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Witness: Philip Mosenthal
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BEFORE THE PUBLIC SERVICE COMMISSION
OF THE STATE OF MISSOURI

In the Matter of Union Electric Company d/b/a Ameren Missouri's 2nd Filing to Implement Regulatory Changes in Furtherance of Energy Efficiency as Allowed by MEEIA	**)**	**File No. EO-2015-0055**

SURREBUTTAL TESTIMONY OF PHILIP MOSENTHAL

ON BEHALF OF

NRDC

April 27, 2015

Q. Please state your name and business address.

A. Philip H. Mosenthal, Optimal Energy, Inc., 10600 Route 116, Hinesburg, VT 05461.

Q. On whose behalf are you testifying?

A. I am testifying on behalf of Natural Resources Defense Council (NRDC). All work developing my testimony has been completed by me or under my direction.

Q. Are you the same Philip H. Mosenthal that filed rebuttal testimony on behalf of NRDC on March 20, 2015 in this Docket?

A. Yes. A summary of my qualifications was provided in my rebuttal testimony.

Q. Please summarize your Surrebuttal Testimony.

A: My testimony, the substance of which is generally shared by nearly all other intervening parties in this case, is that Ameren's potential study reflects an unreasonably low estimate of cost-effective and achievable efficiency potential and that Ameren's proposed goals are too low to be consistent with the MEEIA objective of pursuing all cost-effective efficiency. Further, I support the rebuttal testimony of Annika Brink of the National Housing Trust calling for more aggressive efforts related to the affordable multifamily housing market. In support of both my own and Ms. Brink's testimony, I have attached as Appendix PM-1, a document providing an analysis developed by Optimal Energy estimating the achievable efficiency potential in Missouri among the affordable multifamily housing sector.

Finally, I oppose one portion of Staff witness John Rogers' position in his rebuttal testimony in which he seems to suggest that any efficiency portfolio filed under MEEIA must directly benefit *every single customer* by resulting in lower electric rates. While it's true that all customers benefit from using energy efficiency as a least cost resource, Mr. Roger's testimony could be interpreted in a way that would preclude any further investment in energy efficiency programs, which would contradict the balance of his testimony as well as the MEEIA Statute.

Q: What are your comments regarding the levels of achievable potential Ameren claims are realistic and its proposed MEEIA Plan savings targets?

A: As explained in my rebuttal testimony, I believe Ameren's estimates of realistic and maximum achievable potential are unreasonably low. I further find that its MEEIA Plan goals are unreasonably low and inconsistent with the MEEIA Statute's intent of pursuing all cost-effective efficiency. I note that other intervening parties arrived at the same conclusions in their rebuttal testimonies. I support these parties' virtually unanimous conclusion that Ameren can and should pursue much higher MEEIA savings goals. Further, and in accordance with the rebuttal testimony of Sierra Club witness Tim Woolf, I encourage the PSC to direct Ameren to revise its MEEIA Plan to achieve savings goals consistent with or higher than the minimum targets listed in the MEEIA rules. I also support Staff Witness Rogers' position opposing Ameren's proposed performance incentive because it is not based on "measurable and verifiable efficiency savings," as determined by EM&V.[1]

[1] Rogers' Rebuttal Testimony at 3.

Q. What are your comments on Witness Brink's rebuttal testimony on behalf of the National Housing Trust?

A. Ms. Brink broadly discusses best practices for efficiency programs targeted to the affordable multifamily housing sector and the significant efficiency potential and non-energy benefits that can result from these practices. I support Ms. Brink's position that Ameren's MEEIA Plan is not currently designed to capture all cost-effective achievable savings in the affordable multifamily housing sector. Attached to my testimony please find Appendix PM-1, a short paper on the achievable efficiency potential in the affordable multifamily housing sector in Missouri. This paper was published by "Efficiency For All," a consortium of national organizations including the National Housing Trust and NRDC. My firm, Optimal Energy, assisted in the development of this document and performed the analysis of cost-effective achievable potential referenced therein.

Q. What position does Staff witness John Rogers take in his rebuttal testimony related to rate impacts and customer benefits?

A. As mentioned above, Mr. Rogers states that Ameren's estimated cost-effective achievable potential savings and MEEIA goals are too low and its program costs per kWh saved are too high, positions which I support.[2] However, Mr. Rogers also encourages the Commission to reject Ameren's Plan because he believes it violates the MEEIA Statute. He notes the Statute states:

> "Recovery for such programs shall not be permitted unless the programs are approved by the commission, result in energy or demand savings and *are beneficial to all customers in the customer class in which the programs are proposed, regardless of whether*

[2] See, for example, Rogers Rebuttal Testimony at 3.

the programs are utilized by all customers." Section 393.1075.4 [Emphasis added][3]

Mr. Rogers goes on to interpret this clause to mean that *each and every individual customer must experience lower electricity rates as a result of efficiency programs* in order to be in compliance with the MEEIA Statute:

> "Staff interprets 393.1075.4 and 4 CSR 240-20.094(2)(C) to mean that the Commission can only approve DSM programs and a DSIM which are expected to provide some benefits for each customer in each customer class including each customer who does not participate directly in any of the programs. For the customer who never participates directly in any of the DSM programs, benefits will only occur if the impact of the Plan causes rates – at some point in time – to be lower than the rates that would have occurred if there were no DSM programs and no DSIM." [4]

Q. Do you agree with Staff Witness Rogers' interpretation of the MEEIA Statue?

A: No. I believe Mr. Rogers' statutory interpretation is incorrect. When read in the full context of the entire MEEIA Statute, Section 393.1075.4's phrase "all customers in a class," should be interpreted to mean the entire class of customers *in aggregate*, rather than each and every individual customer separately.

Moreover, the benefits that must adhere to all customers are not limited by statutory language to reduced rates, as Mr. Rogers suggests. Rather, any benefit, whether direct or indirect, substantial or nominal, rate-related or otherwise that accrues to "all customers in the customer class" satisfies this condition to recovery. For example, benefits related to improvements to the economy, environment, public health and other areas will still accrue to all customers.

[3] Rogers Rebuttal Testimony at 2.
[4] Rogers Rebuttal Testimony at 19.

Staff's interpretation would render the MEEIA statute internally inconsistent. As Mr. Rogers' himself notes, the primary goal articulated in the Statute is for utilities to pursue a "goal of achieving all cost-effective demand-side savings."[5] As I discuss below, if MEEIA programs are burdened with the additional condition that each individual customer's rates must also be reduced, the implementation of all "cost-effective" MEEIA programs will be impossible. It is not possible to ensure 100% customer participation, as programs are voluntary and even with the best, most aggressive and broad-based programs there will always be some customers who decline to participate. In fact, the MEEIA Statute clearly intended for not all customers to participate because Section 393.1075.14(1) explicitly prohibits participation by any customers who have received various state tax credits.

Staff's interpretation contradicts the MEEIA statute's process for Commission approval. The MEEIA statute provides that programs shall be approved or rejected based on the Total Resource Cost (TRC) test, which compares the costs and benefits to society as a whole. The TRC focuses on the total net costs of energy services to all ratepayers collectively, which is sometimes referred to as the utility revenue requirement. This TRC criterion is entirely consistent with the primary goal of the integrated resource planning (IRP) process in Missouri which is to adopt a preferred resource plan that minimizes the present value of revenue requirements.[6]

Mr. Roger's testimony could be interpreted as advancing a different and widely discredited test governing the approval process for MEEIA programs--namely, the Ratepayer Impact Measure (RIM) test. The RIM test considers the impact of efficiency

[5] Rogers Rebuttal Testimony at 7, citing Section 4 CSR-20.094(3)(A)(1) of the MEEIA Statute .
[6] 4 CSR 240-22.010(2)(B) states: "the utility shall…Use minimization of the present worth of long-run utility costs as the primary selection criterion in choosing the preferred resource plan."

programs on rates, as opposed to the total cost of energy services. As I explain below, most well designed efficiency programs that attempt to maximize cost-effective efficiency based on a TRC test almost always fail the RIM test. Therefore, Mr. Rogers' interpretation of the Statute is internally inconsistent with the primary statutory goal of pursuing all cost-effective efficiency and explicitly defining cost-effectiveness as being based on the TRC test. For this reason I believe it is clear this could not have been the legislative intent and may not have been the intent of Staff in this testimony.

It is worth noting that supply-side resource investments are not subject to the RIM test, so applying this test only to demand-side resources would violate Missouri's IRP intent to place supply-side and demand-side resources on an equal footing, as well as the explicit statement in MEEIA that "it shall be the policy of the state to value demand-side investments equal to traditional investments in supply and delivery infrastructure and allow recovery of all reasonable and prudent costs of delivering cost-effective demand-side programs."[7]

Moreover, I note that Mr. Rogers may well have not meant to suggest the RIM test as a new criterion for Plan approval, because other segments of his testimony strongly support the notion that Ameren's proposed goals are not aggressive enough, and should be higher.[8] As I discuss below, I believe adopting Mr. Rogers' suggestion that goals should be increased, which I strongly support, would further exacerbate the rate impacts Mr. Rogers is concerned about.

[7] Section 393.1075.3.
[8] Rogers Rebuttal Testimony at 15.

Q. Please explain why cost-effective efficiency programs can result in higher rates but lower bills?

A: Pursuit of all cost-effective efficiency using a TRC test almost always results in some increase in rates despite directly lowering bills and saving all ratepayers money collectively, and resulting in a lower revenue requirement for the utility. This is because as utility sales go down (from cost-effective efficiency) the utility will lose revenue and must recover its fixed costs over a smaller pool of electric load, thus putting upward pressure on per unit rates. Because the electric utility industry typically has very large fixed costs (in the short-term) related to major capital investments in infrastructure and overhead, reducing electric sales generally requires higher per kWh rates to still recover these fixed costs. Put simply, the more electricity ratepayers consume, typically the lower rates will be.[9] In other words, one can lower rates simply by encouraging inefficiency and wasteful energy use. While this can drive rates lower, it still increases total ratepayer costs of energy services, and is clearly not a desirable societal outcome. Fundamentally, customers do not care what their *rates* are, they care what their *bills* are. Customers are clearly better off if they can reduce their total bills while still meeting their energy service needs, even if the per unit rate increases.

Q. Do other jurisdictions rely on the RIM test as a primary cost-effectiveness screening criterion?

A. No. I believe that all jurisdictions in the U.S. have now explicitly rejected the RIM test as a primary test for ratepayer-funded efficiency programs. A national survey by the American Council for an Energy Efficient Economy in 2012 revealed that only one

[9] I note this is somewhat dependent on the time of usage and it is possible greater usage during peak periods can actually increase rates if the retail rate a customer pays is less than the peak avoided cost of supply.

state, Virginia, considered the RIM test as the primary cost-effectiveness criteria.[10] However, subsequent to that survey, even Virginia passed a law rejecting the RIM test as a primary criterion.[11]

Q. Please explain further the dynamics that result in cost-effective efficiency causing rates to increase.

A. As discussed above, when customers save energy through efficiency they reap savings in energy costs and their bills go down. However, this customer savings also represents lost revenue to the utility that it otherwise would have collected. While some portion of this lost revenue is offset by utility savings in variable costs (represented by the utilities' avoided cost benefits) a portion of this lost revenue was otherwise contributing to covering costs that are relatively fixed. Exacerbating this is that programs by definition reduce electric loads from what they would otherwise have been, thereby reducing the sales available to recover these lost revenues. In addition, the utilities must also recoup the actual costs of running programs from ratepayers, however, those programs costs in and of themselves are typically not the main driver of rate impacts, as I show below.

Q. Are the lost revenues that a utility incurs from efficiency a societal cost?

A. No. While lost revenues can and do create disincentives for utilities to pursue cost-effective efficiency, they do not represent a true cost to society. Rather, lost revenues represent a transfer payment between participants and non-participants. Effectively, under Ameren's proposed throughput disincentive the net lost revenue occurring from bill savings to program participants are reimbursed to Ameren by being collected from all

[10] Regulatory Assistance Project, *Energy Efficiency Cost-Effectiveness Screening, How to Properly Account for 'Other Program Impacts' and Environmental Compliance Costs,* November, 2012, at 14 and footnote 12.
[11] See Code of Virginia, C. 821, §§ 56-576, approved April 18, 2012.

customers. However, these lost revenues are not a new incremental cost that society incurs because of the programs, but rather a slight redistribution of costs already incurred. Further, as mentioned above, all customers benefit from the ancillary benefits of efficiency programs such as an improved economy and environment.

The Regulatory Assistance Project, an internationally recognized non-profit that provides expert assistance and advice to regulators and other government officials on energy and environmental issues, notes:

> Applying the RIM Test to screen efficiency programs will not result in the lowest cost to society or the lowest cost to customers on average. Instead it will lead to the lowest rates (all else being equal). Achieving the lowest rates is not the primary goal of utility planning and regulation, however, especially if lower rates lead to higher costs to customers on average…..A strict application of the RIM Test can result in the rejection of large amounts of energy savings and the opportunity for large reductions in many customers' bills in order to avoid what are often small impacts on non-participants' bills. From a public policy perspective, such a trade-off is illogical and inappropriate.[12]

Q. Would increasing the savings goals and reducing Ameren's program costs per kWh saved resolve Mr. Rogers' concern around rate impacts?

A. No. In all likelihood this would exacerbate the rate impacts. In Mr. Rogers' testimony he shows the rate impacts by component, compiled from Ameren's plan work papers, which I repeat below for residential and large general service rates.[13]

[12] Regulatory Assistance Project, *Energy Efficiency Cost-Effectiveness Screening, How to Properly Account for 'Other Program Impacts' and Environmental Compliance Costs,* November, 2012, at 16-17.
[13] Rogers Rebuttal Testimony at 20, 21.

Residential Rate Impact										
	2016	2017	2018	2019	2020	2021	2022	2023	2024	2025
Program Cost Recovery	1.4%	1.2%	1.5%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
Performance Mechanism	0.4%	0.3%	0.6%	0.0%	0.3%	0.3%	0.0%	0.0%	0.0%	0.0%
Avoided Energy	-0.1%	-0.3%	-0.4%	-0.5%	-0.4%	-0.4%	-0.4%	-0.3%	-0.3%	-0.4%
Avoided Capacity	0.0%	0.0%	-0.1%	-0.2%	-0.3%	-0.3%	-0.3%	-0.2%	-0.2%	-0.2%
Avoided T&D	0.0%	0.0%	-0.1%	-0.1%	-0.1%	-0.1%	-0.1%	0.0%	0.0%	0.0%
Lower Billing Units	0.0%	0.0%	0.4%	0.4%	0.9%	1.3%	1.3%	1.3%	1.3%	1.3%
Total Rate Impact	**1.6%**	**1.3%**	**1.9%**	**-0.3%**	**0.5%**	**0.8%**	**0.6%**	**0.6%**	**0.7%**	**0.6%**

LGS										
	2016	2017	2018	2019	2020	2021	2022	2023	2024	2025
Program Cost Recovery	1.7%	2.0%	2.1%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
Performance Mechanism	0.6%	0.8%	1.0%	0.0%	0.6%	0.6%	0.0%	0.0%	0.0%	0.0%
Avoided Energy	0.0%	0.0%	-0.1%	-0.2%	-0.4%	-0.5%	-0.5%	-0.5%	-0.6%	-0.6%
Avoided Capacity	0.0%	-0.1%	-0.1%	-0.1%	-0.1%	-0.1%	-0.1%	-0.1%	-0.1%	-0.1%
Avoided T&D	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
Lower Billing Units	0.0%	0.0%	0.6%	0.6%	1.2%	1.7%	1.7%	1.7%	1.7%	1.7%
Total Rate Impact	**2.3%**	**2.7%**	**3.4%**	**0.3%**	**1.3%**	**1.7%**	**1.0%**	**1.0%**	**1.0%**	**1.0%**

As can be seen, in the three years of the Plan when programs are actively being delivered, the biggest impact on rates is from recovery of program costs. This is to be expected, as resources are invested up-front to run programs that provide most of their benefits over a longer period of time. However, after the programs end the customer savings, listed above as "lower billing units," begin to become the dominant factor. It is clear from the above tables that once full savings and amortization is achieved in 2021, the upward rate impact from lower billing units (lost revenue) exceeds the downward rate impact of avoided energy and capacity cost benefits by a large margin. For the residential sector lost billing units create a 1.3% *increase* in rates, while the avoided cost benefits only range from 0.5% to 0.7% *decrease* in rates each year. For the large general service class, this is even worse with lost billing units creating a 1.7% *increase* in rates, while the avoided cost benefits only range from 0.5% to 0.6% *decrease* in rates each year.

What these tables show is that even if the programs could be delivered for free, one would still see increased rate impacts in the later years. Clearly, lowering customers'

energy costs in aggregate for free is societally beneficial and consistent with MEEIA intent. Effectively, because the lower billing units put more upward pressure on rates than the variable avoided cost savings provide downward pressure, Mr. Rogers' proposal that Ameren should be able to increase goals and reduce its program costs per kWh of savings, which I support, would simply work to further increase rate impacts, all else equal.[14] In other words, if Mr. Rogers is suggesting the RIM test, then the result would be to impose an unreasonable new requirement beyond the TRC test which is the only test explicitly articulated in the Statute. Such a Commission policy, if adopted, would make Missouri the only state in the U.S. imposing a requirement that programs must pass the RIM test and would confer upon Missouri the dubious distinction of having the most regressive regulatory policies--as they relate to ratepayer funded efficiency programs--in the Nation.

Q. Does this conclude your testimony?

A. Yes.

[14] I note that an extreme focus on pursuing demand response and large peak load reductions while at the same time minimizing broader annual kWh savings, and therefore minimizing lost revenues, could in theory result in an efficiency portfolio that would pass the RIM test. However, this would by definition violate the MEEIA intent of pursuing all cost-effective efficiency based on the TRC test.