

Exhibit No.:
Issues: Time-of-Day Rate Option
Witness: Alex Schroeder
Sponsoring Party: Missouri Department of Economic
Development - Division of Energy
Type of Exhibit: Rebuttal Testimony
Case No.: ER-2014-0258

MISSOURI PUBLIC SERVICE COMMISSION

UNION ELECTRIC COMPANY

d/b/a

AMEREN MISSOURI

CASE NO. ER-2014-0258

REBUTTAL TESTIMONY

OF

ALEX SCHROEDER

ON

BEHALF OF

MISSOURI DEPARTMENT OF ECONOMIC DEVELOPMENT

DIVISION OF ENERGY

Jefferson City, Missouri
January 15, 2015

**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 Increase Its Revenues for)
Electric Service)

ER-2014-0258

AFFIDAVIT OF ALEX SCHROEDER

STATE OF MISSOURI)
) **ss**
COUNTY OF COLE)

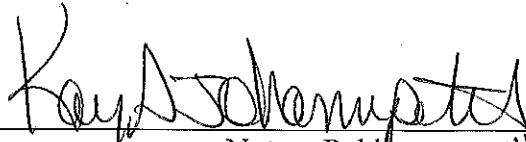
Alex Schroeder, of lawful age, being duly sworn on his oath, deposes and states:

1. My name is Alex Schroeder. I work in the City of Jefferson, Missouri, and I am employed by the Missouri Department of Economic Development as a Planner III, Division of Energy.
2. Attached hereto and made a part hereof for all purposes is my Rebuttal Testimony on behalf of the Missouri Department of Economic Development – Division of Energy.
3. I hereby swear and affirm that my answers contained in the attached testimony to the questions therein propounded are true and correct to the best of my knowledge.



Alex Schroeder

Subscribed and sworn to before me this 15th day of January, 2015.



Notary Public

My commission expires:

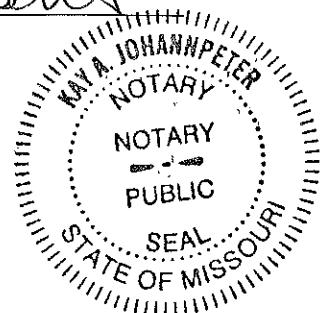
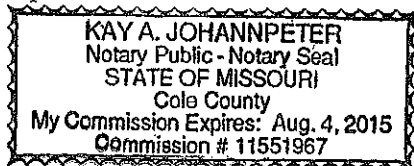


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1 **I. INTRODUCTION AND PURPOSE OF TESTIMONY**

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

3 A. My name is Alex Schroeder. My business address is 301 West High Street, Suite 720, PO
4 Box 1766, Jefferson City, Missouri 65102.

5 **Q. By whom and in what capacity are you employed?**

6 A. I am employed by the Missouri Department of Economic Development - Division of
7 Energy (DE) as a Planner III - Senior Energy Policy Analyst.

8 **Q. Have you testified previously in this case?**

9 A. Yes. On December 19th, 2014 I submitted direct testimony in ER-2014-0258 regarding
10 CHP and Ameren Missouri's Rider E.

11 **Q. What is the purpose of your rebuttal testimony?**

12 A. The purpose of my rebuttal testimony is to offer DE's response to Ameren Missouri's
13 proposed changes to its residential "Time-of-Day" (TOD) rate, as outlined on pages 22-
14 27 of the direct testimony of Ameren witness Mr. William R. Davis. I also propose two
15 necessary changes to the rate option.

16 **II. DESCRIPTION OF TOD RATE AND SUMMARY OF PROPOSED CHANGES**

17 **Q. What is the residential TOD rate?**

18 A. The residential TOD rate is a rate option with a variable energy charge available to
19 residential customers. Currently, the customer must pay a \$16.81 customer charge,
20 compared to the \$8.00 customer charge for standard residential service, to participate in
21 this rate option. Energy charges are broken down into a summer (June-September) and
22 winter (October-May) period. Within each seasonal period, the energy charge varies
23 depending on whether energy usage occurs during peak or non-peak hours. A Low-

1 Income Pilot Program Charge and an Energy Efficiency Program Charge must also be
2 paid, though these do not differ from those found in the standard residential rates. Table 1
3 below presents the components of the TOD rate.

4 **Table 1: Ameren Missouri's Optional TOD Rate¹**

Customer Charge - per month	\$16.81
Low-Income Pilot Program Charge - per month	\$0.03
Energy Charge - per kWh	
Summer	
<i>All On Peak kWh</i>	16.51¢
<i>All Off Peak kWh</i>	6.76¢
Winter	
<i>All On Peak kWh</i>	9.74¢
<i>All Off Peak kWh</i>	4.82¢
Energy Efficiency Program Charge - per kWh	
Summer	0.12¢
Winter	0.07¢

5 By way of comparison, the energy charge under the standard residential service rate is
6 currently 11.36¢ per kWh during the summer and 8.08¢ per kWh during the winter for
7 the first 750 kWh and 5.38¢ per kWh thereafter. Peak hours are currently 10 AM - 10 PM
8 on weekdays year-round, excluding certain holidays².

9 **Q. How does Ameren Missouri propose to change the TOD rate?**

10 A. As is summarized on page 27 of Mr. Davis's direct testimony, Ameren Missouri is
11 proposing five changes to its TOD rate:

- 12 a) Change the name to "Nights and Weekends" rate
13 b) Change peak hours to 2 PM - 7PM on summer weekdays only

¹ Union Electric Company, "Service Classification No. 1(M): Residential Service Rate". (<https://www.ameren.com/-/media/missouri-site/Files/Rates/UECSheet54Rate1MRES.pdf>). Accessed January 5th, 2014.

² New Year's Day, Good Friday, Memorial Day, Independence Day, Labor Day, Thanksgiving Day, Thanksgiving Friday, Christmas Eve Day, Christmas Day

1 c) Lower the TOD customer charge to make it equivalent to the customer charge for
2 standard residential service³

3 d) Change summer rates to 30.21¢ per kWh on-peak 8.04¢ per kWh off-peak. Winter
4 rates would be the same as those under standard residential service

5 e) Limit participation to 5,000 and exclude those with net metering agreements

6 **III. RESPONSE TO PROPOSED CHANGES**

7 **a. Name Change**

8 **Q. What justification does Mr. Davis offer for the proposed name change?**

9 A. On page 23 of his testimony, Mr. Davis states that “Time-of-Day” constitutes “industry
10 jargon” and does not convey anything substantive about the nature or function of the rate.
11 He argues that “[b]ecause the rates are lower after 7 p.m. (“Nights”) and on weekends”
12 the name of the rate should be changed to the “Nights and Weekends” rate.

13 **Q. Will this proposed change remedy Mr. Davis’s concerns about the ambiguity of the
14 rate’s title?**

15 A. No.

16 **Q. Please explain.**

17 A. Under the TOD option, Mr. Davis is correct that *in the summer* it will be cheaper to
18 purchase kilowatt hours during nights and weekends. However, there are two problems
19 with changing the title to “Nights and Weekends”. The first issue is that the proposed title
20 of the rate does not convey that rate variability will only apply in the summer. Further,
21 during the summer months it would be just as cheap to purchase kilowatt hours in the
22 morning as well, as there is no variability in the energy charge from 7 PM until 2 PM the

³ The customer charge for standard residential service is currently \$8.00 per month. The Company is proposes to raise this to \$8.77.

1 next day. By Mr. Davis's logic, the rate could just as easily be called the "Mornings and
2 Weekends" rate.

3 **Q. How would you propose to change the rate's title?**

4 A. DE agrees that a better, more descriptive title for the rate would be helpful for Ameren
5 Missouri's customers. However, to the extent that the new peak hours (i.e., from 2 PM - 7
6 PM during summer weekdays) go into effect, a good, descriptive title would convey the
7 fact that peak hours a) only occur during summer weekdays, and b) occur during a five-
8 hour period in the afternoon and early evening. The title "Nights and Weekends" does not
9 fulfill either of these criteria and, one could argue, even misleads the customer into
10 thinking that lower energy charges prevail only during nights and weekends.

11 To avoid misleading customers, the title should at the very least be something generic
12 (e.g., "Off-Peak Savings" rate). In this respect, retaining the existing title would even be
13 preferable to changing it to "Nights and Weekends".

14 **b. Change in peak hours**

15 **Q. Is Ameren Missouri's proposed reduction in peak hours consistent with the usage
16 patterns of its customers?**

17 A. Yes. Upon review of Staff's Normalized Net System Input spreadsheet, I agree that
18 shifting peak hours to 2PM - 7 PM during summer weekdays corresponds more closely to
19 the demands placed on Ameren's system.

20 Said dataset contains demand values for every hour for a year beginning on August 1,
21 2013. I first used the MAX function in Excel to determine the highest demand that was
22 placed in any hour during that year on Ameren Missouri's system. Then, I divided each
23 hourly demand value in the dataset by this figure. What this does is express each hourly

1 demand value as a percentage of the test year’s system peak. With the resultant dataset, I
2 then created two smaller datasets. The first contains said percentages for all hours
3 throughout the test year that correspond to Ameren Missouri’s current TOD tariffed peak
4 hours (i.e. weekdays from 10 AM - 10 PM year-round, minus the specified holidays). The
5 second contains said percentages for all hours throughout the test year that correspond to
6 Ameren Missouri’s proposed TOD tariffed peak hours (i.e., summer weekdays from 2
7 PM - 7 PM).

8 For each of these datasets, I calculated the average, median, minimum, and maximum
9 values. I also calculated the “average of daily peaks”. This figure was obtained by taking
10 the maximum peak-hour percentage value of each range of peak hours, for all sets of
11 peak hours during the test year. I then took the average of these values. The results of
12 these calculations are shown in Table 2.

13 **Table 2: Summary Calculations of Ameren Missouri’s Proposed and Current Peak**
14 **Periods**

Proposed Peak	
Average	79%
Median	78%
Minimum	52%
Maximum	100%
Average of Daily Peaks	80%
Current Peak	
Average	67%
Median	64%
Minimum	46%
Maximum	100%
Average of Daily Peaks	71%

15 The results indicate that Ameren Missouri’s new proposed peak hours are more
16 consistent with demand patterns during the test year than current TOD peak periods:

1 Demand was more intense during the proposed TOD tariffed peak hours than during
2 current TOD tariffed peak hours.

3 By taking a higher-level view, we can also see that during the test year, the most intense
4 demand occurred within the summer (June-September) window. In said year, there were
5 117 hours in which demand reached at least 90% of the test year's peak. Only 11 (9%) of
6 those hours occurred outside of the June-September window. And there were 29 hours in
7 which demand reached 95% of system peak, none which occurred outside of the June-
8 September window. Further, summer is when the system peak occurred.

9 Ameren Missouri's proposed change can be conceptualized as "moving up the mountain"
10 as it were. At the very peak of the mountain lies the peak demand during any hour of the
11 test year. At the base of the mountain lie all hours during the test year. By "moving up
12 the mountain", peak hours become more limited, but demand during those hours becomes
13 more intense.

14 For the forgoing reasons, DE agrees with Ameren Missouri's proposed changes to its
15 peak periods.

16 **c. Reduction in customer charge and limitations on participation**

17 **Q. What is your opinion of the proposed reduction in the customer charge to
18 participate in the TOD rate option?**

19 A. DE supports the proposal to lower the customer charge, as it reduces the disincentive to
20 participate in a rate option that encourages conservation during peak hours.

21 **Q. What is your opinion of the proposed limitations for the TOD rate option?**

22 A. Ameren Missouri did not offer any support for limiting participation to 5,000 or for
23 excluding those with net metering agreements (or "self-generators", as is stated in the

1 summary chart on page 27 of Mr. Davis’s testimony). DE does not necessarily oppose
2 these proposals, but does encourage Ameren Missouri to provide support for them in
3 surrebuttal testimony.

4 **d. Change in rates**

5 **Q. Ameren Missouri’s proposed changes to peak and non-peak rates under the TOD**
6 **option significantly increase the difference between the two. Is this acceptable to**
7 **DE?**

8 A. Yes. This differential is mitigated by the fact that the TOD rate is optional. If the
9 Commission deems Mr. Davis’s proposed rates acceptable, DE would have no objection
10 to them, pending the two additional changes outlined below.

11 As is indicated in the calculations in Table 2, demand would be more intense during the
12 new, more limited peak hours, and it is appropriate for the on-peak rate to reflect that
13 fact. Mr. Davis correctly notes on page 25 of his testimony that this increased differential
14 will incent more people subject to TOD pricing to alter their consumption patterns.

15 However, he also points out on the same page that “[t]here is also some risk associated
16 with choosing this rate option [because] the failure to reduce consumption during a peak
17 period that is priced high will result in a much higher bill than what it would be under the
18 standard rate.” In other words, the potential losses (vis-à-vis what one would pay under
19 standard residential service) associated the rate option are higher.⁴ And further, the new

20 TOD rate option would offers less potential for savings because a) There would be no

⁴ Under current rates the differential between the standard summer energy charge (11.36¢/kWh) and the on-peak summer energy charge (16.51¢/kWh) is 5.15¢/kWh. Under the proposed energy charges the standard summer energy charge would be 12.47¢/kWh and the on-peak summer energy charge would be 30.21¢/kWh, for a differential of 17.74¢/kWh. This indicates that there is much more to be lost by not altering consumption behavior (to avoid on-peak energy charges) during the summer under the proposed TOD rate. Similar calculations for the winter cannot be done, because under the Company’s proposal, there would be nothing to be gained or lost in winter by adopting the TOD rate relative to standard residential rates.

1 advantage to the rate option during the winter, and b) During the summer, the differential
2 between standard residential pricing (12.47¢/kWh) and off-peak pricing (8.04¢/kWh)
3 would be less than that which currently prevails (11.36¢/kWh vs. 6.76¢/kWh).⁵

4 So while it is true that the increased differential between peak and non-peak rates
5 constitutes a stronger incentive to change behavior *for those already subject to the TOD*
6 *rate*, the two forgoing considerations (more potential risk, less potential savings)
7 constitute a disincentive to select the rate in the first place.⁶ Partly for this reason, DE
8 offers two additional changes below. These changes are intended to a) lessen the risk
9 associated with adopting the TOD rate, b) incent more people to adopt the rate, and c)
10 protect consumers.

11 **IV. DE'S PROPOSED CHANGES**

12 **Q. Does DE believe that Ameren's proposed changes warrant further changes?**

13 A. Yes. DE would like to see two additional changes to the TOD rate: a) The clause
14 requiring that a customer remain on the TOD rate for a minimum of twelve months
15 should be removed, and b) TOD customers should be informed of how their bills changed
16 as a result of selecting this rate option.

17 **Q. Please elaborate on your proposal to remove the aforementioned clause.**

18 A. Part 4(b) of Ameren Missouri's Residential Service Rate⁷ states that

19 Customer electing this TOD option, shall remain on said option for
20 a minimum period of twelve (12) months, provided however, that
21 customer may discontinue this option within the first ninety (90)
22 days thereunder subject to the continued payment of the TOD

⁵ The proposed differential would be 4.43¢/kWh, whereas the current differential is 4.60¢/kWh.

⁶ The lower customer charge notwithstanding

⁷ Union Electric Company, "Service Classification No. 1(M): Residential Service Rate". (<https://www.ameren.com/-/media/missouri-site/Files/Rates/UECSheet54Rate1MRES.pdf>). Accessed January 5th, 2014.

1 customer charge, in lieu of any other customer charge, for the full
2 twelve (12) month term of this option.

3 Part 4(b) should be removed entirely, and customers should be allowed to cancel the rate
4 option at will. As the paragraph indicates, customers who pass the ninety-day threshold
5 must remain on the rate for twelve full months. There is no apparent reason for this; the
6 proposed rates for the TOD option are already rooted in costs, as is outlined in Mr.
7 Davis's testimony. Further, it is unclear how cancelling the TOD option outside of the
8 ninety-day window could harm the Company in a way that cancelling within the ninety-
9 day window does not.

10 It should be pointed out here that paragraph 4(c), which disallows a customer who
11 cancelled TOD pricing from re-starting it within a year, already protects the Company
12 from frequent, disruptive rate switching.

13 **Q. Does Mr. Davis propose any changes to this language?**

14 A. Yes. Mr. Davis's proposed language changes part 4(b) to read "Customer electing this
15 NAW [Nights and Weekends] option, shall remain on said option for a minimum period
16 of twelve months."

17 While his proposal rightly eliminates the language pertaining to the continued payment of
18 the TOD customer charge in the event of cancellation⁸, it strengthens the language
19 "locking-in" customers to the rate option.⁹ Mr. Davis's proposed language does not alter
20 DE's recommendation that part 4(b) should simply be removed in full.

21 **Q. Please elaborate on your proposal to inform TOD customers of how their bills**
22 **changed as a result of selecting this rate option.**

⁸ This language would be meaningless if the TOD customer charge and the standard customer charge were equivalent.

⁹ I.e., a customer would no longer be allowed to discontinue the rate option within ninety days.

1 A. As Mr. Davis points out on page 23 of his direct testimony, 18 of the 34 (53%) customers
2 currently on the TOD rate were worse off (relative to what they would have paid under
3 standard residential service) in 2013. While Ameren Missouri's proposed changes may
4 help decrease this percentage, DE would like to see the Company regularly inform
5 customers who are worse off - and by how much - as a result of selecting TOD pricing.
6 This could be done in a variety of ways (e.g., via mail, email, telephone, or on the bill
7 itself), but it should be done frequently enough to allow the customer to act on the
8 information in a timely manner. Ideally, it would be done monthly.
9 DE would also like to see the Company inform better-off customers how much better off
10 they are. Such information would be valuable in and of itself, but could also serve as
11 favorable publicity for the rate option.

12 **Q. Is there anything else you would like to add?**

13 A. Yes. I want to emphasize that DE's two recommendations are intended to balance
14 customer well-being with conservation goals and the financial interests of Ameren
15 Missouri. The Company's proposed on-peak pricing is almost double that which prevails
16 today, and almost three times that which prevails under standard summer energy charges.
17 While the proposed changes significantly limit peak hours and strengthen the incentive to
18 shift consumption away from such hours, the proposed on-peak rate represents a
19 considerable increase. DE's two recommendations here are intended to strike a prudent
20 balance between this potentially burdensome increase and customer welfare.

21 **Q. Does this conclude your rebuttal testimony?**

22 A. Yes.