

Appendix K

Responses to Stakeholder Comments

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Appendix K

Section VI of the 10-Year Report describes stakeholder outreach efforts by each entity. That section describes the numerous opportunities and forums that were and are available for stakeholders to participate in the transmission planning processes. Those forums include Rule 3627 webinars, FERC 890 meetings, CCPG meetings, CCPG task force and subcommittee meetings, and project-specific open houses. In addition to those forums, stakeholders also have the opportunity to provide written comments. Following the Public Service Rule 3627 stakeholder meetings, written comments were provided by the Colorado Office of Consumer Counsel and Western Resource Advocates. Both the written comments and the responses of Public Service are provided in this Appendix K.

Rule 3627 Transmission Planning

Recommendations from the OCC under Rule 3627(g).

The new 2019 laws required that next ERP demonstrate an 80% reduction in CO₂ emissions by 2030. This is the Rule 3627 Study that will be the last one before the next ERP. Thus, this 3627 Report needs to provide the transmission plan that enables PSCo to achieve an 80% CO₂ emission reduction.

The 80% CO₂ emissions reduction may result in closure of many or all of PSCo's remaining coal plants. A rough estimate indicates that approximately 3,000 MW of solar may be required to replace the energy from PSCo's remaining coal plants: Pawnee, Comanche 3, Craig and Hayden. About half of the replacement renewable capacity can utilize transmission that had been used by the coal plants. That is, about 500 MW of renewable capacity can be located on the Pawnee-Missile Site-Smoky Hill line and about 500 MW of replacement renewable capacity can be located on the lines from Comanche. That leaves approximately 1,500 MW to 2,000 MW of solar that may need to be injected at other locations on the PSCo transmission system. The OCC requests that the 3627 Report address how and where the estimated 1,500 MW to 2,000 MW of additional solar can be injected.

The focus is on solar because PSCo has reached the 4.0 GW limit on wind, which the Commission approved in the previous ERP. It is not clear whether PSCo will be allowed to obtain an additional 500 MW or more of wind approved in the next ERP that the Commission rejected in PSCo's previous ERP. Moreover, there are also existing wind contracts that will expire in the next resource acquisition period. Either the existing projects could be repowered or new wind contracts could replace the existing wind capacity at different locations on the transmission system.

The specific transmission alternatives that the OCC requests be studied in the Rule 3627 Report are:

1. Pawnee-Ft. Lupton upgrade from 230 kV to 345 kV.
2. Pawnee-Green Valley 230 kV or 345 kV.
 - a. Switching station just north of Barr Lake that allows any line going in to the switching station to feed any line going out of the switching station. This switching station results in a double-circuit 230 kV connection from Green Valley to Cherokee and will likely result in more injection capability at Green Valley.
3. Missile Site to Spruce 230 kV
 - a. Missile Site to new Sandy Creek Substation east of Spruce/Imboden with connections to either Spruce or Imboden and to Quincy Substation (page 22), or connection via "Potential load Interconnection 3c" on page 25 of PSCo's Amended Rule 3206 Report for 2018.
4. Chambers-Cherokee conversion from 115 kV to 230 kV (Arsenal Route)
5. Chambers-Sandown 230 kV (New) and Leetsdale-Sandown 230 kV conversion from 115 kV
 - a. Sandown-Conoco-Cherokee 230 kV conversion from 115 kV
 - b. Sandown-Mapleton-Cherokee 230 kV from 115 kV
6. Waterton-Arapahoe conversion to 230 kV line from being operated at 115 kV
 - a. Waterton-Arapahoe-Daniels Park switching station with three 230 kV lines coming in from Daniels Park, three lines 230 kV coming in from Waterton, and two 230 kV lines going out to Arapahoe.

- b. Convert the two 230 kV lines from the switching station to Arapahoe from 300 MW capacity to higher capacity (568 MW).
- 7. Shared injection of solar and wind on Rush Creek Gen Tie, on Pawnee-Missile Site-Smoky Hill line and on Comanche-Daniels Park lines.
- 8. 300 MW upgrade to Hayden-Craig-Ault line for approximately \$8.9 million (in 2011), as proposed in the Hermosa Wind project.
<https://www.wapa.gov/transmission/interconnection/Pages/hermosa-west.aspx>

OCC 08-16-19 – PSCo Response

The Colorado Office of Consumer Counsel's ("OCC") requests came in response to the Public Service August 16, 2019, and September 11, 2019, Rule 3627 webinars. As a result, it is not clear what specific projects these suggestions are meant to be alternatives for or otherwise address. Generally, alternatives are presented to meet specific needs identified through a Public Service or CCPG study and the Stakeholder Comment Form was created for just such a purpose. That forum helps the Company identify what is intended by each study request. The OCC's inquiries however were received in a short letter and are shown verbatim. Public Service has provided its responses to these requests below while acknowledging its limited context for the comments including what is being sought and why.

1. The new 2019 laws required that next ERP demonstrate an 80% reduction in CO2 emissions by 2030. This is the Rule 3627 Study that will be the last one before the next ERP. Thus, this 3627 Report needs to provide the transmission plan that enables PSCo to achieve an 80% CO2 emission reduction.

RESPONSE:

Pursuant to C.R.S. § 40-2-125.5, Public Service's next ERP will incorporate a clean energy plan to reduce the carbon dioxide emissions associated with its electricity sales by 80% from 2005 levels by 2030. Public Service is still in the process of developing its Clean Energy Plan and has not yet determined the level or location of generation resources that may need to be added to the system nor retirements that may be pursued to attain these reduced carbon dioxide emissions targets. While this Rule 3627 Transmission Plan presents the planned and conceptual projects that have been developed to date consistent with Public Service's carbon emissions reduction goals, this 10-Year Plan filing offers a snapshot in time as of when it is presented in accordance with Commission requirements.

2. The 80% CO2 emissions reduction may result in closure of many or all of PSCo's remaining coal plants. A rough estimate indicates that approximately 3,000 MW of solar may be required to replace the energy from PSCo's remaining coal plants: Pawnee, Comanche 3, Craig and Hayden. About half of the replacement renewable capacity can utilize transmission that had been used by the coal plants. That is, about 500 MW of renewable capacity can be located on the Pawnee-Missile Site-Smoky Hill line and about 500 MW of replacement renewable capacity can be located on the lines from Comanche. That leaves approximately 1,500 MW to 2,000 MW of solar that may need to be injected at other locations on the PSCo transmission system. The OCC requests that the 3627 Report address how and where the estimated 1,500 MW to 2,000 MW of additional solar can be injected.

RESPONSE:

See response to Comment #1. At this time, given the large number of variables that will be in play over the next year or two, Public Service cannot accurately forecast where the Company's preferred resource portfolio will recommend the addition of solar resources or the level of such resources.

3. The focus is on solar because PSCo has reached the 4.0 GW limit on wind, which the Commission approved in the previous ERP. It is not clear whether PSCo will be allowed to obtain an additional 500 MW or more of wind approved in the next ERP that the Commission rejected in PSCo's previous ERP. Moreover, there also are existing wind contracts that will expire in the next resource acquisition period. Either the existing projects could be repowered or new wind contracts could replace the existing wind capacity at different locations on the transmission system.

RESPONSE:

Again, at this time Public Service has not yet determined what amount and where wind and/or solar generation resources may be added to the system to support its Clean Energy Plan nor has the Commission issued any approval based on the to-be-filed plans. Even though Rule 3627 planning reports are meant to span 10 years, adjustments based on evolving analysis and information are expected, which is why they need to be filed every two (not every 10) years.

4. The specific transmission alternatives that the OCC requests be studied in the Rule 3627 Report are as follows.

- a. Pawnee-Ft. Lupton upgrade from 230 kV to 345 kV.

Response: It is unclear from the request what this is meant to accomplish. Public Service could consider this in the future, if a need is identified.

- b. Pawnee-Green Valley 230 kV or 345 kV.

- i. Switching station just north of Barr Lake that allows any line going in to the switching station to feed any line going out of the switching station. This switching station results in a double-circuit 230 kV connection from Green Valley to Cherokee and will likely result in more injection capability at Green Valley.

Response: This was evaluated through the CCPG Colorado Energy Plan Task Force (CEPTF) and it did not provide significant injection capability. Public Service could consider this in the future if a need is identified.

- c. Missile Site to Spruce 230 kV

- i. Missile Site to new Sandy Creek Substation east of Spruce/Imboden with connections to either Spruce or Imboden and to Quincy Substation (page 22), or connection via "Potential

load Interconnection 3c” on page 25 of PSCo’s Amended Rule 3206 Report for 2018.

Response: Public Service could consider this in the future if a need is identified.

- d. Chambers-Cherokee conversion from 115 kV to 230 kV (Arsenal Route)

Response: This was evaluated through the CEPTF studies and was rejected due to costs. Public Service could consider this in the future if a need is identified.

- e. Chambers-Sandown 230 kV (New) and Leetsdale-Sandown 230 kV conversion from 115 kV

- i. Sandown-Conoco-Cherokee 230 kV conversion from 115 kV
- ii. Sandown-Mapleton-Cherokee 230 kV from 115 kV

Response to both i and ii: These appear to be related to the projects studied through the CEPTF. However, it is unclear from the request what this is meant to accomplish. Public Service could consider this in the future if a need is identified.

- f. Waterton-Arapahoe conversion to 230 kV line from being operated at 115 kV

- i. Waterton-Arapahoe-Daniels Park switching station with three 230 kV lines coming in from Daniels Park, three lines 230 kV coming in from Waterton, and two 230 kV lines going out to Arapahoe.
- ii. Convert the two 230 kV lines from the switching station to Arapahoe from 300 MW capacity to higher capacity (568 MW).

Response to both i and ii: It is unclear from these requests what this is meant to accomplish. Public Service could consider this in the future if a need is identified.

- g. Shared injection of solar and wind on Rush Creek Gen Tie, on Pawnee-Missile Site-Smoky Hill line and on Comanche-Daniels Park lines.

Response: It is unclear from the request what this is meant to accomplish. Public Service could consider this in the future if a need is identified.

- h. 300 MW upgrade to Hayden-Craig-Ault line for approximately \$8.9 million (in 2011), as proposed in the Hermosa Wind project.

Response: It is unclear from the request what this is meant to accomplish. Public Service could consider this in the future if a need is identified.



September 30, 2019

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RE: Western Resource Advocates Comments on Xcel Energy Rule 3627 Plans

After attending the Transmission Planning meeting held at Xcel Energy on August 16, 2019 and pursuant to the requirements of Rule 3627, Western Resource Advocates (WRA) is submitting these recommendations to Xcel Energy on their 10-year Transmission Planning projects. Our comments focus on **the need to consider non-wires alternatives** for capacity or reliability constraints related to load growth and periodic overvoltage in the Denver metropolitan area.

While not all transmission and distribution system needs can be adequately met with non-wires alternatives, areas of load growth with concerns about meeting peak capacity are good candidates for non-wires alternatives which can delay or defer entirely investments in new or upgraded substations. WRA has identified several of these types of projects in the Denver metro area that were included in the Company's plan shared in the August 16 presentation. Although the presentation did not include the level of detail to fully determine the adequacy of a non-wires alternative to meet each specific constraint, the Barker, High Point, Titan, Dove Valley, and Stock Show substations (described on page 27 & 30) all appear to be good candidates for a non-wires alternative study. If the Company is able to delay or defer a substation investment in these places it could provide considerable environmental benefits and cost-savings to customers.

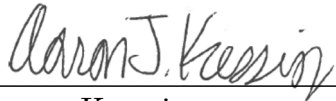
WRA **requests a study into non-wires alternatives** for these planned substations to see if they can be cost-effectively delayed or deferred. We request that technology considered in the non-wires alternative assessment include geo-targeted energy efficiency, demand-side management, demand response, distributed generation, energy storage, and potentially other technologies which can delay or defer the substation investment in a cost effective and technically viable manner.

Additionally, pages 24 and 25 of Xcel's August 16 stakeholder presentation show three alternative network upgrade projects that may be needed to alleviate periodic overvoltage concentrating in the Denver metro area. **WRA recommends that Public Service investigate storage as a potential replacement for or component of a network**

upgrade project. The Company should commission a study to evaluate whether storage can be a viable solution here. This study could be incorporated into the non-wires alternatives study.

Thank you for your consideration of these suggestions. We look forward to reviewing the Company's forthcoming Rule 3627 filing in 2020.

Sincerely,



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PSCo Response

WRA's comments are focused on projected distribution system growth, in some cases in areas that lack distribution infrastructure, and were included in this 3627 Report because of the need for substations to be interconnected to the transmission system. However, the non-wires alternatives technical studies WRA requests pertain more to distribution system planning than transmission planning and are thus outside the scope of a Rule 3627 transmission planning report. In accordance with § 40-2-132, C.R.S. the Commission has recently opened Proceeding No. 19M-0670E to promulgate Distribution System Planning rules including the appropriate evaluation of non-wires alternatives. In addition, unless otherwise directed by the Commission, substations go through a Certificate of Public Convenience and Necessity process, which includes a robust analysis of need and also evaluates alternatives, which may include non-wire alternatives. Therefore, we respectfully decline to perform a distribution planning study of non-wire alternatives at this time as part of this Report.

With respect to the WRA's recommendation for PSCo to investigate storage as a potential replacement for or component of a network upgrade project, PSCo is currently participating in the Energy Storage Work Group (ESWG) under the Colorado Coordinated Planning Group (CCPG) as discussed above. The ESWG will analyze the performance and integration of energy storage and non-wires technologies to the bulk electric system in order to identify potential benefits and challenges related to capacity and reliability constraints. The ESWG will use their analysis to develop recommendations for consideration by the CCPG and participating stakeholders. As a participant in this Work Group, PSCo will take into consideration any non-wires and/or storage alternatives that are identified as part of the study effort once they are available.