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Nicholas Bowden, Ph.D.  
True-Up Rebuttal Testimony  
File No. ER-2022-0337

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Testimony  
Sponsoring Party: Union Electric Company  
File No.: ER-2022-0337  
Date Testimony Prepared: March 24, 2023

**MISSOURI PUBLIC SERVICE COMMISSION**

**FILE NO. ER-2022-0337**

**TRUE-UP REBUTTAL TESTIMONY**

**OF**

**NICHOLAS BOWDEN, Ph.D.**

**ON**

**BEHALF OF**

**UNION ELECTRIC COMPANY**

**d/b/a Ameren Missouri**

**St. Louis, Missouri  
March, 2023**

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**TRUE-UP REBUTTAL TESTIMONY**

**OF**

**NICHOLAS BOWDEN, Ph.D.**

**FILE NO. ER-2022-0337**

1           **Q.     Please state your name and business address.**

2           A.     Nicholas Bowden, Union Electric Company d/b/a Ameren Missouri ("Ameren  
3 Missouri" or "Company"), One Ameren Plaza, 1901 Chouteau Avenue, St. Louis, Missouri 63103.

4           **Q.     Are you the same Nicholas Bowden that filed direct, rebuttal and**  
5 **surrebuttal/true-up testimony in this proceeding?**

6           A.     Yes, I am.

7                               **I.     PURPOSE OF TESTIMONY**

8           **Q.     What is the purpose of your true-up rebuttal testimony in this proceeding?**

9           A.     The purpose of my true-up rebuttal testimony is to respond to Staff's true-up billing  
10 units and normalized revenues. Specifically, billing unit and normalized revenue issues exist related  
11 to the following adjustments:

12           1. MEEIA Adjustment

13           2. Solar Adjustment

14           3. Weather Normalization

15           4. Growth Adjustment

16           5. Non-residential Switching Adjustment

17                               **II.    MEEIA ADJUSTMENT**

18           **Q.     Did you review Staff's MEEIA Adjustment in its true-up filing?**

19           A.     Yes.

1           **Q. Did Staff correct the errors which existed in its direct filing in its true-up**  
2 **filing?**

3           A. Yes.

4   **III. SOLAR ADJUSTMENT**

5           **Q. Did Staff include a Solar Adjustment in its true-up filing?**

6           A. No.

7           **Q. Should a Solar Adjustment be included in the development of normalized**  
8 **billing units and revenues?**

9           A. Yes.

10          **Q. Why should a Solar Adjustment be included in the development of normalized**  
11 **billing units and revenues?**

12          A. A Solar Adjustment should be included for the reasons previously outlined in my  
13 direct, rebuttal, and surrebuttal testimony.

14   **IV. WEATHER NORMALIZATION**

15          **Q. Did you review Staff's weather normalization used in its true-up filing?**

16          A. Yes. I reviewed both the total kWh weather normalization and residential and small  
17 general service block normalization procedures performed by Staff

18          **Q. What was the result of the review?**

19          A. The review revealed that all the problems with Staff's weather normalization of  
20 both total kWh and residential and small general service blocks outlined in my rebuttal and  
21 surrebuttal still exist.

1 **V. GROWTH ADJUSTMENT**

2 **Q. Did Staff perform a Growth Adjustment in its billing unit and normalized**  
3 **revenue analysis in its true-up filing?**

4 A. Yes.

5 **Q. Did you review Staff's Growth Adjustment?**

6 A. Yes.

7 **Q. What was the result of that review?**

8 A. There is one notable result of the review. The Company and Staff used different  
9 assumptions to allocate residential Evening/Morning Savers kWh associated with the growth  
10 adjustment to block 1 and block 2 usage, and that difference in assumptions has a notably different  
11 impact on the Staff's and Company's growth adjustments for the residential class.

12 **Q. Is there a specific reason why different growth-related assumptions about**  
13 **Evening/Morning Savers billing units are impactful in this case?**

14 A. Yes. There was a significant number of customers switching from Anytime Users  
15 to Evening/Morning Savers in the test year and true-up period. The customers switching were not  
16 random, but rather followed the geographic roll-out of AMI meters. If the characteristics of  
17 customers who were switching changed over the test year and true-up period, and the assumption  
18 about the characteristics in each month of the test year don't reflect the characteristics of customers  
19 at the true-up date, then the assumption will distort the outcome.

20 **Q. What are the different assumptions made by the Company and Staff?**

21 A. The Company assumed that Evening/Morning Savers customers after the  
22 adjustment look more like Anytime Users customers did in the test year than they look like  
23 Evening/Morning Savers customers did in the test year. Staff assumed the opposite, that

1 Evening/Morning Savers customers after the adjustment look more like Evening/Morning Savers  
2 customers did in the test year than they look like Anytime Users customers did in the test year.

3 **Q. Which one of the assumptions is better?**

4 A. The Company's assumption is better for one simple reason. More customers were  
5 switched to Evening/Morning Savers from Anytime Users in the adjustment, than there were  
6 customers in evening morning Evening/Morning Savers during the test year. Said another way,  
7 there are more customers who are Evening/Morning customers after the adjustment who were  
8 Anytime Users in the test year than there are customers who are evening morning customers after  
9 the adjustment who were actually Evening/Morning Savers customers during the test year. In this  
10 context, customer means customer-months, so if there are 1 million customers, then there are 12  
11 million customer-months per year. There were 2,325,792 Evening/Morning Savers customer-  
12 months in the test year and 2,964,248 customers-months which were switched from Anytime Users  
13 to evening morning Evening/ Morning Savers in the adjustment.

14 **Q. Does an alternative assumption exist that gives weight to both Staff's**  
15 **assumption and the Company's assumption?**

16 A. Yes. An alternative assumption exists which mathematically weights both Staff's  
17 and the Company's assumptions. The alternative is to use a weighted average of the Staff's and the  
18 Company's assumption. The alternative also does not require a choice of weights, but allows the  
19 data to dictate them. The alternative is to use the combined Anytime User and Evening/Morning  
20 Savers average block 1 and block 2 split. This combined average is implicitly and literally a  
21 weighted average of the assumptions used by Staff and the Company. In fact, both the Company  
22 and Staff use a similar combined Anytime User and Evening/Morning Saver average of the total  
23 kWh to determine the total kWh that will switch with each customer. The use of a similar

1 assumption for the determination of block 1 and block 2 kWh that result from the switch is  
2 logically consistent with that choice both the Company and Staff made related to the total kWh  
3 switched.

4 **Q. Have you quantified the impact of implementing this average customer**  
5 **assumption to Evening/Morning Savers block 1 and block 2 kWh?**

6 A. Yes. The Staff's residential class growth adjustment resulted in a \$6 million  
7 increase in revenue, while the Company's growth adjustment resulted in a \$2 million increase in  
8 revenue. The weighted average assumption results in a \$3.5 million increase in revenue.

9 **IV. NON-RESIDENTIAL SWITCHING ADJUSTMENT**

10 **Q. Did you review Staff's non-residential switching adjustment?**

11 A. Yes.

12 **Q. Could you describe the purpose of Staff's non-residential customer switching**  
13 **adjustment?**

14 A. Yes. Both Staff and the Company model non-residential customers who switch to  
15 or from the SPS and LPS classes on a customer-specific basis. That means that we identify specific  
16 customers from those classes who switch to another class or leave or enter the service territory,  
17 and make adjustments for those customers' specific kWh and kW characteristics.

18 **Q. What is the result of your review of Staff's switching adjustment?**

19 A. Staff switching adjustments are unreasonable, because Staff makes two decisions  
20 that are unreasonable when performing its switching adjustment.

21 First, Staff assumes all customer kWh coming to or leaving from the SPS class are block 1  
22 kWh. The SPS has a declining block tariff with three blocks, and it is clear that not all kWh coming  
23 or leaving the class are block 1. For instance, in June of 2022, Staff removes 6.6 million kWh and



1 12,772 kW out of the SPS class. Per the SPS tariff, the first 150 kWh times kW of demand are  
2 block 1. That means the maximum number of block kWh, approximately 1.9 million kWh, can be  
3 block 1 kWh. Furthermore, per the SPS tariff, the next 200 kWh time kW demand are block 2  
4 kWh. Therefore, the next approximately 2.5 million kWh are block 2 kWh. Therefore, 2.2 million  
5 kWh are block 3 kWh.<sup>1</sup> Nonetheless, Staff assumes that all kWh are block 1 kWh, while it is clear  
6 that some of the kWh are block 1, some are block 2 and some are block 3 kWh.

7           Second, Staff adds kWh and kW to the SPS class for an LPS customer who has shut down  
8 operations. The customer's plan to shut down was known at the time of the Company's direct filing  
9 and that information was provided to Staff via data request responses.<sup>2</sup> This customer's usage  
10 measured approximately 200,000 kWh and 400 kW of demand in May and June of 2022 of the  
11 test year as the customer began shutting down operations. Staff added nearly 3,000,000 kWh and  
12 5,000 kW per month to the SPS class for the months of July 2021 through March 2022 of the test  
13 year attributable to the customer though. This known and measurable change should be reflected  
14 in normalized billing units.

15           **Q. Does this conclude your true-up rebuttal testimony?**

16           A. Yes, it does.

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<sup>1</sup> Calculated: 6.6 million kWh – 1.9 million kWh - 2.5 million kWh = 2.2 million kWh.

<sup>2</sup> MPSC 0146 and MPSC 0148.

**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-2022-0337

**AFFIDAVIT OF NICHOLAS BOWDEN, Ph.D.**

**STATE OF MISSOURI**     )  
  ) ss  
**CITY OF ST. LOUIS**     )

Nicholas Bowden, being first duly sworn states:

My name is Nicholas Bowden, and on my oath declare that I am of sound mind and lawful age; that I have prepared the foregoing *True-Up Rebuttal Testimony*; and further, under the penalty of perjury, that the same is true and correct to the best of my knowledge and belief.

  \s\ Nicholas Bowden  
Nicholas Bowden

Sworn to me this 24<sup>th</sup> day of March, 2023.