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MISSOURI PUBLIC SERVICE COMMISSION

Case No. ER-2012-0166

SURREBUTTAL TESTIMONY

OF

WILLIAM R. DAVIS

ON

BEHALF OF

**UNION ELECTRIC COMPANY
d/b/a AmerenUE**

St. Louis, Missouri
September, 2012

Ameren Exhibit No. 40
Date 10-11-12 Reporter KF
File No ER-2012-0166

1 increase the payback from 1.78 years to 1.81 years, or by just 12 days. It is immediately
2 apparent that such a change would have a negligible impact on customer participation levels
3 and thus would have no impact on the cost-effectiveness of the Company's MEEIA programs
4 or the Company's ability to meet its MEEIA performance targets.

5 As I mentioned in testimony for both the MEEIA case and in my rebuttal testimony in
6 this case, the revenue requirement for the throughput disincentive portion of net shared
7 benefits is inextricably linked with the Company's request to increase the residential
8 customer charge. At the time of the MEEIA analysis, the decision had not been made to
9 request an increase in the SGS monthly customer charges and therefore the MEEIA case and
10 the rate case were not synchronized on this one issue. To ensure the two cases are consistent,
11 I have determined that if the Commission approves the Company's request to increase the
12 SGS monthly customer charges to \$14.61 for single-phase and \$29.24 for three-phase, then
13 the revenue requirement needs to decrease by \$47,056.00.

14 **Q. What did Ms. Morgan testify is the "most important reason" for denying**
15 **the Company's proposed residential monthly customer charge change?**

16 **A.** Ms. Morgan testified that "[t]he most important reason for denying this rate
17 design change is that its effects are directly at odds with achieving the state's goal of
18 capturing all cost-effective energy efficiency. Increasing the customer charge lengthens the
19 payback period that customers face in making energy efficiency investments."¹

20 **Q. Has Ms. Morgan provided any quantitative analysis to determine the**
21 **impact of the Company's proposal on payback periods?**

¹ Morgan Rebuttal, p. 5, l. 15-19.

1 A. No. Although NRDC claims this is the most important reason to reject the
2 Company's proposal, Ms. Morgan provided no quantification of the impact.

3 **Q. Have you performed any analysis to quantify the impact to the payback**
4 **of energy efficiency investments if the monthly residential customer charge is increased**
5 **from \$8 to \$12?**

6 A. Yes. As a reminder, in my rebuttal testimony in this case I showed that based
7 on the Participant Cost Test, which considers the incremental costs of more efficient end-uses
8 of electricity compared to total bill savings and the rebates participants in energy efficiency
9 programs receive if they implement energy efficiency measures, the participants' benefits are
10 still a multiple of 4.6 times the participants' costs, even if the Company's proposal to increase
11 the residential monthly customer charge from \$8 to \$12 is approved. To specifically respond
12 to NRDC's rebuttal testimony, I also calculated the weighted average payback of all of the
13 residential end-use measures included in the Company's approved MEEIA plan (excluding
14 appliance recycling and the low-income program). The payback period with an \$8 monthly
15 customer charge is 1.78 years while the payback period with a \$12 monthly customer charge
16 is 1.81 years, which means the payback period would increase by only 12 days under the
17 Company's residential customer charge proposal. This analysis clearly shows that there is a
18 negligible impact to payback if the Company's proposal to increase the residential customer
19 charge is accepted. This demonstrates that Ms. Morgan's claims that approving the
20 Company's customer charge proposal would be "directly at odds with achieving the state's
21 goal of capturing all cost-effective energy efficiency" and would "lengthen the payback
22 period" are, essentially, untrue.

1 **Q.** Do you agree with Ms. Morgan's testimony that "[t]he proposed shift of
2 costs from variable to fixed charges is likely to reduce residential and small general
3 service customer participation in utility energy efficiency programs and, thus, reduce
4 the state's capture of all cost-effective energy efficiency?"²

5 A. No. As I have shown in my rebuttal testimony, and also have shown in this
6 testimony by estimating the impact on the payback period, the Company's proposal has a
7 negligible effect on the economics of energy efficiency. Without quantitative evidence,
8 Ms. Morgan simply postulates that there may be a problem but is unable to demonstrate
9 whether, under the Company's proposal, there really is a problem at all. Furthermore, based
10 on Ms. Morgan's reasoning, any level of customer charge other than zero would negatively
11 impact, and therefore be contrary to, the state's goal of achieving all cost-effective energy
12 efficiency.

13 **Q.** Would Ameren Missouri need to offer higher customer rebates in
14 response to its proposal to increase the monthly residential customer charge?

15 A. No. Because Ms. Morgan did not quantify the effect of the Company's
16 proposal on the payback period, she was unable to observe that the impact on the payback
17 period is negligible. With such a negligible impact, it is virtually certain that participation
18 levels will not suffer, which means there would be no need whatsoever to increase customer
19 rebates in response to the Company's proposal to increase the monthly residential customer
20 charge.

² Id., p. 7, l. 1-3.

1 **Q. Ms. Morgan implies that the only difference between the Realistic**
2 **Achievable Potential ("RAP") estimate and Maximum Achievable Potential ("MAP")**
3 **estimate is the payback period.³ Is her implication correct?**

4 **A. No. Her testimony is misleading in this regard. To supplement Ms. Morgan's**
5 **purported definitions of RAP and MAP, the full definitions of those terms from the**
6 **Company's market potential study are shown below:**

7 Maximum achievable potential (MAP) takes into account expected
8 program participation, based on customer preferences resulting
9 from ideal implementation conditions. MAP establishes a
10 maximum target for the EE and DR savings that a utility can hope
11 to achieve through its EE and DR programs and involves
12 incentives that represent a substantial portion of the incremental
13 cost combined with high administrative and marketing costs. It is
14 commonly-accepted in the industry that MAP is considered the
15 hypothetical upper-boundary of achievable savings potential
16 simply because it presumes conditions that are ideal and not
17 typically observed in real-world experience.

18 Realistic achievable potential (RAP) represents what is considered
19 to be realistic estimates of EE and DR potential based on realistic
20 parameters associated with DR and EE program implementation
21 (i.e., limited budgets, customer acceptance barriers, etc.). RAP is
22 of most interest for this study since it represents the mid-point of
23 achievable potential and corresponds to best practices that are
24 attainable since the estimates are tied to known program
25 experience from around the country.⁴

26 It is apparent from these definitions that the difference between RAP and MAP is
27 more than just the payback period. Company witness Richard A. Voytas provided the
28 following testimony in the Company's most recent integrated resource plan filing on this
29 topic, which directly rebuts Ms. Morgan's contentions:

³ Id., p. 8, l. 1-9.

⁴ Global Energy Partners, LLC, AmerenUE Demand Side Management (DSM) Market Potential Study:
Volume I, Global Report No. 1287-1, January 2010, ES-2.

1 **Q. Discuss the conditions that would be considered ideal in order**
2 **to achieve MAP annual energy savings.**

3
4 **A. Ideal conditions include at a minimum:**

- 5
6 1. A regulatory framework that:
7 a. Removes utility disincentives to implement energy
8 efficiency programs;
9 b. Encourages utilities to voluntarily undertake energy
10 efficiency programs;
11 c. Ensures appropriate returns on investments in energy
12 efficiency programs; and
13 d. Provide sufficient certainty of cost recovery;
14 2. Government – Executive, Legislative and Regulatory
15 alignment on state energy efficiency policies;
16 3. Complementary policies by state and local government to
17 utility programs such as appliance efficiency standards,
18 building codes, and tax incentives;
19 4. Statewide energy efficiency customer information and
20 education coordinated with utility efforts.

21
22 **Q. Are there any other ideal conditions that would facilitate the**
23 **achievement of MAP type annual energy savings specified in the**
24 **National Action Plan For Energy Efficiency (“NAPEE”) “Guide For**
25 **Conducting Energy Efficiency Potential Studies” (NAPEE Guide)?**

26
27 **A. Yes. The NAPEE Guide discusses the types of energy efficiency**
28 **potential in Section 2.4. Section 2.5 discusses results from prior potential**
29 **studies. Section 2.5 contains the following statement “Some studies define**
30 **this as the maximum potential that could be captured assuming infinite**
31 **budget (i.e., 100 percent of incremental efficiency costs covered by**
32 **incentives, as well as aggressive marketing and other supporting**
33 **initiatives.)” Therefore, another ideal condition for implementing MAP**
34 **type load reductions is the assumption of an infinite budget. A copy of the**
35 **NAPEE guide is attached in Schedule RAV-E2.⁵ (emphasis in original).**
36

37 **Q. Are there any other important pieces of information that Ms. Morgan has**

38 **mischaracterized about the differences between RAP and MAP?**

⁵ Surrebuttal Testimony of Richard A. Voytas, Case No. EO-2011-0271, p. 5, l. 4-29 and p. 6, l. 1-3.

1 A. Yes. First, from a purely quantitative standpoint, the Company's potential
2 study, which Ms. Morgan cited in her testimony, explains how RAP was estimated compared
3 to MAP and that study shows that the estimates incorporate more than just the difference in
4 payback periods. This is clear from the following statements from that study:

5 To represent a high level of incentives that are assumed under
6 MAP, the take rates for one-year payback were used. Then, to
7 account for the ramping up and refinement of AmerenUE
8 programs in the future, the take rates are assumed to increase by
9 1% in each year in absolute terms.⁶

10 To estimate RAP, two additional factors are introduced into the
11 analysis.

12 - First, awareness is not assumed to be 100%. AmerenUE is just
13 beginning to offer a number of its energy efficiency programs,
14 so awareness of these programs across the entire population is
15 low. To address this, an assumption was made that awareness
16 would be ramped up over an eight-year period. It starts at 25%
17 in 2010 and ramps up to 85% by 2019.

18 - Second, AmerenUE is not likely to offer incentives across all
19 programs that will result in a one-year payback as doing so
20 would lead to substantial budgetary requirements that would
21 cause significant regulatory disruption. So, the take rates at the
22 three-year payback level were considered the most reasonable
23 and realistic representation for generating estimates of RAP.⁷

24 In addition to omitting the aforementioned important methodological description,
25 Ms. Morgan testified that RAP is approximately 50% of MAP.⁸ I do not know how she
26 calculated that amount but it is wrong because RAP is actually two-thirds (66.67%) of MAP.
27 Table 1 below is a copy of the table cited in Ms. Morgan's rebuttal testimony as the source
28 for her statement. For example, if one compared the 2015 RAP energy savings of

⁶ Global Energy Partners, LLC, AmerenUE Demand Side Management (DSM) Market Potential Study:
Volume 4, Global Report No. 1287-1, January 2010, 2-5.

⁷ Id.

⁸ Morgan Rebuttal, p. 8, l. 7-9.

1 1,316 GWh to the 2015 MAP energy savings of 1,950 (1,316/1,950), then it is apparent that
2 RAP is about two-thirds of MAP. The same would hold true when comparing the energy
3 savings between MAP and RAP for 2020, 2025, and 2030. So instead of a 50% reduction,
4 Ms. Morgan should have testified that the reduction in energy savings from MAP to RAP
5 was approximately 33.33%, and that the difference is caused by more than the difference in
6 payback assumptions.

7 **Table 1 – Summary of Energy Efficiency Potential⁹**

	2009	2015	2020	2025	2030
Baseline Electricity Forecast (GWh)	38,839	39,057	40,248	41,899	43,181
Energy Savings (GWh)					
Technical Potential	3,434	9,115	11,098	12,296	12,696
Economic Potential	1,895	4,392	5,475	6,657	7,181
Maximum Achievable Potential	13	1,950	3,943	4,655	4,758
Realistic Achievable Potential	12	1,316	2,627	3,098	3,165
Business as Usual	264	1,399	2,184	2,596	2,740
Energy Savings as % of Baseline					
Technical Potential	8.8%	23.3%	27.6%	29.3%	29.4%
Economic Potential	4.9%	11.2%	13.6%	15.9%	16.6%
Maximum Achievable Potential	0.0%	5.0%	9.8%	11.1%	11.0%
Realistic Achievable Potential	0.0%	3.4%	6.5%	7.4%	7.3%
Business as Usual	0.7%	3.6%	5.4%	6.2%	6.3%

8 **Q. Why is the comparison of RAP and MAP relevant?**

9 A. Ms. Morgan's chief problem with the Company's proposal to increase its
10 monthly residential customer charge is based on the premise that such a change negatively
11 affects the payback period of energy efficiency investments. As support for her position,
12 Ms. Morgan tries to use the comparison between RAP and MAP to demonstrate the link
13 between energy savings and the payback period. Ms. Morgan erroneously concluded that the
14 only difference between RAP and MAP was the payback period (i.e. 3-years for RAP vs.
15 1-year for MAP). In addition, Ms. Morgan erroneously concluded that RAP was 50% of

⁹ Global Energy Partners, LLC, AmerenUE Demand Side Management (DSM) Market Potential Study:
Volume 1, Global Report No. 1287-1, January 2010, ES-3.

1 MAP. Those compounding and erroneous conclusions led Ms. Morgan to then incorrectly
2 conclude that reducing the payback period by two years meant that energy savings would be
3 reduced by half, thus grossly overstating the link between energy efficiency savings and the
4 payback period.

5 **Q. Do you share Ms. Morgan's concerns about how the Company's proposal**
6 **to increase its fixed charge will send mixed messages to customers?**

7 **A.** No. Ms. Morgan testified that "[f]or a period during which Ameren Missouri
8 is proposing to spend nearly \$150 million of ratepayer funds to help its customers increase
9 their energy efficiency and use less electricity, it seems counterproductive that it must also
10 explain why using less will now cost you more."¹⁰ The \$79.5 million revenue requirement
11 associated with the Company's MEEIA programs already obligates the Company to answer
12 questions about "why using less will now cost you more." Given the fact that the Company
13 has provided strong arguments in favor of the proposed increase in the monthly customer
14 charge, which are fully supported by quantitative evidence, any concerns about Ameren
15 Missouri's ability to answer customer questions on the topic should be alleviated. In
16 addition, such a concern should not be an overriding factor when determining whether to
17 approve or deny the Company's residential customer charge proposal.

18 **Q. When the Commission approved the Company's MEEIA proposal in**
19 **Case No. EO-2012-0142 did that fully protect Ameren Missouri from the throughput**
20 **problem, as NRDC suggests in its rebuttal testimony?**¹¹

¹⁰ Morgan Rebuttal, p. 12, l. 2-5.

¹¹ Id., p. 6, l. 5-10.

1 A. No. Ms. Morgan is only partially correct because under the net shared
2 benefits model approved in Case No. EO-2012-0142 Ameren Missouri is only protected from
3 the negative consequences of *its own* energy efficiency programs. Consequently, there is still
4 a "throughput problem" (i.e. a disincentive) for the Company to support third-party programs
5 and/or any efforts to ratify building codes that increase building efficiency or appliance
6 standards that increase appliance efficiency. The Company's proposal to increase the
7 monthly residential service charge will, although in a small way, move toward alignment
8 with those third-party sources of energy efficiency, and will do so with negligible effects on
9 customer payback periods.

10 **Q. Ms. Morgan expresses concerns that shifting cost recovery to fixed**
11 **charges weakens the price signal. Is this a legitimate concern?**

12 A. No. Because Ms. Morgan has not performed any quantitative analysis, she
13 has again overstated the magnitude because the effect of the Company's proposal on the price
14 signal is small. Currently, 91% of total residential costs are collected in the volumetric rate.
15 This would only decrease to 89% if the Company's proposal to increase the monthly
16 residential customer charge to \$12 were approved. I find it hard to believe that going from
17 91% to 89% of costs being collected in the volumetric rate constitutes a change in price
18 signal that should be of serious concern to either customers or the Commission. As support
19 for my belief, I note the Commission's approval of a Straight Fixed-Variable ("SFV") rate
20 design where all non-PGA charges are collected in the customer charge, for one natural gas
21 utility in Missouri (initially in Case No. GR-2006-0422). In approving that rate design, the
22 Commission approved a price signal change to one where 70% (the PGA or gas supply cost
23 portion) of the total costs were to be collected in the volumetric rate and the remaining 30%

1 (i.e., customer and delivery costs) of costs were collected through the monthly customer
2 charge. Under Ameren Missouri's proposal in this case, the Company would still collect
3 89% of its total costs in the volumetric rate, which is well above the shift in cost recovery
4 that was approved for the gas utility mentioned above. Moreover, as I mentioned in my
5 rebuttal testimony, Staff recommended SFV for both residential and small general service in
6 Ameren Missouri's last natural gas rate case (Case No. GR-2010-0363). If Staff's proposal
7 would have been approved,¹² then 55% of residential total costs would have been collected in
8 the volumetric rate which implies that the Company's proposed change in this case is far less
9 than the price signal change that Staff was comfortable with in the Company's last gas rate
10 case.

11 Even more important, as Company witness Wilbon L. Cooper describes, moving
12 customer charges to a level that more accurately reflects the fixed customer-related costs the
13 Company incurs to serve its customers actually improves the price signal.

14 **Q. Did Ms. Morgan provide any other reasons why it is inappropriate for**
15 **the Commission to approve the Company's proposal to increase the residential monthly**
16 **customer charge from \$8 to \$12?**

17 **A.** Yes. Ms. Morgan submitted testimony suggesting that increasing the monthly
18 customer charge was also against basic rate design principles. Mr. Cooper's surrebuttal
19 testimony addresses those claims.

20 **Q. Did the Company contemplate increases in the SGS monthly customer**
21 **charges as part of its MEEIA filing?**

¹² As I noted in my rebuttal testimony, the Company's last gas rate case was concluded by a comprehensive settlement that did not include the SFV rate design.

1 A. No. The MEEIA filing was made January 20, 2012, and the analysis was
2 completed several months beforehand. At the time the analysis was completed, the Company
3 had not decided to request an increase to the SGS customer charge.

4 **Q. Were the SGS monthly customer charges mentioned in the Company's**
5 **unanimous MEEIA stipulation and agreement that was approved by the Commission?**

6 A. No. Since changes in the SGS monthly customer charge levels were not part
7 of the MEEIA case, there was no basis for them to be mentioned.

8 **Q. Has any party identified the inconsistency between the MEEIA case and**
9 **this rate case concerning the SGS monthly customer charges?**

10 A. No. As I was preparing my testimony, I recognized the discrepancy between
11 the two cases.

12 **Q. Can you please explain how a change in the SGS customer charges would**
13 **impact the revenue requirement in this rate case?**

14 A. Yes. The estimated throughput disincentive associated with the Company's
15 MEEIA programs is based on the Company's rate structure. The magnitude of the
16 throughput disincentive is driven by a few key factors, one of which is how much fixed costs
17 are collected in volumetric rates. Therefore, as a class' customer charge is increased, the
18 throughput disincentive for the Company to provide an energy efficiency program for its
19 customers is reduced. The MEEIA analysis was conducted with the assumption that the SGS
20 monthly customer charges would be unchanged. If the Commission were to approve both the
21 Company's request to increase the SGS monthly customer charges and the revenue
22 requirement included in the MEEIA stipulation, then there would be a small amount of the
23 throughput disincentive that would be double-counted and thus over collected.

1 **Q.** Have you calculated the impacts to the revenue requirement associated
2 with increasing the SGS monthly customer charges?

3 A. Yes. Table 2 below summarizes the revenue requirements with different
4 customer charges for both Residential and SGS. In short, the approval of the Company's
5 proposal to increase the SGS monthly customer charges would reduce the requested revenue
6 requirement by \$47,056.00 and reduce the sharing portion related to the throughput
7 disincentive from 25.30% to 25.26%. As with the residential customer charge, any level of
8 customer charge approved between the current charge and the proposed charge can be
9 interpolated.

10 **Table 2 – Customer Charge Changes and the Revenue Requirement**

Customer Charge	100% TD-NSB*	90% TD-NSB (Rev. Req.)	NSB Percent
\$8 RES	\$33,832,619	\$30,449,357	26.34%
\$12 RES	\$32,486,617	\$29,237,956	25.30%
\$12 RES + SGS Change	\$32,434,334	\$29,190,900	25.26%
Difference from Company	\$(52,283)	\$(47,056)	(0.04)%

11 *TD-NSB: Throughput Disincentive portion of Net Shared Benefits (3-year annuity)

12 **Q.** Does this conclude your surrebuttal testimony?

13 A. Yes, it does.

In the Matter of Union Electric Company d/b/a Ameren)
Missouri's Tariffs to Increase Its Annual Revenues for) File No. ER-2012-0166
Electric Service.)

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

1. My name is William R. Davis. I am employed by Ameren Services Company as Senior Corporate Planning Analyst in the Corporate Planning Department.

3. I hereby swear and affirm that my answers contained in the attached testimony to the questions therein propounded are true and correct.

William R Davis
William R. Davis

Subscribed and sworn to before me this 7th day of September, 2012.

Tuli Donohue
Notary Public

My commission expires: 2/17/2013

