the settlement fails to require the
18 Company to remove the must-run designation for Pawnee prior to gas conversion. In signing the
19 settlement agreement, the Company is acknowledging that it is technically feasible to remove the
20 must-run designation from a large coal-fired unit such as Comanche 3. I have seen no valid
21 reason in the record why the Company could not similarly remove the must-run designation for

²⁴ Hearing Exhibit 500 at 6, 12, 15-17; Hearing Exhibit 1200 at 71.

1 Pawnee and dispatch Pawnee economically. If the settlement somehow intends to remove the
2 must-run designation for Pawnee, that should be made clear in modifications to the settlement,
3 since no such language appears in the settlement.

4 **Q. What do you recommend the Commission do with respect to the settlement**
5 **provisions concerning Pawnee?**

6 A. I recommend that the Commission modify the proposed settlement to require that (1)
7 Pawnee be converted to burn gas no later than December 31, 2024, unless delayed by regulatory
8 approval; that the Company file for necessary approval of this conversion within 60 days of the
9 Phase I decision; and (2) the Company remove the must-run designation for Pawnee no later than
10 June 1, 2022 (which is the date that the Company says is the earliest it can remove the must-run
11 designation for Comanche 3).

12

13 **F. THE PROPOSED SETTLEMENT DOES NOT CONTAIN CLEAR**
14 **LANGUAGE COMMITTING TO REMOVE THE MUST-RUN**
15 **DESIGNATIONS FOR CRAIG AND HAYDEN**

16 **Q. Does the proposed settlement commit to removing the must-run designations for the**
17 **Craig and Hayden coal units and dispatching those units economically?**

18 A. No, it does not. Paragraphs 25-26 of the proposed settlement are devoted to Craig 2 and
19 Hayden 1 and 2. Those paragraphs do not commit to changing the Company's practice of using
20 must-run designations for Craig and Hayden rather than operating the units economically. If the
21 settling parties somehow intended that the must-run designations be removed for all coal units
22 (rather than just for Comanche 3), that intent is not reflected in the express language of the
23 settlement agreement, and thus the settlement should be modified to make this explicit.

1 **Q. If the proposed settlement commits to removing the must-run designation for**
2 **Comanche 3, why does it not also remove the must-run designation for the Company's**
3 **other coal units?**

4 A. I do not know. Neither the Company nor any other witness has addressed this issue,
5 much less provided a compelling reason for removing the must-run designation for one coal unit
6 (Comanche 3) while retaining the must-run designation for the Company's other coal units
7 (Hayden and Pawnee – and to make all reasonable efforts to do so for Craig 2).

8 **Q. Did you recommend removing, or making all reasonable efforts to end the must-run**
9 **designation for Craig and Hayden in your cross-answer testimony?**

10 A. Yes. In Hearing Exhibit 1407, pages 41-42, I recommended that the Company remove
11 the must-run designations for Craig 2 and Hayden 1 and 2.

12 **Q. What do you recommend the Commission do with respect to the settlement**
13 **provisions concerning Craig 2 and Hayden 1 and 2?**

14 A. I recommend the Commission modify the proposed settlement agreement to require the
15 Company to remove the must-run designation for Hayden 1 and 2 and to make all reasonable
16 efforts to do so for Craig 2, unless the Company files a document explaining why it is
17 contractually or otherwise legally unable to remove the must-run designations for Craig 2 and
18 Hayden 1 and 2.

19

20 **VI. PHASE II MODELING ISSUES**

21 **Q. Does the Conservation Coalition object to any of the Phase II modeling inputs in the**
22 **proposed settlement?**

1 A. Yes. Section I of the settlement contains a proposal to change, in Phase II, some of the
2 inputs that PSCo has used in its modeling. Some of the proposed modeling inputs for Phase II
3 are inappropriate and not supported by the record, specifically:

- 4 ○ Paragraph 5, ELCC for stand-alone battery storage;²⁵
- 5 ○ Paragraph 8, Comanche 3 inputs to use in Phase II;²⁶
- 6 ○ Paragraph 22, modeling of new gas resources;²⁷ and
- 7 ○ Paragraph 23, no round-trip modeling.²⁸

8 **Q. Why is the ELCC for stand-alone batteries in the settlement inadequate and**
9 **unjustified?**

10 A. Conservation Coalition witness Derek Stenclik explained in his answer testimony the
11 deficiencies in the ELCC for batteries that the Company has used. Mr. Stenclik is an expert on
12 these issues and I am not, but the settlement makes only a very minor change to the ELCC for
13 standalone batteries, and this change does not come close to what Mr. Stenclik recommends
14 based on the best practices of other utilities and commissions. In addition, many of the settling
15 parties (e.g., COSSA-SEIA, UCA, etc.) advocated for an ELCC for batteries far higher than the
16 ELCC in the proposed settlement.

17 The Commission should modify paragraph 5 to incorporate the recommendations of
18 UCA witness Milligan, Conservation Coalition witness Stenclik, and COSSA-SEIA witness
19 Lucas. Specifically, paragraph 5 should be amended to state that the Company will file a new
20 ELCC study prior to computer modeling of bids in Phase II that corrects the flaws in the ELCC

²⁵ See Hearing Exhibit 1403 at 38-39.

²⁶ See Hearing Exhibit 1402, Rev. 1 at 28-29.

²⁷ See *id.* at 56-60.

²⁸ See Hearing Exhibit 1403 at 41.

1 study identified by witnesses Milligan, Stenclik, and Lucas. The Company will then use the new
2 ELCC values in the modeling it presents in its 120-Day Report in Phase II.

3 **Q. Is the rejection of “round-trip” modeling inconsistent with Mr. Stenclik’s**
4 **recommendations?**

5 A. Yes. Mr. Stenclik’s answer testimony explained why the Company’s modeling process
6 fails to ensure a reliable portfolio. Mr. Stenclik recommended changes to the Company’s
7 modeling process to ensure a more rigorous consideration of reliability. The settlement rejects
8 this approach, which UCA witness Michael Milligan also recommended. The Commission
9 should reject paragraph 23 of the settlement. Again, please note that Mr. Stenclik remains the
10 Conservation Coalition’s witness on this issue, and I am merely summarizing what Mr. Stenclik
11 said in his answer testimony.

12 **Q. Are the input assumptions for Comanche 3 inconsistent with actual, historical data**
13 **on Comanche 3?**

14 A. Yes. Paragraph 8 commits to the use of historical O&M costs for Comanche 3 in Phase
15 II. However, Paragraph 8 does not fix the problem that the Company has used other inputs for
16 Comanche 3 that are inconsistent with the historical values. For example, Tyler Comings
17 pointed out that the availability factor that the Company used for Comanche 3 in its modeling is
18 significantly higher than the average availability factor Comanche 3 has actually achieved over
19 its lifetime.²⁹ The Commission should modify Paragraph 8 to require the Company, in both
20 Phase II and in its next ERP, to use the 10-year average availability factor for Comanche 3 in all

²⁹ Hearing Exhibit 1402, Rev. 1 at 28-29.

1 of its modeling. Please note that Mr. Comings' remains the Conservation Coalition's primary
2 witness on this issue.

3 **Q. Does the proposed settlement direct the Company to model new gas units with a 40-**
4 **year life, stretching far beyond the 2050 date on which the Company hopes to achieve a**
5 **zero-carbon grid?**

6 A. Yes, paragraph 22 of the settlement states that "there will be no modeling restrictions on
7 the lives of new gas-fired assets. . ." This is inconsistent with the recommendations of several
8 settling parties, including UCA, and is inconsistent with the recommendations of non-settling
9 parties as well. Conservation Coalition witness Tyler Comings explained why it is inappropriate
10 for the Company to model new gas-fired units based on the assumption that they would operate
11 for at least 40 years, on the hope that hydrogen technology matures and becomes cost-
12 competitive.³⁰

13 The Commission should modify paragraph 22 to require that the Phase II modeling
14 assume that any new gas units cease operation by, and are depreciated by, January 1, 2050.

15 **Q. Does the Conservation Coalition have other recommendations for Phase II modeling**
16 **that are not addressed by the partial settlement?**

17 A. Yes. The proposed settlement is a partial settlement and does not address all issues in
18 this case. Given that this testimony is responding to the proposed settlement, I am not addressing
19 the Conservation Coalition's recommendations that are not addressed by the settlement.

20

21 VII. OTHER ISSUES WITH THE SETTLEMENT

³⁰ Hearing Exhibit 1402, Rev. 1 at 29-32, 39.

1 **Q. Why does the Conservation Coalition believe that paragraph 60 of the settlement is**
2 **inconsistent with the evidence in this case and should be rejected?**

3 A. Paragraph 60 of the proposed settlement addresses the proposed expansion of the
4 transmission connection between PSCo and PacifiCorp. The Company's direct case had shown
5 that expanding the bi-directional transfer capability between PSCo and PacifiCorp could reduce
6 PSCo's planning reserve margin. The Commission instructed PSCo to conduct modeling of this
7 potential transmission expansion. The Company's supplemental modeling showed that a 400
8 MW expansion of the PSCo-PacifiCorp East transmission link could save more than \$700
9 million in direct customer costs on a net present value basis.³¹

10 Unfortunately, paragraph 60 of the settlement proposes to kick the can down the road on
11 this issue, by deferring consideration of this transmission link until after this ERP. Conservation
12 Coalition witness Derek Stenlik explained that it is critical for the Commission to order PSCo to
13 further evaluate this transmission link now, prior to the decision in Phase II, because this
14 transmission link could save hundreds of millions of dollars by reducing the Company's
15 planning reserve margin and thereby eliminating the need to procure more costly capacity.³² If
16 the Commission waits until the next ERP to evaluate this issue, the Commission will forego the
17 opportunity for cost savings that could have been realized by avoiding the need to acquire some
18 new capacity in this ERP.

19 For these reasons, the Commission should modify paragraph 60 to direct PSCo to submit
20 a more detailed study, prior to preparing the 120-Day Report in Phase II of this proceeding, of
21 the cost and feasibility of a 400 MW expansion in the transmission link between PSCo and

³¹ Hearing Exhibit 119 at 23-24.

³² Hearing Exhibit 1403, Rev. 1 at 25-26.

1 PacifiCorp. The Commission should further instruct PSCo to present in the 120-Day Report at
2 least some portfolios that assume the construction of a 400 MW expansion in the transmission
3 link between PSCo and PacifiCorp. Please note that Derek Stenclik remains the Conservation
4 Coalition's primary witness on this issue.

5 **Q. Does this conclude your testimony?**

6 A. Yes.

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

**IN THE MATTER OF THE
APPLICATION OF PUBLIC SERVICE
COMPANY OF COLORADO FOR
APPROVAL OF ITS 2021 ELECTRIC
RESOURCE PLAN AND CLEAN
ENERGY PLAN**

PROCEEDING NO. 21A-0141E

AFFIDAVIT OF NOAH LONG

I, Noah Long, state that the above Settlement Testimony in Proceeding No. 21A-0141E was prepared by me or under my supervision and control. The testimony is true and correct to the best of my knowledge and belief. I would give the same testimony orally and would present the same attachments if asked under oath before the Commission.



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Signature of Counsel