Exhibit No.:	
Issue:	Energy Price Forecasting; Fuel, Purchased Power and Off-system Sales Normalization; FAC Requirements
Witness:	Hsin Foo
Type of Exhibit:	Rebuttal Testimony
Sponsoring Party:	Evergy Missouri West
Case No.:	ER-2024-0189
Date Testimony Prepared:	August 6, 2024

MISSOURI PUBLIC SERVICE COMMISSION

CASE NOS.: ER-2024-0189

REBUTTAL TESTIMONY

OF

HSIN FOO

ON BEHALF OF

EVERGY MISSOURI WEST

Kansas City, Missouri
August 2024

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DIRECT TESTIMONY

OF

HSIN FOO

Case No. ER-2024-0189

Q: Please state your name and business address.

A: My name is Hsin Foo. My business address is 1200 Main Street, Kansas City, Missouri 64105.

Q: Are you the same Hsin Foo who submitted direct testimony on February 2, 2024?

A: Yes.

Q: On whose behalf are you testifying?

A: I am testifying on behalf of Evergy Missouri West, Inc. d/b/a Evergy Missouri West ("EMW" or the "Company").

Q: What is the purpose of your testimony?

A: The purpose of my testimony is to address portions of the fuel and purchased power expense calculation performed by Staff witness Mr. Brodrick Niemeier. Specifically, I will address the following:

- market prices developed by Staff witness, Mr. Justin Tevie, that were used in Staff's production cost model,
- the node used to represent the settlement location of the Cimarron Bend III ("CB3") wind farm in Staff's production cost model,

- the node used to represent the settlement location of the CB3 wind farm, as it relates to Nucor Steel Sedalia, LLC ("NUCOR") and the Renewable Energy Rider ("RER") program,
- the omission of Dogwood Energy Facility ("Dogwood") in Staff's production cost model,
- the Purchase Power Agreement ("PPA") cost for the Gray County wind farm ("Gray County") and Ensign wind farm ("Ensign") that were used in Staff's production cost model,
- Staff's calculation as it relates to NUCOR and the RER program in their production cost model,
- the inclusion of the Black Hills Power ("Black Hills") agreement in the Firm Off-System Sales ("OSS") calculation performed by Staff witness, Mr. Matthew Young,
- and the Direct testimony of Office of the Public Counsel ("OPC") witness, Angela Shaben, on the Auction Revenue Right ("ARR") and Transmission Congestion Right ("TCR") adjustments.

I. MARKET PRICE MODEL INPUTS

Q: What are market prices and how do they impact variable fuel and purchase power expense?

A: Market prices, also known as Locational Marginal Price ("LMP"), is the cost of supplying the next unit of electricity to a specific location on a transmission network. It is the market clearing price at which energy is bought and sold at each node, or Settlement Location ("SL"). In simplified terms, a generator sells power and receives revenues determined by the LMP at a generator SL. Power, whose cost is determined by the LMP at the load SL, is then purchased to serve the required load.

Q: What are the main drivers of market prices that affect the Company?

A: In Southwest Power Pool ("SPP"), the regional transmission organization in which the Company is located, market prices are largely determined by one of three resources: wind, coal, or natural gas. Wind generation is typically the marginal resource during off-peak hours when demand is low, while coal or gas is usually the marginal resource during on-peak hours. When demand is high during on-peak hours, the Company will purchase additional power from the market to meet its required load that is not met by its available resource generation assets. During these high load periods, the purchase cost to serve load is determined by the LMP which is highly correlated to natural gas prices.

Q: What prices did Staff use for natural gas in their production cost model?

A: Staff used the actual monthly gas price experienced by each of the Company's generating stations for 2023.

Q: What market prices did Staff use in their production cost model?

A: Staff used a normalized set of market prices based on three years of data ending December 2023.

Q: Do you agree with the market prices and natural gas prices that Staff used in their production cost model? Why?

A: No, I do not agree with the market prices and natural gas prices that Staff used. Schedule HYF-1 (**Confidential**) shows the average monthly Day Ahead LMPs at the SL that is used to calculate the cost of purchases to serve the Company's required load. In addition to February 2021 pricing due to Winter Storm Uri, and January 2024 pricing due to Winter Storm Heather, the LMPs for 2022 were abnormally high due to high natural gas prices during that same period. Including high LMPs from 2022, to establish a normalized set of market prices, will unreasonably distort the resulting market prices by overstating the purchase price in the production cost model. Moreover, since natural gas prices and market prices are highly correlated, using natural gas prices from a lower priced timeframe, but market pricing from a different and higher priced period in Staff's production cost model is inconsistent and erroneous. Schedule HYF-2 shows the monthly natural gas spot price from January 2021 to June 2024 at Henry Hub, a major natural gas pricing hub that is considered the United States' benchmark for natural gas prices. The 2023 natural gas prices used in Staff's production cost model were lower than prices in 2021 and 2022. Using low natural gas prices with normalized power prices that are uncontrollably high is incompatible and inappropriate to calculate the fuel and purchase power expense as the mismatch between the two sets of assumptions will result in overstated costs. The Company strongly recommends that Staff's production cost model use market power prices and natural gas prices from the same time period and exclude pricing from 2022.

II. CIMARRON BEND III WIND FARM

Q: The Company has several Purchase Power Agreements ("PPA") with wind farms. How do these contribute to the variable fuel and purchase power expense calculation?

A: Typically, the Company purchases energy at a cost specified by the PPA from the wind farm, offers the energy to SPP, and collects revenue that is determined by the LMP at the generator node associated with the wind farm. The costs and revenues associated with these transactions contribute to the fuel and purchase power expense calculation.

Q: Are there any wind farms that settle differently? Please explain.

A: Yes, the PPA for CB3 is structured differently. The agreement for CB3 stipulates that **[redacted]**.

Q: Why is CB3's PPA structured differently? Is it better than other typical PPAs?

A: The PPA for CB3 is structured such that the **[redacted]**. CB3's agreement is very favorable to the Company's customers and most wind developers have moved away from offering similarly structured PPAs.

Q: Are the revenues from CB3 using the appropriate Settlement Location in Staff's fuel and purchase power expense calculation?

A: No, the revenues in Staff's fuel and purchase power expense calculations are not using the correct SL to calculate revenue from CB3. In Staff witness Justin Tevie's workpaper, "Shaped_Prices_2_Evergy_EO-2024-0189_Jun62024.xlsx," the normalized market prices are based on the **[redacted]** node. The LMP at the **[redacted]** node should be used for CB3. Moreover, in Staff witness Brodrick Niemeier's workpaper, "ER-2024-0189 EMW Direct - Fuel Model Results – Confidential.xlsx," the LMPs used to calculate revenue from CB3 do not match the values supplied by Mr. Tevie.

Q: Do these different settlement locations impact other areas of the revenue requirement?

A: Yes. The change in settlement location for CB3 impacts the NUCOR and RER calculation for EMW.

Q: Are the revenues from CB3 using the appropriate SL in the calculations relating to NUCOR costs?

A: No, the revenues from CB3 as it relates to NUCOR are not using the correct SL. Staff used the **[redacted]** SL and used a completely different set of values in their production cost model. The LMP at the **[redacted]** node should be used instead.

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Q: Are the revenues from CB3 using the appropriate SL in the calculations relating to the RER program?

A: No, the revenues from CB3, as it relates to the RER program, are not using the correct SL. Staff used the **[redacted]** SL and used a completely different set of values in their production cost model. The LMP at the **[redacted]** node should be used instead.

III. NUCOR AND THE RENEWABLE ENERGY RIDER

Q: What is NUCOR?

A: Nucor Steel Sedalia, LLC is a non-residential customer of EMW.

Q: What are the adjustments relating to NUCOR?

A: The Stipulation and Agreement from Case No. EO-2019-0244 requires the Company to identify and isolate costs necessary to provide service to NUCOR, and remove them from the Fuel Adjustment Clause ("FAC"). These include PPA costs identifiable to NUCOR and the net effect of the sale of PPA purchases for NUCOR and its load.

Q: What are the PPA revenue and costs identifiable to NUCOR?

A: **[redacted]** of the Cimarron Bend III wind farm serves NUCOR, hence the PPA costs and the revenue from the sales of that **[redacted]** of CB3 are attributable to NUCOR.

Q: Are the revenue and costs relating to NUCOR appropriately reflected in Staff's fuel and purchase power expense calculation?

A: No. The load amount, revenue, and costs relating to NUCOR are included in Staff's production cost model. However, as addressed earlier, the incorrect node is being used to represent the SL of CB3.

Q: Are there any other adjustments recommended by Staff relating to NUCOR?

A: Yes, Staff recommends that the revenue requirement be reduced to cover a revenue deficit of approximately $4,909,000.

Q: Do you agree?

A: No. Staff witness Justin Tevie's testimony uses a Purchased Power amount of approximately **[redacted]** to determine the $4,909,000 of under-recovery. That amount is calculated using the incorrect node for CB3 as described above. That amount is also based on 2023 historical values of NUCOR load, CB3 generation, and LMP used to calculate costs and revenues. This is inconsistent with the amounts that are being used in Staff's production cost model that calculates fuel and purchased power expense. In Staff's production cost model, a normalized wind profile is used for CB3, a normalized load amount of **[redacted]** MWh is used to represent NUCOR's load, and a 3-year average LMP price is used to calculate revenues. The Company recommends that any adjustments relating to NUCOR use consistent values across different evaluations.

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Q: What is the Renewable Energy Rider program?

A: The Renewable Energy Rider program allows non-residential EMW customers to purchase renewable energy from renewable resources that the Company contracts with.

Q: What are the revenues and costs associated with the RER program?

A: **[redacted]** of the CB3 wind farm is attributable to the RER, hence the PPA costs and the revenue from the sales of that **[redacted]** of CB3 should be identified to be excluded from the FAC.

Q: Are the revenue and costs relating to RER appropriately reflected in Staff's fuel and purchase power expense calculation?

A: No. The revenue and costs relating to RER are included in Staff's production cost model. However, as addressed earlier, the incorrect node is being used to represent the settlement location of CB3.

Q: What is the impact of using the incorrect node to represent CB3?

A: Staff's production cost model calculates an amount of **[redacted]** related to NUCOR and RER. Using the correct SL for CB3 results in a cost of **[redacted]**. Staff is grossly overstating the revenues associated with NUCOR and RER by using the wrong node to represent LMPs for CB3.

IV. <u>DOGWOOD ENERGY FACILITY</u>

Q: What is Dogwood Energy Facility?

A: Dogwood is a combined cycle natural gas generating unit located in Cass County, Missouri, with a capacity of 675 MW. The Company signed an asset purchase agreement for a 22.2% ownership share of Dogwood that closed on April 25th, 2024.

Q: Is Dogwood appropriately represented in Staff's fuel and purchase power expense calculation?

A: No, Dogwood is not included in Staff's production cost model, and the costs associated with the Dogwood generating station are omitted in their fuel and purchase power expense calculation. Based on workpapers received from Commission Staff, Staff intends to include the impact of the Dogwood's fuel and purchased power in their true-up model. The Company agrees that Staff should include the 22.2% ownership interest of Dogwood in their production cost model to correctly represent the Company's portfolio of resources.

V. <u>WIND FARM PPA COSTS</u>

Q: What is the PPA cost for the Gray County wind farm?

A: The energy payment rate in the PPA for Gray County, upon completion of repowering, is **[redacted]** for the 12-month period ending November 30th, 2024. The energy payment rate escalates at approximately **[redacted]** for each following 12-month period.

Q: Is Staff's fuel and purchase power expense calculation using the appropriate PPA cost for Gray County?

A: No, Staff's production model is not using the correct energy payment rate to calculate fuel and purchase power expense. Staff is using **[redacted]** in their model. The PPA cost for Gray County should be **[redacted]**.

Q: What PPA cost will the Company's fuel and purchase power expense calculation be using for Gray County at True Up?

A: The Company will be using the PPA cost of **[redacted]** for Gray County at True Up.

Q: What is the PPA cost for the Ensign wind farm?

A: The energy payment rate in the PPA for Ensign, upon completion of repowering, is **[redacted]**.

Q: Is Staff's fuel and purchase power expense calculation using the appropriate PPA cost for Ensign?

A: No, Staff's production model is not using the correct energy payment rate to calculate fuel and purchase power expense. Staff is using **[redacted]** in their model. The PPA cost for Ensign should be **[redacted]**.

Q: What PPA cost will the Company's fuel and purchase power expense calculation be using for Ensign at True Up?

A: The Company will be using the PPA cost of **[redacted]** for the Ensign at True Up.

VI. BLACK HILLS POWER

Q: What is the Black Hills Power agreement?

A: The Company had an agreement to supply capacity and energy to Black Hills Power. Black Hills pays a demand charge for the megawatt capacity commitment from the Company, and an energy charge for the cost of delivered energy.

Q: Has there been any changes to the Black Hills Power agreement in the True Up period?

A: Yes, the Black Hills agreement ended in December 2023. The Company does not have any other agreements with Black Hills.

Q: Are the revenues and costs associated with Black Hills correctly represented in Staff's calculation of Off-System Sales?

A: No, they are not. The revenues and costs associated with the Black Hills agreement are included in Staff's calculation of Off-System Sales. Those revenues and costs should not and will not be included in the Company's fuel and purchased power expense calculation at True Up.

VII. TRANSMISSION CONGESTION RIGHTS

Q: OPC recommends an amount related to TCR/ARR revenues be included in the Company's revenue requirement and FAC base factor. Do you agree?

A: Yes. The Company agrees with OPC's recommendation to include ARR and TCR revenues. The Company will include an appropriate amount for ARR and TCR revenues based on historical ARR and TCR activity, and congestion costs resulting from the production cost model at True Up.

Q: OPC recommends updating the FAC monthly reporting requirements to include LMP by node. Do you agree?

A: No. Reporting the hourly Day-Ahead LMP by node would require a voluminous amount of data exchange each month. The hourly Day-Ahead LMP for every SL is publicly available on the SPP Marketplace Portal. The Company recommends obtaining the hourly Day-Ahead LMPs directly from SPP.

Q: OPC recommends updating the FAC monthly reporting requirements to include ARR/TCR revenues and losses by node. Do you agree?

A: Revenues and losses for ARRs and TCRs are calculated based on a specific path between a source and a sink. A node can represent a source or sink, but it is not possible to report ARR/TCR revenues and loses by node. We will continue to have dialogue with OPC and other parties to gain an understanding of the information requested versus what is available.

Q: OPC recommends updating the FAC monthly reporting requirements to include a reconciliation or cost benefit analysis between ARR/TCR node revenue and/or losses by each wind PPA. Do you agree?

A: As stated above, ARR/TCR revenues and losses are calculated by path and not by node. The Company can provide ARR/TCR revenues and the associated congestion costs incurred between a wind farm, or source, and the relevant Company load node, or sink. We will continue to have dialogue with OPC and other parties to evaluate the impact of ARR/TCR in assessing the overall customer benefits of PPAs.

Q: OPC recommends updating the FAC monthly reporting requirements to report ARR/TCR revenues and/or losses in specifically designated ARR/TCR subaccounts. Do you agree?

A: The ARR and TCR charge types are already identified in the Company's general ledger by the use of resource code, and thus do not require additional accounts to distinguish them.

Q: Are OPC's suggested reporting requirements reasonable?

A: No. It appears that Ms. Schaben's requested reporting is intended to open the door for a post-hoc prudence review of the Company's wind PPAs by seeking information which may be required for evaluation of their cost effectiveness. Piecemeal additional reporting is not appropriate. Depending on whether market prices are high or low at a given point in time, the wind PPAs will look either favorable or unfavorable at that point in time. Retrospective assessment of generation investment decisions with the benefit of 20/20 hindsight is not likely to produce actionable information and is contrary to the concept of evaluating investment decisions based on the information that was available at the time the decision was made.

Q: Does this conclude your testimony?

A: Yes, it does.

BEFORE THE PUBLIC SERVICE COMMISSION
OF THE STATE OF MISSOURI

In the Matter of Evergy Missouri West, Inc. d/b/a Evergy Missouri West's Request for Authority to Implement A General Rate Increase for Electric Service	))))	Case No. ER-2024-0189

AFFIDAVIT OF HSIN FOO

STATE OF MISSOURI)
) ss
COUNTY OF JACKSON)

Hsin Foo, being first duly sworn on his oath, states:

1. My name is Hsin Foo. I work in Kansas City, Missouri, and I am employed by Evergy Metro, Inc. as Lead Quantitative Analyst-Generation Resources.

2. Attached hereto and made a part hereof for all purposes is my Rebuttal Testimony on behalf of Evergy Missouri West consisting of fourteen (14) pages, having been prepared in written form for introduction into evidence in the above-captioned docket.

3. I have knowledge of the matters set forth therein. I hereby swear and affirm that my answers contained in the attached testimony to the questions therein propounded, including any attachments thereto, are true and accurate to the best of my knowledge, information and belief.

Hsin Foo

Subscribed and sworn before me this 6th day of August 2024.

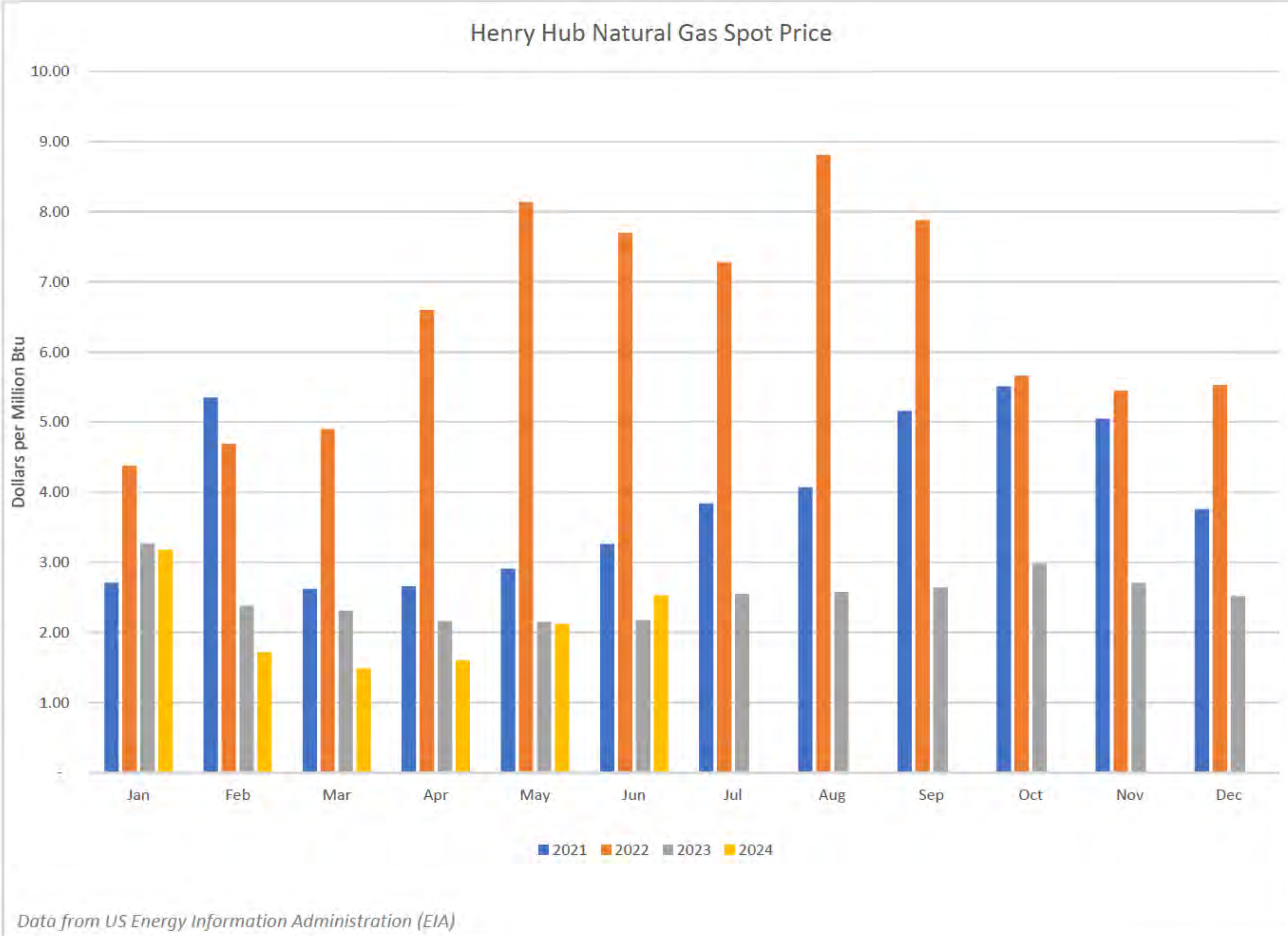
Notary Public

My commission expires: 4/26/2025

ANTHONY R. WESTENKIRCHNER
NOTARY PUBLIC - NOTARY SEAL
STATE OF MISSOURI
MY COMMISSION EXPIRES APRIL 26, 2025
PLATTE COUNTY
COMMISSION #17279952

SCHEDULE HYF-1
CONTAINS CONFIDENTIAL
INFORMATION
NOT AVAILABLE TO THE PUBLIC.

ORIGINAL FILED UNDER SEAL.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7.00
6.00
5.00
4.00
3.00
2.00
1.00
-
Dollars per Million Btu
Jan
Feb
Mar
Apr
May
Jun
Jul
Aug
Sep
Oct
Nov
Dec
2021
2022
2023
2024
Data from US Energy Information Administration (EIA)

Evergy Metro, Inc. d/b/a Evergy Missouri Metro and
Evergy Missouri West, Inc. d/b/a Evergy Missouri West

Docket No.: ER-2024-0189
Date: August 6, 2024

CONFIDENTIAL INFORMATION

The following information is provided to the Missouri Public Service Commission under CONFIDENTIAL SEAL:

Document/Page	Reason for Confidentiality from List Below
Foo Rebuttal, p.5, lns. 12-16; 8-20	4, and 6
Foo Rebuttal, p. 6, lns. 6-7; 18-19	4 and 6
Foo Rebuttal, p. 7, lns. 4; 6; 17; 18	4 and 6
Foo Rebuttal, p. 8, ln. 11; 17	4 and 6
Foo Rebuttal, p. 9, lns. 6-7; 15; 17	4 and 6
Foo Rebuttal, p. 10, lns. 15-16; 21-22	4 and 6
Foo Rebuttal, p. 11, lns. 3; 7; 11-12; 15	4 and 6
HYF-1	3, 4, and 6

Rationale for the “confidential” designation pursuant to 20 CSR 4240-2.135 is documented below:

1. Customer-specific information;
2. Employee-sensitive personnel information;
3. Marketing analysis or other market-specific information relating to services offered in competition with others;
4. Marketing analysis or other market-specific information relating to goods or services purchased or acquired for use by a company in providing services to customers;
5. Reports, work papers, or other documentation related to work produced by internal or external auditors, consultants, or attorneys, except that total amounts billed by each external auditor, consultant, or attorney for services related to general rate proceedings shall always be public;
6. Strategies employed, to be employed, or under consideration in contract negotiations;
7. Relating to the security of a company's facilities; or
8. Concerning trade secrets, as defined in section 417.453, RSMo.
9. Other (specify) ____.

Should any party challenge the Company’s assertion of confidentiality with respect to the above information, the Company reserves the right to supplement the rationale contained herein with additional factual or legal information.