

# Exhibit No. 232

Commission Staff – Exhibit 232  
Shawn E. Lange  
True-Up Direct Testimony  
File Nos. ER-2021-0240 & GR-2021-0241

*Exhibit No.:*  
*Issue(s):* Variable Fuel Expense  
*Witness:* Shawn E. Lange, PE  
*Sponsoring Party:* MoPSC Staff  
*Type of Exhibit:* True-up Direct Testimony  
*Case No.:* ER-2021-0240  
*Date Testimony Prepared:* November 5, 2021

**MISSOURI PUBLIC SERVICE COMMISSION**

**INDUSTRY ANALYSIS DIVISION**

**ENGINEERING ANALYSIS DEPARTMENT**

**TRUE-UP DIRECT TESTIMONY**

**OF**

**SHAWN E. LANGE, PE**

**UNION ELECTRIC COMPANY  
d/b/a Ameren Missouri**

**CASE NO. ER-2021-0240**

*Jefferson City, Missouri  
November 2021*

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**TRUE-UP DIRECT TESTIMONY**

**OF**

**SHAWN E. LANGE, PE**

**UNION ELECTRIC COMPANY  
d/b/a Ameren Missouri**

**CASE NO. ER-2021-0240**

Q. Please state your name and business address.

A. My name is Shawn E. Lange and my business address is Missouri Public Service Commission, P.O. Box 360, Jefferson City, MO 65102.

Q. Are you the same Shawn E. Lange who contributed to Staff's Cost of Service Report and rebuttal filed in this case?

A. Yes, I am.

Q. What is the purpose of your True-up direct testimony?

A. The purpose of my True-up direct testimony is to provide the variable fuel and purchase power expense incorporating all known and measurable changes as of September 30, 2021 as well as discuss any revisions from direct.

**Variable Fuel Expense**

Q. How have you revised your production model for true-up?

A. I have updated the time periods reflected in certain model assumptions to change the ending period from the update cut off to the true-up cut off. I have also made certain modifications to the modeling associated with the High Prairie wind farm to account for bat mitigation and Atchison Wind farm to account for the capacity of plant in-service.

Q. What changes were made to the modeling associated with High Prairie?

True-up Direct Testimony of  
Shawn E. Lange, PE

1 A. In direct Staff modeled High Prairie based on the 5 m/s cut in speed  
2 generation shape<sup>1</sup>. <sup>\*\*</sup> [REDACTED]

3 [REDACTED]  
4 [REDACTED] <sup>\*\*</sup> Staff witness Claire M. Eubanks  
5 states:

6 Ameren Missouri is purchasing and installing the deterrent system for 15 of  
7 the turbines at High Prairie to study its effectiveness during the 2022 bat season  
8 (April 1, 2022 – October 31, 2022). Ameren Missouri is also preparing a request  
9 for proposal for an active curtailment system for use during the 2022 bat season.  
10 Finally, model-based curtailment requires time to study weather and bat activity.  
11 Ameren Missouri does not expect to implement this approach until the 2023 bat  
12 season.<sup>3</sup>

13 Ameren witness Ajay Aurora stated “We likely will not know the efficacy of these  
14 systems until sometime in 2022”<sup>4</sup>. Therefore Staff is adjusting the generation shape to  
15 account for the reduction in nighttime generation during the period of April 1 through  
16 October 31.

17 Q. What changes were made to the modeling associated with Atchison wind  
18 farm?

19 A. At direct Staff did not have sufficient information to deem the plant in-  
20 service but reasonably expected additional information from Ameren Missouri to be

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<sup>1</sup> Generation shape in this context is the modeled hourly generation of a developing wind site. This shape is typically developed using specialized software that takes into account historical wind speeds expected for the wind farm site, site layout, turbine placement, hub height, turbine capacity as well as other pertinent information.

<sup>2</sup> Ameren Response to Staff DR 714.1

<sup>3</sup> Claire M. Eubanks Rebuttal Pg. 5 lines 12-17.

<sup>4</sup> Ajay Aurora Rebuttal Pg. 16 lines 2-3.

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Shawn E. Lange, PE

1 forthcoming; therefore, Staff recommended the wind farms be included in the development  
2 of revenue requirement. In my rebuttal testimony, I recommended the Commission find  
3 294.4 MW of wind capacity at Atchison met the in-service criteria. Additionally, Staff  
4 Witness J Luebbert recommended that High Prairie met the in-service Criteria. I have  
5 adjusted the capacity of Atchison from the modeled 299 MW in direct to 294.4 MW in  
6 True-up Direct and made no changes to the capacity of High Prairie.

7 Q. What is the value of the variable fuel and purchase power expense?

8 A. The Staff calculates the variable fuel and purchased power expense  
9 for Ameren Missouri for known and measureable changes through September 30, 2021,  
10 to be \$356,857,756.

11 Q. What is the true up value of the physical bilateral margins, financial  
12 swaps, and real time deviation?

13 A. The adjustments for physical bilateral margins, financial swaps, and  
14 real time deviation are \*\* [REDACTED] \*\*

15 Q. What is your recommendation?

16 A. I recommend that the Commission adopt the updated variable fuel  
17 and purchase power expense that Staff modeled as well as the updated value of physical  
18 bilateral margins, financial swaps, and real time deviation.

19 Q. Does this conclude your True-up direct testimony?

20 A. Yes, it does.

**BEFORE THE PUBLIC SERVICE COMMISSION**  
**OF THE STATE OF MISSOURI**

In the Matter of Union Electric Company            )  
d/b/a Ameren Missouri's Tariffs to Adjust Its        )  
Revenues for Electric Service                        )        Case No. ER-2021-0240

**AFFIDAVIT OF SHAWN E. LANGE, PE**

STATE OF MISSOURI        )  
  )        ss.  
COUNTY OF COLE        )

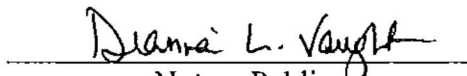
**COMES NOW SHAWN E. LANGE, PE**, and on his oath declares that he is of sound mind and lawful age; that he contributed to the foregoing *True-Up Direct Testimony of Shawn E. Lange, PE*; and that the same is true and correct according to his best knowledge and belief.

Further the Affiant sayeth not.

  
SHAWN E. LANGE, PE

**JURAT**

Subscribed and sworn before me, a duly constituted and authorized Notary Public, in and for the County of Cole, State of Missouri, at my office in Jefferson City, on this 3rd day of November, 2021.

  
Notary Public

DIANNA L. VAUGHT Notary Public - Notary Seal State of Missouri Commissioned for Cole County My Commission Expires: July 18, 2023 Commission Number: 15207377
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