

Exhibit No.:
Issue(s): Customer Owned Solar
Witness: Marina Stever
Sponsoring Party: MoPSC Staff
Type of Exhibit: Rebuttal Testimony
Case No.: ER-2024-0319
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MISSOURI PUBLIC SERVICE COMMISSION
INDUSTRY ANALYSIS DIVISION
TARIFF & RATE DESIGN DEPARTMENT

REBUTTAL TESTIMONY

OF

MARINA STEVER

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

CASE NO. ER-2024-0319

Jefferson City, Missouri
January 2025

1 **REBUTTAL TESTIMONY**

2 **OF**

3 **MARINA STEVER**

4 **UNION ELECTRIC COMPANY,**
5 **d/b/a Ameren Missouri**

6 **CASE NO. ER-2024-0319**

7 Q. Please state your name and business address.

8 A. My name is Marina Stever, 200 Madison Street, Jefferson City, Missouri 65101.

9 Q. Are you the same Marina Stever who filed direct testimony on
10 December 3, 2024, in this case?

11 A. Yes, I am.

12 Q. What is the purpose of your rebuttal testimony?

13 A. My testimony responds to Ameren Missouri's proposed adjustments to billing
14 determinants associated with customer-owned solar, as well as the resulting revenue impact.

15 Q. Please explain Ameren Missouri's proposed customer-owned solar adjustment
16 and its impact on billing determinants in this case.

17 A. In Dr. Nicholas Bowden's direct testimony, he states that the customer-owned
18 solar adjustment intends to annualize "...the impact of behind-the-meter solar installations
19 made throughout the test year..."¹ Ameren Missouri's adjustment is based on an estimate of
20 the electricity generated behind-the-meter during the test year.² Dr. Bowden explains that
21 "...the number of kWh generated by each solar installation... is estimated for each month of
22 the test year."³ Then the monthly kWh that would have been generated throughout the test year

¹ Dr. Nicholas Bowden's Direct Testimony, Page 19, Lines 2-3.

² The twelve months ending March 31, 2024.

³ Dr. Nicholas Bowden's Direct Testimony, Page 19, Lines 8-10.

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1 is estimated with the assumption that all capacity was installed on the first day of the test year.
2 Dr. Bowden then takes the difference between the two estimates on a monthly basis to
3 determine the preliminary estimate for the customer-owned solar adjustment. This estimate is
4 then further adjusted in order to account for the kWh generated that will be sold to Ameren
5 Missouri at its avoided cost rate.

6 Ameren Missouri calculates an estimated monthly probability that uses the ratio of the
7 total behind-the-meter generation sold at avoided cost to the total behind-the-meter generation,
8 subtracts this from 1 and multiplies that difference by the preliminary adjustment in order to
9 determine the final customer-owned solar adjustment.

10 Q. Does Staff agree that Ameren Missouri's billing determinants may decrease as
11 a result of increased solar installations throughout the service territory?

12 A. Yes.

13 Q. Did Staff make a customer-owned solar adjustment to billing determinants in its
14 direct case?

15 A. No, Staff did not make a customer-owned solar adjustment to billing
16 determinants in its direct case. The adjustment in which kWh generated are added in the months
17 of the test year and update period is not necessary. This is because the actual billing
18 determinants reflect the actual kWh generated from the solar installations that occurred
19 throughout the test year and update period.

20 Q. Is Ameren Missouri's customer-owned solar adjustment accurate?

21 A. It is difficult to determine the accuracy of Ameren Missouri's customer-owned
22 solar adjustment since solar output depends on many different variables including, but not
23 limited to, shade, weather, size, and location. The estimates used to determine the

1 customer-owned solar adjustment do not account for the differences in output due to these
2 variables. The estimates use a solar generation model called PVWatts⁴ and runs under the
3 assumption that all of the solar capacity is installed at Ameren Missouri's corporate office
4 located at 1901 Chouteau Avenue in St. Louis, Missouri. Additionally, the PVWatts Calculator
5 provides the following disclaimers while using the tool:

6 PVWatts® is suitable for very preliminary studies of a photovoltaic system that
7 uses modules (panels) with crystalline silicon or thin film photovoltaic cells.
8 PVWatts® production estimates do not account for many factors that are important in
9 the design of a photovoltaic system.

10 PVWatts® uses a set of assumptions that are appropriate for flat-plate
11 photovoltaic systems with typical crystalline silicon or thin-film modules.
12 PVWatts® results are not appropriate for systems using some types of thin-film
13 modules, concentrating collectors, or for modules using novel cell technologies or
14 module designs.

15 PVWatts® does not model self shading for the fixed or two-axis tracking option,
16 tracker losses, or shading by nearby objects.

17 PVWatts® makes assumptions about the module performance based on
18 the Module Type you choose, and assumes that the module nameplate size is for
19 standard test conditions (STC): Solar irradiance of 1,000 W/m², cell temperature of
20 25°C (77°F), and air mass of 1.5. You should not use PVWatts® to model a system
21 with other types of modules, or with a nameplate size for other test conditions.

22 Q. Does Ameren Missouri's estimated solar output used for the customer-owned
23 solar adjustment account for the differences in the assumptions that PVWatts indicates impacts
24 Ameren Missouri's estimated solar output?

25 A. No. These variables are not accounted for and it is reasonable to assume that
26 there would be variation amongst the variables depending on installation, model, and location.

⁴ PVWatts.nrel.gov

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1 Q. Is it reasonable to introduce the level of uncertainty associated with
2 Mr. Bowden's adjustment?

3 A. No. Although the billing determinants in the test period may not fully reflect
4 the annual energy output of the customer-owned solar installations, the billing determinants do
5 reflect the actual output of the solar arrays for each month after installation as opposed to an
6 estimation of the output reflected in each month of the test period. In this case, it is better to
7 retain a higher accuracy for a portion of the year as opposed to introducing uncertainty for the
8 entire year in an effort to annualize the generation introduced during the test year in a way that
9 may be inaccurate.

10 Q. A portion of the energy output from behind the meter solar installation is paid to
11 those solar-owning customers at the net-metering rate. Is Staff opposed to the removal of the
12 energy production that exceeds customer-specific usage in a given month from the billing
13 determinants in the test year?

14 A. No. The excess energy production of a given customer in a given month is
15 measurable through the meter. Although Staff did not make the adjustment in its direct case,
16 Staff is not opposed to this adjustment in the true-up period in this case.

17 Q. How can the accuracy of solar annualization be improved in future cases?

18 A. Staff recommends Ameren Missouri retain data by class and voltage for those
19 net-metered customers with AMI metering equipment. This data will provide additional insight
20 for Ameren Missouri, Staff, ratepayers, and the Commission on the level of net generation from
21 behind the meter solar installations throughout the service territory.

22 Q. Does this conclude your rebuttal testimony?

23 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-2024-0319

AFFIDAVIT OF MARINA STEVER

STATE OF MISSOURI)
)
COUNTY OF COLE) ss.

COMES NOW MARINA STEVER and on her oath declares that she is of sound mind and lawful age; that she contributed to the foregoing *Rebuttal Testimony of Marina Stever*; and that the same is true and correct according to her best knowledge and belief.

Further the Affiant sayeth not.



MARINA STEVER

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 15th day of January 2025.

D. SUZIE MANKIN
Notary Public - Notary Seal
State of Missouri
Commissioned for Cole County
My Commission Expires: April 04, 2025
Commission Number: 12412070



Notary Public