
# Filing Receipt

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**SOAH DOCKET NO. 473-21-2606**
**PUC DOCKET NO. 52195**

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|---|---|---|
| **APPLICATION OF EL PASO ELECTRIC COMPANY TO CHANGE RATES** | **§ § §** | **BEFORE THE STATE OFFICE OF ADMINISTRATIVE HEARINGS** |

**FREEPORT-MCMORAN'S RESPONSE TO**
**OFFICE OF PUBLIC UTILITY COUNSEL'S FIRST REQUEST FOR INFORMATION**

Freeport-McMoRan, Inc. ("FMI") files this Response to Office of Public Utility Counsel's (OPUC) First Requests for Information to Freeport-McMoRan, Inc. FMI's response to requests for information shall be made within five (5) working days, making the responses due by November 3, 2021. This response is therefore timely. All parties may treat the answers as if they were filed under oath.

FMI files these responses without agreeing to the relevancy of the information sought and without waiving its right to object at the time of the hearing to the admissibility of information produced herein.

**Respectfully submitted,**

**Freeport-McMoRan, Inc.**
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**ATTORNEYS FOR FREEPORT-MCMORAN, INC.**

## CERTIFICATE OF SERVICE

I certify that a copy of this document was served by electronic mail, on all parties of record in this proceeding on November 3, 2021, in accordance with Order No. 2 in this Docket 52195.

_____
Katherine K. Mudge

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**FREEPORT-MCMORAN'S RESPONSE TO**
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**REQUEST OPUC 1-1:**

Please provide copies of all testimony and associated exhibits or attachments filed by Mr. Jeffry Pollock since 2011 in which he specifically addressed loss studies or loss adjustment factors for fully integrated electric utilities.

**RESPONSE NO. OPUC 1-1:**

Mr. Pollock addressed the utility's line loss study in each of the following matters:

- Rocky Mountain Power Company; Wyoming PSC Docket No. 20000-446-ER-14.
- El Paso Electric Company; Texas PUC Docket No. 44941.

Copies of Mr. Pollock's testimony can be obtained from the relevant regulatory commission websites.

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**REQUEST OPUC 1-2:**

Has Mr. Pollock ever conducted or directed the development of a system loss study for a fully integrated electric utility? If so, please identify how many system loss studies for fully integrated electric utilities Mr. Pollock has performed, identifying any regulatory proceedings in which the results of those loss studies or the resulting loss factors were filed.

**RESPONSE NO. OPUC 1-2:**

No.

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**REQUEST OPUC 1-3:**

With respect to transmission voltage energy loss factors:

(a) Does Mr. Pollock only recommend that transmission voltage energy loss factors be reduced?
(b) Does Mr. Pollock also recommend that distribution primary and secondary voltages be reduced consistent with his proposed reduction in transmission voltage energy loss factors?
(c) If so, please describe Mr. Pollock's recommended adjustment to the distribution voltage loss factors.

**RESPONSE NO. OPUC 1-3:**

Mr. Pollock's testimony recommends adjusting the substation and transmission level energy loss factors to 90% of the corresponding demand loss factors to correct a serious flaw with EPE's class cost-of-service study that effectively ignores the laws of physics. Because this same flaw was not observed for distribution primary and secondary voltages, Mr. Pollock does not address the distribution level energy loss factors.

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**REQUEST OPUC 1-4:**

If Mr. Pollock does not recommend that distribution voltage energy loss factors be reduced consistent with his proposed reduction to the transmission voltage energy loss factors, would that cause modifications to the calculation of the 4CP-A&E and energy cost allocators among customer classes?

**RESPONSE NO. OPUC 1-4:**

To the extent that the transmission energy loss factors are corrected, any allocators relying on those loss factors should be corrected as well. In the absence of any evidence to suggest that the distribution-level energy loss factors are incorrect, it would be inconsistent to make a similar adjustment to those elements. The substation and transmission level energy loss factors were higher than the corresponding demand loss factors. This was not the case for the distribution level energy loss factors.

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**REQUEST OPUC 1-5:**

If Mr. Pollock does not recommend that distribution voltage energy loss factors be reduced consistent with his proposed reduction to the transmission voltage energy loss factors, would that cause more base rate costs to be allocated to distribution voltage-level customers?

**RESPONSE NO. OPUC 1-5:**

Mr. Pollock's recommendation is designed to correct a serious flaw with EPE's class cost-of-service study that effectively ignores the laws of physics. How this adjustment affects the allocation of base rate costs to rate classes will depend on the class revenue allocation adopted by the Commission.

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**REQUEST OPUC 1-6:**

If Mr. Pollock does not recommend that distribution voltage energy loss factors be reduced consistent with his proposed reduction to the transmission voltage energy loss factors, would that cause more fuel and purchased power costs to be allocated to distribution voltage-level customers in fuel reconciliation proceedings?

**RESPONSE NO. OPUC 1-6:**

Mr. Pollock's proposed energy loss factors are for the limited use in determining the allocation of EPE's base revenue requirements among the rate classes. The energy loss factors to be used in a future fuel reconciliation proceeding will depend on whether the Commission adopts Mr. Pollock's recommendation that EPE update and correct its loss study.

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**REQUEST OPUC 1-7:**

Does Mr. Pollock propose that all energy loss factors be adjusted to ensure that losses will continue to equal the difference between net system energy inflows less metered system energy outflows, including company use and other unmetered energy? Please provide a detailed explanation for why Mr. Pollock does or does not recommend adjusting all energy loss factors.

**RESPONSE NO. OPUC 1-7:**

Mr. Pollock is proposing to revise the energy loss factors applicable to the substation and transmission voltage levels for purposes of determining each rate class's base rate cost of service. As explained in Mr. Pollock's testimony, EPE's energy loss factors for these voltages are higher than the corresponding demand loss factors, which not only is contrary to the laws of physics, but is also contrary to standard industry practice, as discussed in EPE's Loss Study.

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**REQUEST OPUC 1-8:**

Are there any reasons that Mr. Pollock is aware of that would cause transmission energy losses to be greater than transmission demand losses? If so, please identify all such reasons.

**RESPONSE NO. OPUC 1-8:**

No. Power losses vary exponentially with electrical current. Electrical current is higher during peak hours than on average throughout the year. Thus, for a given voltage level, the demand losses have to be higher than energy losses.

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**REQUEST OPUC 1-9:**

Please refer to the Direct Testimony and Exhibits of Mr. Pollock at 3:6 – 10. Has Mr. Pollock reviewed the relationships between energy and demand loss adjustment factors applicable to the various service voltage levels for other fully-integrated electric utilities? If so, please provide any analysis or reports indicating the relationships for those loss factors he analyzed.

**RESPONSE NO. OPUC 1-9:**

Mr. Pollock has reviewed the loss factors used in class cost-of-service studies filed by fully-integrated and wires-only utilities in hundreds of rate cases over the past 40+ years that Mr. Pollock has been in practice. Please see Attachment FMI-OPUC-1-9, which is an analysis Mr. Pollock prepared in the 2014 Rocky Mountain Power Company rate case referenced in response to OPUC 1-1.

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# Loss Factors Applicable to Transmission/SubTransmission Service

| Line | Utility | <69 KV | 69 kV | 115 - 138 kV | 230 kV |
|---|---|---|---|---|---|
| | | (1) | (2) | (3) | (4) |
| | **Southwestern Public Service Company (Tx/NM)** | | | | |
| 1 | Energy | | 3.2914% | 2.5158% | |
| 2 | Demand | | 3.5392% | 2.6174% | |
| | **Southwestern Electric Power Company (Ark/Ok/La/Tx)** | | | | |
| 3 | Energy | | 2.2192% | 1.1337% | |
| 4 | Demand | | 3.3902% | 1.8610% | |
| | **Entergy Texas, Inc.** | | | | |
| 5 | Energy | | 1.9753% | | 0.4608% |
| 6 | Demand | | 1.3438% | | 0.3190% |
| | **Georgia Power Company** | | | | |
| 7 | Energy | | | 3.6755% | |
| 8 | Demand | 6.3362% | | 4.5034% | 3.8798% |
| | **Alabama Power Company (Al)** | | | | |
| 9 | Energy | | 2.6630% | 2.1858% | |
| 10 | Demand | | 3.5245% | 2.8945% | |
| | **Niagara Mohawk (NY)** | | | | |
| 11 | Energy | 4.6627% | 2.1100% | | |
| 12 | Demand | 4.6627% | 2.1100% | | |
| | **Florida Power & Light Company (Fl)** | | | | |
| 13 | Energy | | 2.3130% | | |
| 14 | Demand | | 2.8843% | | |
| | **Tampa Electric Company (Fl)** | | | | |
| 15 | Energy | | 1.2889% | | |
| 16 | Demand | | 2.2742% | | |
| | **Northern Indiana Public Service Company (In)** | | | | |
| 17 | Energy | | 1.3011% | | |
| 18 | Demand | | 2.2751% | | |
| | **Mid American Energy Company (Ia)** | | | | |
| 19 | Energy | | 2.2100% | | |
| 20 | Demand | | 3.0100% | | |
| | **ERCOT (2013)** | | | | |
| 21 | Energy | | 2.1130% | | |
| 22 | Demand | | 2.1516% | | |

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**REQUEST OPUC 1-10:**

Please refer to the Direct Testimony and Exhibits of Mr. Pollock at 3:6 – 10. Does Mr. Pollock have any reports, analyses, or other supporting documentation that the relationships between demand and energy loss factors typically remains constant across all voltage levels? If so, please provide any such reports, analyses, or other supporting documentation.

**RESPONSE NO. OPUC 1-10:**

Mr. Pollock is not asserting that the relationship between demand and energy loss factors typically remains constant across all voltage levels. As discussed on page 14, energy loss factor at primary voltage is 82% of the corresponding demand loss factor, while at secondary voltage, the energy loss factor is 96% of the corresponding demand loss factor. Further, as discussed in EPE's Loss Study, the energy losses are dependent on load factor and the Hoebel Coefficient. The latter is always less than 1.0. Based on the latter, it is clear that energy losses are always less than peak demand losses.

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**REQUEST OPUC 1-11:**

Please refer to the Direct Testimony and Exhibits of Mr. Pollock at 2:21 – 26. Is it Mr. Pollock's testimony that a loss study must be flawed if it produces energy loss factors higher than demand loss factors? If so, please provide any reports, analyses, or other documentation that supports that testimony.

**RESPONSE NO. OPUC 1-11:**

Yes. The reasons supporting Mr. Pollock's opinion are provided in Mr. Pollock's testimony at pages 13 and 21 and EPE's Loss Study, as provided in Schedule O-6.3.

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**REQUEST OPUC 1-12:**

Please refer to the Direct Testimony and Exhibits of Mr. Pollock at 2:21 – 26. Please provide any authoritative articles, studies, reports, or other documents that state that energy loss factors cannot exceed demand loss factors for an electric utility.

**RESPONSE NO. OPUC 1-12:**

Besides the laws of physics, the discussion of the Hoebel Coefficient in EPE's Loss Study and Mr. Pollock's experience provide ample documentation that peak demand losses are higher than average energy losses.

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**REQUEST OPUC 1-13:**

Please provide a detailed list of the factors that Mr. Pollock believes can significantly affect losses on an electric utility system.

**RESPONSE NO. OPUC 1-13:**

Ignoring energy losses due to theft, metering and accounting errors, losses are a function of the characteristics of the transmission lines and transformation equipment as well as how these facilities are loaded during both peak conditions and throughout the year. While the majority of losses vary directly with load, some losses are constant.

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