Exhibit No.: _____
Issue(s): Potential Study and Savings Targets/ DSIM Revenue Requirement/ Utility Performance Incentive/ Variances from MEEIA rules
Witness/Type of Exhibit: Marke/Rebuttal
Sponsoring Party: Public Counsel
Case No.: EO-2015-0055

REBUTTAL TESTIMONY

OF

GEOFF MARKE

Submitted on Behalf of
the Office of the Public Counsel

UNION ELECTRIC COMPANY D/B/A AMEREN MISSOURI'S

Case No. EO-2015-0055

** **

Denotes Highly Confidential Information that has been redacted

March 20, 2015

NP

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	)))))	EO-2015-0055

AFFIDAVIT OF GEOFF MARKE

STATE OF MISSOURI)
) ss
COUNTY OF COLE)

Geoff Marke, of lawful age and being first duly sworn, deposes and states:

1. My name is Geoff Marke. I am a Regulatory Economist for the Office of the Public Counsel.

2. Attached hereto and made a part hereof for all purposes is my rebuttal testimony.

3. I hereby swear and affirm that my statements contained in the attached affidavit are true and correct to the best of my knowledge and belief.

Geoff Marke

Subscribed and sworn to me this 20th day of March 2015.

NOTARY PUBLIC NOTARY SEAL STATE OF MISSOURI

JERENE A. BUCKMAN
My Commission Expires
August 23, 2017
Cole County
Commission #13754037

Jerene A. Buckman
Notary Public

My commission expires August 23, 2017.

TABLE OF CONTENTS

REBUTTAL TESTIMONY

OF

GEOFF MARKE

UNION ELECTRIC COMPANY

d/b/a Ameren Missouri

CASE NO. EO-2015-0055

I. INTRODUCTION

Q. Please state your name, title and business address.

A. Dr. Geoffrey Marke, Economist, Office of the Public Counsel (OPC or Public Counsel), P.O. Box 2230, Jefferson City, Missouri 65102.

Q. Please describe your education and employment background.

A. I received a Bachelor of Arts Degree in English from The Citadel, a Masters of Arts Degree in English from The University of Missouri, St. Louis, and a Doctorate of Philosophy in Public Policy Analysis from Saint Louis University (SLU). At SLU, I served as a graduate assistant where I taught undergraduate and graduate course work in urban policy and public finance. I also conducted mixed-method research in transportation policy, economic development and emergency management.

I have been in my present position with OPC since April of 2014 where I have been responsible for economic analysis and policy research in electric and gas utility operations. Prior to joining OPC, I was employed by the Missouri Public Service Commission as a Utility Policy Analyst II in the Energy Resource Analysis Section, Energy Unit, Utility Operations Department, Regulatory Review Division. My primary duties in that role involved reviewing, analyzing and writing recommendations concerning electric integrated resource planning, renewable energy standards, and demand-side management programs for all investor-owned electric utilities in Missouri. I have also been employed by the Missouri

Department of Natural Resources (later transferred to the Department of Economic Development), Energy Division where I served as a Planner III and functioned as the lead policy analyst on electric cases. I have worked in the private sector, most notably serving as the Lead Researcher for Funston Advisory based out of Detroit, Michigan. My experience with Funston involved a variety of specialized consulting engagements with both private and public entities.

Q. Have you testified previously before the Missouri Public Service Commission?

A. Yes, prior to this case I submitted written testimony in EO-2012-0142, EO-2014-0189, ER-2014-0258, ER-2014-0351, GR-2014-0086 and GR-2014-0152.

Q. Have you been a member of, or participate in, any work groups, committees, or other groups that have addressed electric utility regulation and policy issues?

A. Yes. I am currently a member of the National Association of State Consumer Advocates (NASUCA) Distributed Energy Resource Committee which shares information and establishes policies regarding energy efficiency, renewable generation, and distributed generation, and considers best practices for the development of cost-effective programs that promote fairness and value for all consumers. I am also a member of NASUCA's Electricity Committee that discusses current issues affecting residential electric consumers. Additionally, I have been selected to participate as a "consumer" voice on several working committees toward the development of a Missouri's Comprehensive State Energy Plan currently being undertaken by the Missouri Division of Energy.

Q. What is the purpose of your rebuttal testimony?

A. The purpose of this testimony is to respond to Ameren Missouri's Missouri Energy Efficiency Investment Act (MEEIA) Cycle II[1] Application in EO-2015-0055, specifically:

- Overall Differences between Ameren Missouri's Cycle I and Cycle II
- Concerns with Ameren Missouri's Market Potential Study and Saving Targets:
- Concerns with Ameren Missouri's Proposed Demand-Side Investment Mechanism Revenue Requirement
- Opposition to Ameren Missouri's Request for Certain Variances from MEEIA Rules

Q. Please summarize your primary positions and conclusions.

A. Public Counsel recommends that the Commission reject Ameren Missouri's MEEIA Cycle II proposal as it is currently filed. Ameren Missouri's application includes excessive variances from applicable MEEIA rules that distort the intention behind the Demand-Side Investment Mechanism (DSIM) and virtually assure Ameren Missouri of an over-collection of lost revenues and utility incentives. Moreover, Ameren Missouri's MEEIA Cycle II proposal is predicated on artificially downward adjusted saving targets that understate the overall potential for energy efficiency adoption. Furthermore, Ameren Missouri's application does not explore opportunities for joint delivery or for maximizing equitable participation rates across "hard-to-reach" demographics to minimize rate impact. The end result is an application that shifts risk to ratepayers and produces fewer savings at greater costs relative to Ameren Missouri's first MEEIA application.

Table 1 illustrates the differences between the two applications based only on program costs relative to MWh of each applications respective energy savings target.

[1] Cycle II means Ameren Missouri's second three-year portfolio of energy efficiency programs. Cycle I represented 2013-2015. This second cycle of programs will represent 2016-2018.

Table 1: MWh costs per targeted savings comparison between Ameren Missouri Cycle I and Cycle II applications

	3-year initially proposed budget target	3-year initially proposed energy target	Program $ per MWh saved
Ameren Missouri 2013-2015	$145,293,213	793,102 MWh	$183.20
Ameren Missouri 2016-2018	$134,461,396	426,382 MWh	$315.35

The differences between the two applications are further heightened by Ameren Missouri's Cycle II proposal to:

- Raise the throughput disincentive amount of net shared benefits for the company from 26.34% to 32.57%.
- Calculate the net shared benefits using the utility cost test (UCT) that omits out-of-pocket expenses by ratepayers and fails to factor in the utility performance incentive as a cost; thus increasing the Company's throughput disincentive.
- Increase the performance incentive amount at 130% of the savings target from 6.19% of net shared benefits to 17.2% of net shared benefits—a 178% increase.
- Minimize the evaluation, measurement and verification (EM&V) as well as the Commission's independent auditor's role by deeming energy savings prospectively.
- Lower energy savings targets to roughly half of what was filed in the first application.
- Collect all related costs prospectively.

Note that with the exception of the lower energy savings targets, none of the aforementioned bullet points are factored in table 1. Each of these bullet points represents additional costs for ratepayers coupled with greater risk. To appreciate the potential impact an approved Ameren

Missouri's Cycle II application could have on ratepayers a closer examination of the differences between the two applications is required.

II. OVERALL DIFFERENCES BETWEEN AMEREN MISSOURI'S CYCLE I AND II

Q. Please compare the differences in energy and demand saving targets between Ameren Missouri's 1st and 2nd MEEIA applications.

Table 2 and table 4 are reprinted from Ameren Missouri's applications and included here for comparison purposes as they represent the difference in incremental energy savings and costs between the two MEEIA cycle applications:

Table 2: Incremental savings and costs in Ameren Missouri's MEEIA Cycle I application[2]

Table 1.2 Incremental Savings and Costs

	2013	2014	2015
Energy Delivery (MWH)	37,476,879	37,844,450	38,146,206
Energy Efficiency Savings (MWH)	240,397	255,445	297,260
System Peak (MW)	7,533	7,591	7,640
Peak Demand Reductions (MW)	39	54	77
Total Budget	$35,239,613	$45,965,915	$64,087,685
% MWH reduction (from energy delivery)	0.6%	0. 7%	0.8%
% MW reduction (from system peak)	0.5%	0.7%	1.0%

Note: The projected energy delivery, energy savings, system peak, and demand reductions are based on values at the meter.

[2] File No. EO-2012-0142, *Application to Approve DSIM Filing, Request for Variances and Motion to Adopt Procedural Schedule*, filed on 1/20/2012. p.10.

Table 3: Incremental savings and costs in Ameren Missouri's MEEIA Cycle II application[3]

Table 1.1: Incremental Energy Savings and Costs

	2016	2017	2018
Energy Delivery (MWh)	36,382,264	36,456,504	36,637,652
Energy Efficiency Savings (MWh)	136,720	134,333	155,329
System Peak (MW)	7,435	7,440	7,457
Peak Demand Reductions (MW)	37	36	41
Total Budget	$42,828,113	$43,488,272	$48,145,011
%MWh reduction (from energy delivery)	0.4%	0.4%	0.4%
%MW reduction (from system peak)	0.5%	0.5%	0.6%

- The three-year total for energy savings in the 1st MEEIA cycle was 793,102 MWh
- The three-year total for demand savings in the 1st MEEIA cycle was 170 MW
- The three-year total for energy savings in the 2nd MEEIA cycle is 426,382 MWh.
- The three-year total for demand savings in the 2nd MEEIA cycle is 114 MW.

Ameren Missouri's 2nd MEEIA cycle application represents a 46.23% lower energy savings target and a 23% lower demand savings target relative to its first approved MEEIA cycle application.

Q. How do the budgeted, actual to date, and proposed program costs differ between the two MEEIA cycles?

Table 4 provides a breakdown of budgeted, actual to date and proposed program costs between the two MEEIA cycles. Note that the initial proposed budget from Cycle I differs from the budget as a result of differences between estimated and actual contracts with third-party vendors. Cycle II's initially proposed budget will likely have some variation in its final form.

[3] File No. EO-2015-0055, *Application to Approve DSIM Filing, Request for Variances and Motion to Adopt Procedural Schedule*, filed on 12/22/2014. p. 6.

Table 4: Annual and cumulative budgets for Ameren Missouri's MEEIA I and II cycles

	Initially Proposed 2013-2015	**Final Budgeted 2013-2015**	**Realized 2013-2015**	**Initially Proposed 2016-2018**
Year 1	$35,239,613	$36,119,299	$34,432,402	$42,828,113
Year 2	$45,965,915	$47,120,632	$41,518,090	$43,488,272
Year 3	$64,087,685	$64,087,697		$48,145,011
Total	$145,293,213	$147,327,629		$134,461,396

Ameren Missouri has come in under budget in the first two years of its MEEIA Cycle 1 portfolio budgeted amounts. Moving forward, Ameren Missouri is proposing that program costs be reduced by roughly $13 million in its MEEIA Cycle 2 proposed budget.

Q. How did the proposed throughput disincentive in 2013 and the 2014 deemed net benefit amount compare to what was filed in the 1st MEEIA cycle?

A. The first two years of program activity have exceeded Cycle I targets by over $100 million dollars. Table 5 represents the deemed net benefits compared to the targeted net benefit amount for the PY2013 and PY2014. The deemed net benefit amount is utilized for purposes of the throughput disincentive. The throughput disincentive will be discussed in greater length in this testimony.

Table 5: Difference in planned vs. reported deemed net benefit amount for PY2013 & PY2014

Net Benefits	**PY2013**	**PY2014**	**Portfolio to Date**
MEEIA Planned Net Benefits	$101,196,620.40	$118,248,207	$219,444,828
Deemed Net Benefits	$141,010,520	$184,907,69	$325,918,210
Difference	$39,813,900	$66,659,4830	$106,473,383

Ameren Missouri's $325,918,210 deemed net benefit amount for the first two years represents 148.52% of its Commission approved MEEIA planned net benefit amount through the first two years of Cycle 1.

Q. Where is Ameren Missouri in relation to meeting its performance incentive?

A. The quantification of the final performance incentive is still subject to change, but as a result of the second non-unanimous stipulation and agreement for program year 2013 Change Requests in EO-2012-0142, parties agreed that final PY2013 energy savings total was 347,360 MWh and the net shared benefit amount was $123,646,681. Table 6 places the energy savings amount within the parameters of the performance incentive target:

Table 6: Performance incentive progress to date

2013 MWh	2013-2015 MWh Savings Target adjusted for known opt-out	% of three-year target realized after one-year
347,360	821,820	42.27%

The potential pay out for Ameren Missouri's performance incentive is dependent on the energy and demand savings as well as the calculated net shared benefit amount. I have included only the energy savings here for simplicity purposes. Regardless, Ameren Missouri realized almost half of its targeted energy savings after only one year of programs to date.

Q. Please summarize what the data presented above suggests.

A. The data from Cycle I suggests that Ameren Missouri has exceeded its Commission approved saving targets and come in under budget to date. The data also suggests that Ameren Missouri's MEEIA Cycle II application saving targets are roughly half of what its targets were when approved in its first application. To put this into perspective, if Ameren Missouri were to repeat its first year savings experience from MEEIA Cycle I, it would have achieved 81.47% of its three-year goal for MEEIA Cycle II.

Additionally, according to Ameren Missouri's 2014 Annual Demand-Side Report (EO-2015-0210), reliance on how Ameren Missouri is proposing to calculate its deemed net savings for determining the throughput disincentive (or lost revenues) will result in a collection of 149% amount greater amount than what was planned for in their Cycle I application. Assuming

there are no prudency review issues, Ameren Missouri will be collecting 26.34% of that portfolio amount ($325,918,210 for two-years). For Cycle II, Ameren Missouri is requesting that the throughput disincentive percent be increased to 32.57%. Table 7 provides the breakdown of the MEEIA planned, the first two known years, and Cycle II's proposed sharing percentage for illustrative purposes.[4]

Table 7: Difference in planned vs. claimed deemed net benefits in PY2013 and PY2014

Net Benefits	**PY2013**	**PY2014**	**Portfolio to Date**	**Utility Share at 26.34%**	**Utility Share At 32.57%**
MEEIA Planned Net Benefits	$101,196,620	$118,248,207	$219,444,828	$57,801,767	$71,473,180
Claimed Deemed Net Benefits	$141,010,520	$184,907,690	$325,918,210	$85,846,856	$106,151,560
% Difference	+ 139%	+156%	+149%		

OPC believes that the 149% difference is, in part, a result of not factoring in the out of pocket expenses from ratepayers as required by the total resource cost test (TRC), as well as the omission of a performance incentive amount that will be a realized cost borne by ratepayers at the conclusion of Cycle I. Ameren Missouri is proposing similar omissions for Cycle II.

Q. The first two program years exceeded the energy savings goals in Cycle I, why are they roughly half for Cycle II?

A. To understand why Ameren Missouri is projecting such smaller energy and demand savings it is important to understand the methodological approach to Ameren Missouri's 2013 Market Potential Study that provided the basis for the saving targets that are being proposed in its Cycle II application.

[4] Ameren Missouri is proposing to calculate net benefits utilizing the utility cost test which omits out-of-pocket expenses paid by ratepayers. OPC believes this adjustment runs counter to policy behind the MEEIA statute and Commission rules and will address this issue and its impacts in greater detail later in this testimony.

III. CONCERNS WITH AMEREN MISSOURI'S MARKET POTENTIAL STUDY AND SAVING TARGETS

Q. Please describe Ameren Missouri's 2013 Market Potential Study.

A. Ameren Missouri's 2013 Market Potential Study consisted of the following volumes of analysis:

- Volume 1: Executive Summary
- Volume 2: Market Research
- Volume 3: Energy Efficiency Analysis
- Volume 4: Demand Response Analysis
- Volume 5: Distributed Generation Analysis
- Volume 6: Demand-Side Rate Analysis
- Volume 7: The Potential Impact of Demand-Side Rates for Ameren Missouri: Final Report—The Brattle Group

The Market Potential Study analysis is utilized to comply with Chapter 22 rules as they pertain long-range integrated resource planning purposes and to set the energy and demand-side targets for Ameren Missouri's MEEIA portfolio and programs. Volumes 2, 3, and 4 represent the most relevant parts of the market potential study for purposes of setting the energy and demand targets. The Market Potential Study includes a number of different variables including market size, peak factors, appliance/equipment vintage distribution and saturation levels, annual kWh intensity by class, electricity prices, known environmental compliance, customer growth forecasts, and other variables.

These results were combined with market research data (survey results) of likely energy efficiency adoption (based on 1, 3, and 5-year payback assumptions) as well as attitudinal responses to surveyed customer knowledge and perception on items such as energy efficiency, Ameren Missouri's role and trustworthiness (e.g. Ameren Missouri "is a credible source of information for EE?")[5] and views on the legitimacy of climate change. These baseline and projected estimates (e.g., existing housing stock), the responses to likely energy efficiency adoption over various payback years, and the market research data on attitudinal

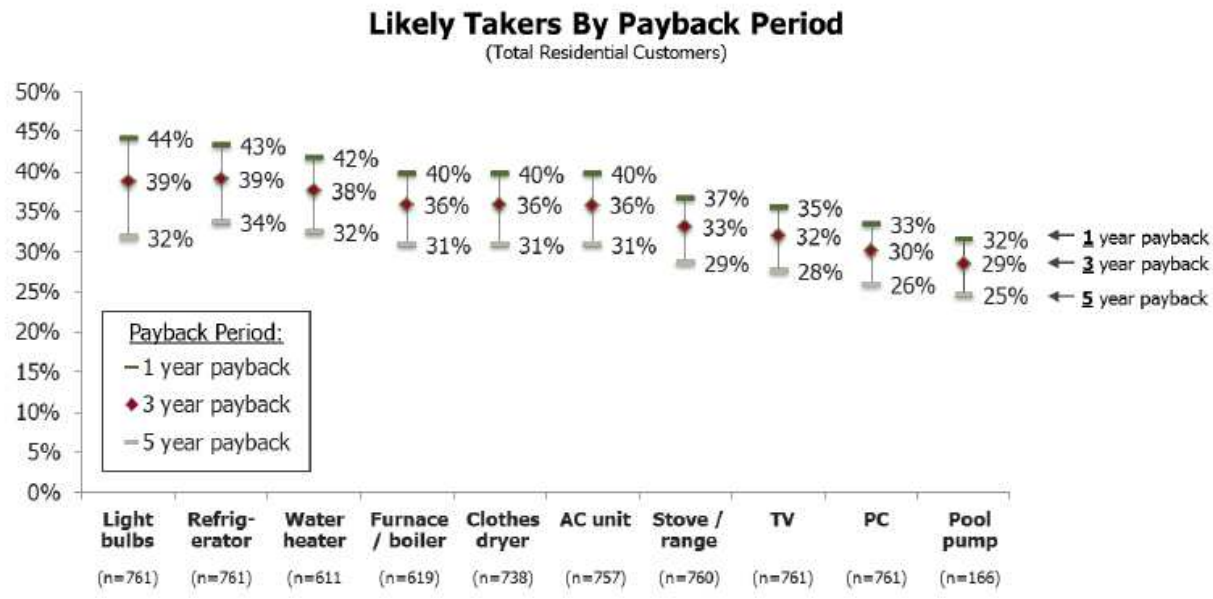
[5] File No. EO-2015-0084, *Electric Utility Resource Filing of Union Electric Company d/b/a Ameren Missouri* (NP and HC), filed on 10/1/2014. Chapter 8-appendix b-volume 2.pdf p. 6-1, see also Figure 4.

responses were then adjusted with proprietary metrics based on YouGov market research data (see Appendix GM-1) to reach Ameren Missouri's projected energy and demand saving targets for the MEEIA Cycle II application as well as the realistic achievable potential (RAP), maximum achievable potential (MAP), the economic achievable potential, and the technical achievable potential for the triennial IRP analysis.

Q. What energy efficiency products were included in the residential surveys?

A. Figure 1 reprinted from Ameren Missouri's 2013 Market Potential Study and includes a list of the energy efficiency products as well as percentage of likely takers by payback period.

Figure 1: Likely residential customer measure acceptance rates by payback period[6]

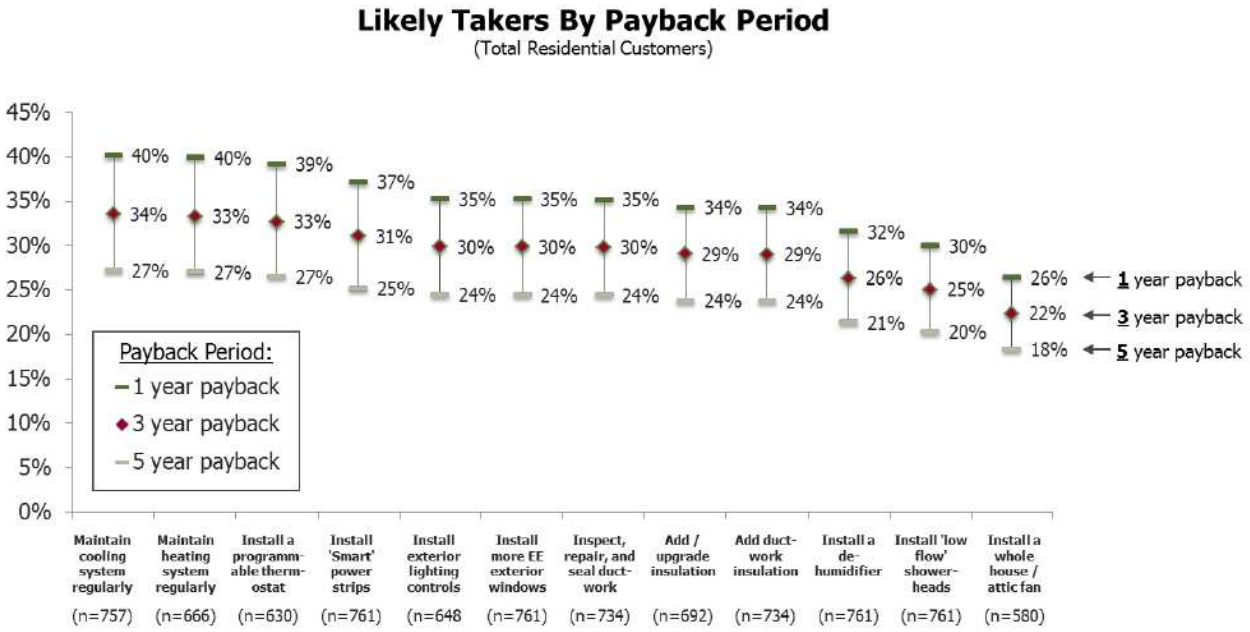


It is important to note that most of these measures are not actually measures included in Ameren Missouri's residential programs because they are not cost-effective. Examples include: refrigerator, water heater, furnace/boiler, clothes dryer, TV, and PC. That's six of the ten measures that were surveyed. Figure 2 reprinted from Ameren Missouri's 2013 Market

[6] File No. EO-2015-0084, *Electric Utility Resource Filing of Union Electric Company d/b/a Ameren Missouri* (NP and HC), filed on 10/1/2014. Chapter 8-appendix b-volume 2.pdf p. 5-2.

Potential Study include the results of residential surveyed respondents' answers to housing envelope upgrades or improved maintenance.

Figure 2: Likely residential customer acceptance rates of existing systems by payback period[7]



Again, many of the measures listed above are not included in Ameren Missouri's MEEIA Cycle II application such as whole house/attic fan, sealing duct work, and programmable thermostat measures.

Both of these figures also show that there is no single measure that exceeds customer adoption expectation beyond 44%. The highest acceptance rate, lighting, is under the one-year payback assumption.

[7] File No. EO-2015-0084, *Electric Utility Resource Filing of Union Electric Company d/b/a Ameren Missouri* (NP and HC), filed on 10/1/2014. Chapter 8-appendix b-volume 2.pdf p. 5-3

Q. Why does the Market Potential Study have such low acceptance rates?

A. These results reflect a secondary downward adjustment to survey respondent's primary answers based on the aforementioned YouGov proprietary market data. Ameren Missouri cites response bias as the rationale for altering respondent answers in a downward manner. To illustrate the extent to which responses were altered the following breakdowns are reprinted here from Ameren Missouri's Market Potential Study for regular purchases (that only include lighting measures) in table 8 and for irregular purchases in table 9 (any non-lighting measure) for residential measures. [8, 9]

Table 8: translated take rates for regular purchases

Scale Rating	Adjustment Value for Regular Purchases
1	3%
2	3%
3	3%
4	8%
5	15%
6	22%
7	35%
8	40%
9	44%
10	62%

Table 9: translated take rates for irregular purchases

Scale Rating	Adjustment Value for Regular Purchases
1	5%
2	5%
3	6%
4	6%
5	18%
6	20%
7	31%
8	38%
9	44%
10	56%

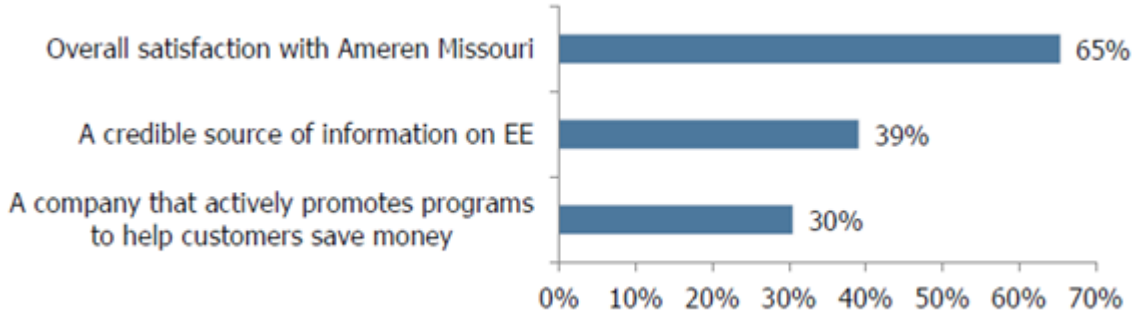
There are additional downward adjustments made for business measures. These adjustments on the residential and business surveys are further refined based on attitudinal responses to surveyed customer energy efficiency knowledge and their perceptions on global warming and Ameren Missouri's role and trustworthiness. One of the primary conclusions from the study is that customer attitudes have a greater impact than their demographic characteristics:

[8] File No. EO-2015-0084, *Electric Utility Resource Filing of Union Electric Company d/b/a Ameren Missouri* (NP and HC), filed on 10/1/2014. Chapter 8-appendix b-volume 2.pdf p. 3-1
[9] Ibid.

> In other words, how customers think about Ameren Missouri and energy efficiency in general is likely to be much more important in predicting how they will respond to new EE and DR programs offered by the company. . . . It may explain why the overall take rates for Ameren Missouri's programs are lower than they are for those observed at many other US utilities.[10]

Figure 3 reprints the results of the Ameren Missouri Market Potential Study findings on customer opinions of Ameren Missouri.

Figure 3: Residential, overall ratings of Ameren Missouri[11]



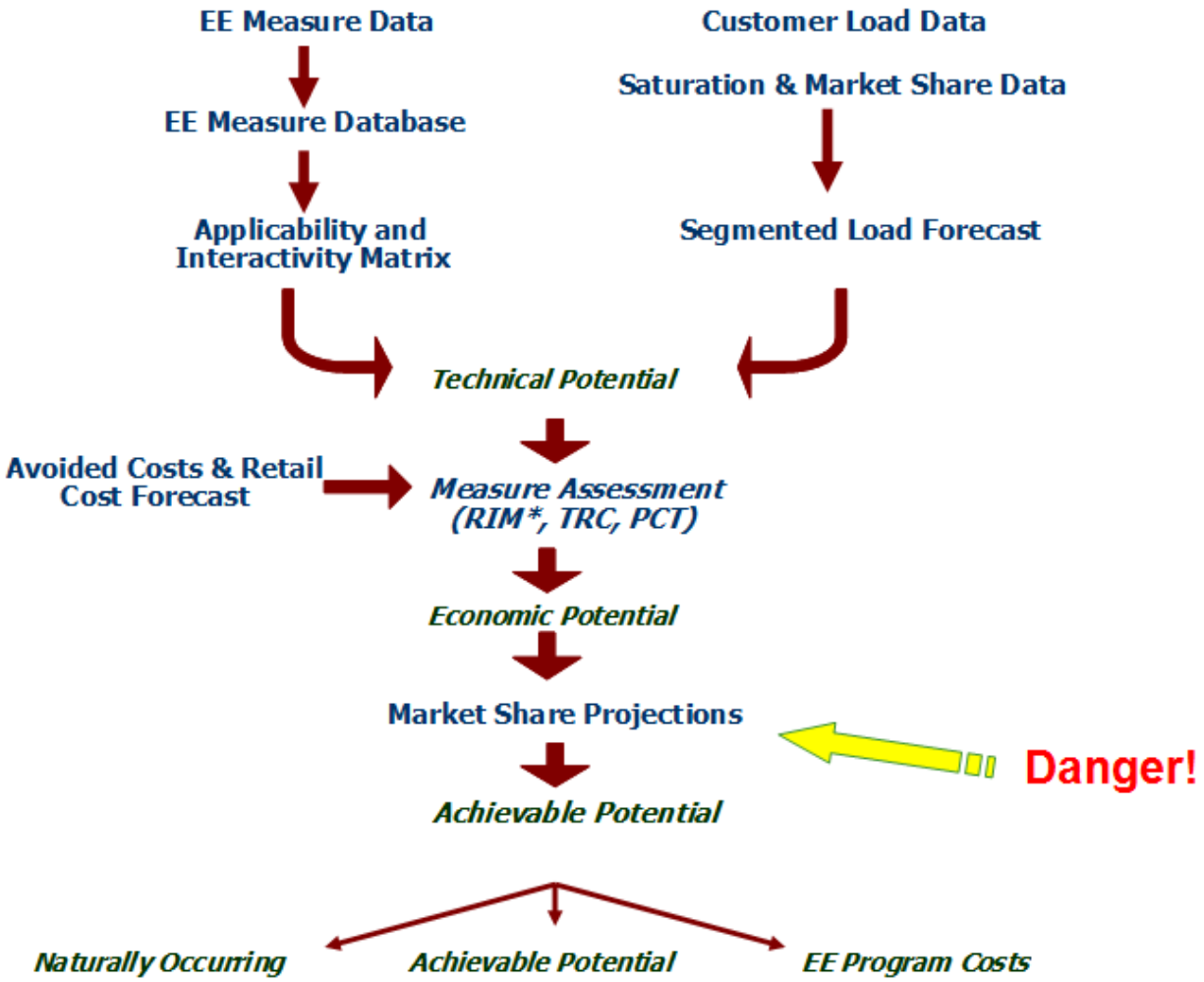
Based on the results in figure 3, it bears discussion whether or not Ameren Missouri is the appropriate agent to even be delivering energy efficiency products and marketing. These responses matter because they contribute to the overall energy and demand saving targets as a downward adjustment.

To summarize, Ameren Missouri collected primary research on likely adoption rates for various measures based on three different payback assumptions. It then adjusted those responses downward based on perceived response bias. Then Ameren Missouri altered estimates further by factoring in attitudinal responses based on the respondent's view of Ameren Missouri, knowledge of energy efficiency, and their overall environmental views.

[10] File No. EO-2015-0084, *Electric Utility Resource Filing of Union Electric Company d/b/a Ameren Missouri* (NP and HC), filed on 10/1/2014. Chapter 8-appendix b-volume 2.pdf p. 6-1
[11] Ibid.

These adjustments represent Ameren Missouri's market share projections, or the "danger" section that Ameren Missouri marked in a flow chart provided to stakeholders describing its market potential study process and seen in figure 4 below.

Figure 4: DSM potential study (simplified)



Q. Is the YouGov downward adjustment appropriate?

A. No, it is not appropriate. Market potential studies will typically incorporate some adjustment to account for market share targets such as relying on secondary sources, calibrating to program history, utilization of an adoption model diffusion curve or a Delphi Panel. These methods are accepted and considered best practice within the industry. In contrast, Ameren Missouri's method is a new approach that has not been vetted or appropriately utilized in any context outside of Ameren Missouri and Ameren Illinois' 2013 market potential studies.[12]

Q. Please continue.

A. The downward adjustments of survey results are based on proprietary research conducted in 2010 by the internet polling firm YouGov. In response to queries to a data request in a related case (EO-2012-0142) regarding the results of the research, OPC was given a five-page study titled "Predicting purchase behavior from Purchase Intent." The paper claims to be a longitudinal study of more than 5,000 consumers in the United States wherein the study examined the follow-up purchasing behavior based on responses given in surveys. YouGov researchers followed up at 1 month, 6 month, and 12 month intervals and scored accordingly. The products YouGov asked about included a wide array of equipment or services, including, but not limited to, some energy efficiency related products or services.

Among the many missing items to form any reasonable conclusion about the results of the YouGov paper, or the methodology employed were:

- The demographics of the consumers that were surveyed
- The manner and form in which the surveys were conducted
- The products or services that were asked about

[12] Voytas, R. et al. (2014) Enter the Human: Estimating Customer Participation Rates. A.E.S.P. Session 5A. http://assets.conferencespot.org/fileserver/file/69774/filename/Session_5A_Richard_Voytas.pdf

- The energy efficiency products that were asked about
- The energy efficiency services that were asked about
- Whether or not the researchers surveyed commercial and industrial customers
- What the margin of error was in the confidence interval

Ameren Missouri could provide no examples of this research being utilized to support any other utility (aside from Ameren Illinois) or any other industries market potential studies.

In addition to the uncertainty raised above, OPC does not believe it is appropriate to substitute or alter primary data collected from Ameren Missouri customers with an opaque, non-peer reviewed, unsubstantiated 5-page write-up from 2010, on customers without demographic information, and without knowledge of the products or services that are being examined.

Without any context, this downward adjustment not only appears arbitrary, but it increases the potential for ratepayers to overcompensate Ameren Missouri for any energy efficiency actions that take place during this timeframe. The threat to ratepayers is additionally heighted within the context of Ameren Missouri's MEEIA Cycle II application because of the request to utilize deemed TRM savings as the basis for both the throughput disincentive and the performance incentive. This proposal minimizes the role of EM&V and essentially eliminates the role set aside for the Commission's independent auditor. Under such a scenario Ameren Missouri would have considerably smaller energy and demand saving targets and be compensated fully for all energy efficiency efforts it could record, regardless of whether or not the utility was responsible for the adoption (i.e., free ridership).

Q. Ameren Missouri suggests codes and standards have also contributed to the downward adjustment. Do you agree?

A. Missouri's home-rule status restricts the ability of the state to adopt a statewide energy code and that requires only new or renovated state-owned buildings to meet the 2006 IECC code standards. Additionally, there are no state appliance efficiency standards.

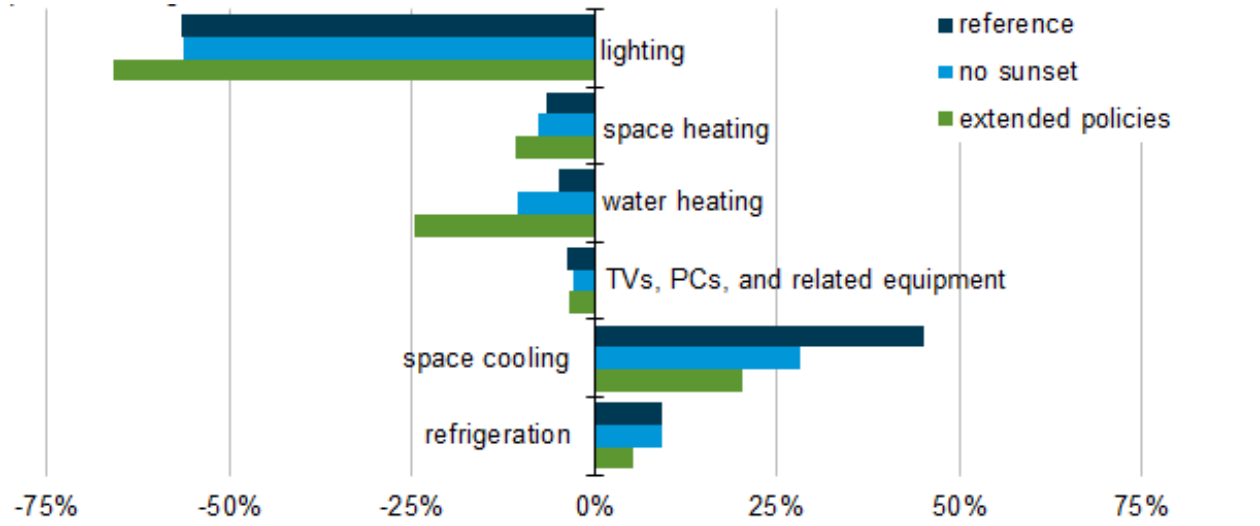
Q. What about federal efficiency appliance standards?

A. Federal appliance efficiency standards set minimum energy efficiency levels. They remove the most inefficient products from the market while retaining consumer choice. Moreover, the enactment[13] and enforcement[14] of those standards has been inconsistent and has played out unevenly over multiple years. Even then, according to the U.S. Energy Information's Administration's (EIA) 2014 Annual Energy Outlook the current federal efficiency appliance standards are expected to impact certain end uses more than others.

Table 10 reprints data presented by the EIA's 2014 Annual Energy Outlook which looked at changes in the residential delivered energy consumption for selected end uses projected out to 2040 based on three different modeling scenarios. The EIA scenarios included: the reference case (current laws and regulations), no sunset (reference + federal tax credits are extended) and extended policies (increase in appliance standards and a national building energy code enforced). [15]

[13] Tomich, J. (2013) Feds withdraw new furnace efficiency standards. http://www.stltoday.com/business/local/feds-withdraw-new-furnace-efficiency-standards/article_7ccf47e4-2e7b-55a4-a1fc-6c301b7eec7f.html
[14] Dawson, K. (2013) US House Blocks Enforcement of Energy Standards Again. http://www.allledlighting.com/author.asp?section_id=560&doc_id=560523
[15] Boedecer, E. et. al. (2014) Issues in Focus: No Sunset and Extended Policies Cases. EIA. 2014 Annual Energy Outlook. http://www.eia.gov/forecasts/aeo/section_issues.cfm#updated_nosunset

Table 10: Change in residential delivered energy consumption for selected end uses, 2012-2040



Source: U.S. Energy Information Administration, *Annual Energy Outlook 2014*, Issues in Focus

Table 10 shows that federal appliance standards impact certain end uses more than others. For example, energy consumption by residential space cooling equipment (air conditioners) is projected to increase by about 45% from 2012 to 2040 due mainly to the projected growth in the number and size of homes.[16]

To date, the most cited federal standard that has impacted utility-run energy efficiency programs has been the phase-out of the incandescent light bulb. This is definitely an issue for Ameren Missouri as it relies heavily on efficient lighting adoption in its current MEEIA cycle. However to suggest that lighting, which accounts for roughly 14% of a home's residential energy usage,[17] will diminish the expected realistic potential saving targets by over half during the 2016-2018 timeframe is incorrect.

[16] Ibid.
[17] EIA (2014) How much electricity is used for lighting in the United States? http://www.eia.gov/tools/faqs/faq.cfm?id=99&t=3

Q. Please explain.

A. According to the most recent U.S. Energy Information Administration (EIA) state profile data:

Missouri represents
- 1.9% of the total U.S. population
- 2.5% of total U.S. energy consumption (excluding transportation)[18]

Further, according to the American Council for Energy-Efficient Economy (ACEEE), Missouri is ranked 44th out of 50 states in ACEEE's energy efficiency ranking (with a score of 9 out of a possible 50 points).[19]

A close examination of Ameren Missouri's kWh sales over the past five years further supports the conclusion that the potential for energy efficiency savings has not diminished based on two years of efficient lighting activity. Table 11 provides this information by customer class.

[18] EIA (2015) Missouri State Profile and Energy Estimates http://www.eia.gov/state/data.cfm?sid=MO#ConsumptionExpenditures.
[19] ACEEE (2015) Missouri State Scorecard Rank. http://database.aceee.org/state/missouri

**

**

NP

Table 11 suggests that after two-years and approximately $76 million dollars in program costs to encourage energy efficiency all rate classes, but especially the residential rate class, are consuming more electricity than they did before Ameren Missouri ever supported a MEEIA program.

IV. CONCERNS WITH AMEREN MISSOURI'S PROPOSED DEMAND-SIDE INVESTMENT MECHANISM REVENUE REQUIREMENT

Q. How is Ameren Missouri compensated for its MEEIA portfolio?

A. A Commission approved MEEIA portfolio includes recovery of direct program costs, recovery of the throughput disincentive and an opportunity to earn a performance incentive. Collectively, this is known as the demand-side investment mechanism (DSIM). OPC does not have an issue with the current mechanism employed for recovery of direct program costs, but believes Ameren Missouri's other two mechanisms for compensation are excessive.

Q. Please describe your concern over the throughput disincentive.

A. OPC's primary concern over the throughput disincentive is the calculation of the net shared benefits. For illustrative purposes, table 12 includes Ameren Missouri's MEEIA Cycle II cost-effective analysis with emphasis placed on the net participant costs.

Table 12: MEEIA Cycle II cost-effective analysis[20]

	Total		Residential		Business	
	UCT	TRC	UCT	TRC	UCT	TRC
Avoided Cost Benefits	$261	$261	$89	$89	$172	$172
Program Admin. Cost	$70	$70	$38	$38	$32	$32
Customer Rebates	$56	$56	$14	$13	$42	$42
Net Participant Cost		$44		$14		$31
Total Cost	$126	$170	$52	$65	$74	$105
Net Benefits	$135	$91	$37	$24	$98	$67
Benefit/Cost Ratio	2.07	1.53	1.72	1.36	2.32	1.64

Net participant costs can be looked at as the out-of-pocket expenses ratepayers have to pay to get an energy efficient product. This is the sole "cost" difference between the total resource cost test (TRC) and the utility cost test (UCT). In this application that amounts to a projected $44 million dollar difference between the two tests with the UCT resulting in a net benefit amount of $135 and the TRC with a net benefit amount of $91 million.

In its MEEIA Cycle II application Ameren Missouri would have the Commission set energy and demand saving targets based in part, on the TRC calculations (which would lower the target) and then collect greater lost revenues by calculating net shared benefits using the UCT (which would raise the throughput amount). This "sharing" of benefits between the utility and customer fails to account for the additional costs borne by the customer and thus overstates the total benefits.

This methodology runs counter to the intention of the MEEIA statute which references only one cost effective test—the TRC. Table 13 includes a breakdown of how the different cost-

[20] File No. EO-2015-0055, *Application to Approve DSIM Filing, Request for Variances and Motion to Adopt Procedural Schedule*, filed on 12/22/2014. p. 7.

effective tests appear in the MEEIA statute as well as the applicable MEEIA rules in 4 CSR 240-3.163, 4 CSR 240.3.164, 4 CSR 240.20.093, and 4 CSR 240-20.094.

Table 13: Cost-effective tests and their prominence in MEEIA rules and statute

	Total Resource	Utility	Societal	Non-Participant	Participant
SB 376 (MEEIA Statute)	Yes	No	No	No	No
4 CSR 240-3.163	Yes	No	No	No	No
4 CSR 240.3.164	Yes	Yes	Yes	Yes	Yes
4 CSR 240.20.093	Yes	No	No	No	No
4 CSR 240-20.094	Yes	No	No	No	No

OPC is still reviewing Ameren Missouri's assumptions behind the proposed increase of the net present value of total avoided cost benefits to 32.57% compared to the 26.34% included in its current MEEIA portfolio and reserves the right to comment on this issue in future testimony.

Q. Please describe your concern over the performance incentive.

A. Ameren Missouri's performance incentive is excessive considering Ameren Missouri's success with MEEIA to date, the artificially lowered proposed saving targets, and what is seen with other utilities in vertically integrated states. There is additional concern that the performance incentive amount is not factored into the net shared benefit amount as a cost incurred by ratepayers; thus, overstating the amount of revenue Ameren Missouri is able to collect.

Q. Do MEEIA and the DSIM rules provide guidance on the details of how the shareholder incentives should be designed?

A. Neither MEEIA nor the Commission's rules provide specific guidance on some important issues, such as how much money should be made available for shareholder incentives. While the Commission's rules provide a structure for shareholder incentives, they do not indicate a methodology for determining the portion of achieved annual net shared benefits that will be retained by the utility.

Q. What has Ameren Missouri proposed?

A. Table 14 provides a percentage breakdown in the difference between the agreed upon performance incentive in Ameren Missouri's first MEEIA cycle and its proposed performance incentive for Cycle II.

Table 14: Difference in percentage of net benefits based on percentage of goal obtained between performance incentives

	70% (of goal)	**100%**	**>130%**
Approved MEEIA I Percent of Net Benefits and 3-year total incentive	4.60% $12mm	5.03% $18.75mm	6.19% $30mm
Proposed MEEIA II Percent of Net Benefits and 3-year total incentive	12.8% $16mm	14.0% $25mm	17.2% $40mm

Ameren Missouri defends this request by citing eight other states' performance incentive mechanisms as grounds that their application is justified. I have included bullet summaries of Ameren Missouri's comparative states and then included sub-points for information that Ameren Missouri either omits or was included in the most recent IEE report that they cite:[21]

[21] Institute for Electric Innovation Report(2014) State Electric Efficiency Regulatory Frameworks. http://www.edisonfoundation.net/iei/Documents/IEI_stateEEpolicyupdate_1214.pdf

- Minnesota allows incentives up to 9 cents per kWh realized
    - Utility has to achieve savings equal to 1.5% of sales
    - Has mandated Energy Efficiency Resource Standards (EERS) in place
- Texas has allowed incentives of up to 20% of program costs
    - 100% goal obtainment equals 1% of net benefits, every 2% of that demand goal exceeded, up to a maximum of 20% of the utility's program costs
    - EERS state
- Colorado has allowed incentives up to 15% of net economic benefits
    - Provides a pretax $5 million bonus if it exceeds 100%.
    - No bonus for a lesser achievement
    - Current $30 million cap on the combined bonus and performance incentive is retained to ensure ratepayers are protected from rate increases
    - EERS state
- Georgia has allowed incentives up to 10% of the NPV of net benefits
    - Now 8.5% of NPV of actual net benefits of verified net kWh savings
- Michigan has allowed incentives up to 15% of program costs
    - Only applied if it exceeds savings goal
    - Incentive is capped if 125% of savings goal is reached
    - EERS state
- New Mexico has allowed incentives up to $.005-$.01 kWh saved and $10-$20/KW saved
    - Revised to only include 7.6% of program expenditures
    - Includes a fixed cost tariff rider of 3% of revenues to fund programs

- EERS state

- Oklahoma has allowed incentives up to 25% of net savings for programs that can have savings be estimated and 15% of program costs for programs that cannot be estimated

- South Carolina has allowed incentives up to 13% of NPV of net benefits

Q. What should readers note from the breakdown above?

A. Based on the examples provided, Ameren Missouri's proposed performance incentive would be by far the most generous. This is especially true considering that Ameren Missouri is not mandated by statute to achieve any energy and demand savings like five of the eight states referenced above (i.e., it has no pre-determined targets). It is also interesting to note that there do not appear to be any states that allow a performance incentive for less than 100% of the targeted goals and most states have a cap on the amount of benefits a utility can achieve. Additionally, half the states listed have its savings tied to program costs. If Ameren Missouri were to adopt a performance incentive based on a percentage of program costs as illustrated in the examples above it would be considerably smaller than Ameren Missouri's current net shared benefit based performance incentive amount. Table 15 illustrates this.

Table 15: Percentage of program costs as a performance incentive under proposed budget

% of Program Costs (referenced state)	Ameren Missouri's amount based on $134,461,396 three-year budget
20% (Texas)	$26,892, 279
15% (Michigan & Oklahoma)	$20,169,209
7.6% (New Mexico)	$10,219,066

A percentage of program costs represent just one potential performance mechanism that could be utilized. In managing rate and bill impacts of energy efficiency programs, it is important to design programs in ways that reduce program costs and maximize customer participation. Increasing levels of customer participation is essential, because as more customers participate in energy efficiency programs, more customers will experience the benefits of net bill reductions. In fact, when seeking to mitigate rate impact concerns, regulators often consider increasing program budgets—rather than decreasing them—as a way of increasing participation and increasing the portion of customers that experience net benefits from energy efficiency programs.

If the majority of customers eventually become program participants, then concerns about rate impacts should be significantly mitigated as more customers experience net reductions in their bills.

Under Ameren Missouri's proposed performance incentive plan both the EM&V process and the Commission's independent auditor's role would be minimized as deemed energy savings would be utilized instead of ex post net savings. Ameren Missouri would then be compensated for all energy efficiency adoption regardless of the motivation of the consumer or presence of its program. Under the current mechanism, if a ratepayer was going to buy an energy efficient light bulb regardless of the rebate, they would be counted as a "free rider" and Ameren Missouri would not be able to take credit for that purchase in respect to its

performance incentive (the utility would still be made whole through the throughput disincentive). The unintended consequences of such a proposal are that participation rates of all representative ratepayers are diminished.

Q. Please explain.

A. If goals are low and savings are valued regardless of motivation, then the utility has no incentive to target hard-to-reach ratepayers such as apartment renters. Instead, Ameren Missouri can focus on participants who would likely adopt energy efficiency efforts regardless of whether or not a utility rebate existed. The net effect is an overall increase in rates with only a select group of participants seeing a bill decrease.

Q. Do you have any additional comments on the performance incentive component?

A. OPC is currently examining alternative performance incentive mechanisms with stakeholders with respect to this application and reserves the right to present those results in future testimony.

V. OPPOSITION TO AMEREN MISSOURI'S REQUEST FOR CERTAIN VARIANCES FROM MEEIA RULES:

Q. Please describe Ameren Missouri's first variance request which includes the following regulations:

- **4 CSR 240-20.093 (1)(A), (1)(EE), (1)(C), (1)(M)(5), (1)(O), (1)(P), (1)(Q), (2)(H), (2)(1), (3), (4), (5)(A), and (1)(Y)**
- **4 CSR 240-20.094 (1)(A), (1)(C), (1)(J)(5), (1)(N), (1)(Z), (2), and (1)(U)**
- **4 CSR 240-3.164 (1)(A), (1)(F)(5), (1)(H), (1)(J), (2)(C)(9), and (1)(M)**
- **4 CSR 240-3.163 (1)(Q)**
- **4 CSR 240-Chapter 14**

A. Ameren Missouri's first variance request is really multiple variance requests encompassing twenty-seven separate rules contained in 4 CSR chapters 3, 20, as well as the entirety of chapter 14. These rules vary in description including promotional practice rules, definitions of key terms and to energy and demand saving targets among others. Ameren makes a blanket level request for variance from all of these rules on the basis that they "were promulgated in years prior to adoption of any Ameren Missouri MEEIA programs, and in present form, contain requirements that are inconsistent with the Company's requested MEEIA filing and DSIM." No further explanation is given; however, many of these rules will be cited again in the additional variances Ameren Missouri requests and described below. Rather than design a program that fits within the rulers, Ameren seeks to operate outside the rules.

Q. Does OPC support Ameren Missouri's variance from "Certain Commission regulations (including rules contained in Chapter 3, 14 and 20 of Part 240)?"

A. No. The volume and variety of rules included in this opening request should give the Commission pause. Ameren Missouri has failed to provide appropriate context for its variance(s) other than to say that these are rules promulgated several years ago and that they are not consistent with Ameren Missouri's requested MEEIA application.

It should be Ameren Missouri's burden to explain why large sections of the Commission's rules governing MEEIA are not appropriate rather than the current blanket-level statement which is included in this application.

Q. Please describe Ameren Missouri's variance request from:

- **4 CSR 240-20.094 (1)(A), (3)(A) and (4)(A).**

A. Ameren Missouri includes these variance requests from MEEIA rules regarding setting annual demand and energy targets as part of the DSIM and associated tariffs. Ameren Missouri takes issue with holding programs to specific energy and demand saving targets as it contends that programs will mature at different points during the three-year period and it is thus inappropriate to assign saving targets.

Q. Does OPC support Ameren Missouri's proposed variance from Annual Demand and Energy Targets?

A. No. OPC acknowledges that programs will have different adoption rates and could be subject to potential unforeseen market or regulatory actions that could possibly distort or otherwise promote the attainment of annual demand and energy targets over a three-year period. However, the current rules already consider this and provide a level of flexibility for the utility during the three-year cycle with the ability to apply for modifications if there is a variance of twenty percent or more in the approved demand-side plan three year budget and/or any program design modification.

A MEEIA application should include a representative sample of programs for all rate classes and to the extent possible, for variations within those rate classes that promote widespread participation across socio-economic segments. A variance from the Commission rules on energy and demand targets at the portfolio and program level minimizes the importance of participation rates for all ratepayers.

In the current application, Ameren Missouri is seeking approval for an application that represents roughly half of the energy and demand saving targets from its first application. A variance from program targets would allow Ameren Missouri to potentially direct attention on one or two programs that may not accurately reflect or otherwise include diverse participation rates.

Q. Please describe Ameren Missouri's variance request from:

- **4 CSR 240-20.093 (1)(N) and (4)**

A. Ameren Missouri includes these variance requests from MEEIA rules as they only include contemporaneous cost recovery for program costs. The rules do not include contemporaneous cost recovery for the throughput disincentive (lost revenues) and/or the utility performance incentive.

Q. Does OPC support Ameren Missouri's variance from "Program Cost" Requirement?

A. No. OPC opposes Ameren Missouri's request for contemporaneous recovery of the throughput disincentive (lost revenues) and performance incentive without proper EM&V ex post net saving estimates under the evaluation of Ameren Missouri's selected contractor(s) and verified by the Commission's independent auditor.

In Missouri, rates are set to allow the utility an opportunity to recover the cost of providing service to customers including a fair return on its investment. The MEEIA rules were crafted to ensure that demand-side investment mirrors supply-side investment and that all costs ultimately reflected on a utility bill are reasonable and prudent. For traditional supply side investment, the company can only recover the cost in rates if the investment is verified to be "used and useful." For DSM purposes, the EM&V essentially functions as that "used and useful" verification for the Commission. Approving contemporaneous or prospective cost recovery would allow the Company to recover unverified costs. Allowing contemporaneous recovery of prospective "savings" unjustly relieves the company of its burden to show its costs were appropriately incurred by failing to adequately measure savings.

Q. Please describe Ameren Missouri's variance request from:

- **4 CSR 240-20.093 (7)(E).**

A. Ameren Missouri includes this request for variance from the MEEIA rules as it pertains to the Statewide Technical Resource Manual (TRM). There is currently no current Statewide TRM.

Q. Does OPC support Ameren Missouri's variance from Statewide TRM Requirements?

A. OPC does not oppose this variance, but would strongly suggest that the Commission look to explore avenues to promote and implement a statewide TRM platform that can be utilized by all utilities and applicable stakeholders.

Q. Please describe Ameren Missouri's variance request from:

- **4 CSR 240-3.150**
- **Chapter 14**

A. Ameren Missouri includes these rules as variances from MEEIA rules regarding promotional practices.

Q. Does OPC support Ameren Missouri's variance from Promotional Practices?

A. Yes. OPC is in general agreement with Ameren Missouri over this request for variance as described in the application. In Ameren Missouri's first MEEIA cycle in EO-2012-0142 the issue of fuel switching (gas-to-electric) was raised by Laclede Gas who had filed to be an intervener. A stipulation and agreement was filed shortly after rebuttal testimony between Ameren Missouri and Laclede Gas where it was understood that any approved MEEIA application would promote energy efficiency in a manner not designed to induce a customer to choose one fuel (electric or natural gas) over the other. Although Laclede Gas is not an intervener in this case, OPC would expect that any variance in the Commission's promotional practice rules would not include a departure from the previously committed stipulation and agreement.

Q. Please describe Ameren Missouri's variance request from:

- **4 CSR 240-20.094 (1)(Z), (1)(C), and (1)(J)(5)**
- **4 CSR 240-20.093(2)(H), (2)(H)(3), (1)(EE), (1)(C), (1)(F)(5), and (1)(M)(5)**
- **4 CSR 240-3.163(1)(A)**

A. Ameren Missouri includes these requests for variance from the MEEIA rules as it pertains to retrospective recovery of net shared benefits. Ameren Missouri's MEEIA application is predicated on prospective recovery of all costs: program, lost margins, and performance incentive through the use of its technical resource manual (TRM) platform to verify costs and savings calculations.

Q. Does OPC support Ameren Missouri's variance from Retrospective Recovery?

A. No. OPC opposes these variances because they shift risk to ratepayers. In the current application, Ameren Missouri minimizes the impact of the EM&V process and essentially eliminates the role of the Commission's independent auditor. These concerns are heightened

as OPC believes that Ameren Missouri has understated the energy and demand savings potential by including an artificial downward adjustment to their market potential study and overstated the net shared benefits by omitting the millions of dollars in costs from the performance incentive and the out-of-pocket costs from ratepayers.

Q. Please describe Ameren Missouri's variance request from:

- **4 CSR 240-20.093(2)(H)**

A. Ameren Missouri includes these requests for variance from the MEEIA rules as it pertains to the calculation of the utility performance incentive.

Q. Does OPC support Ameren Missouri's variance from Calculation of Utility Incentive?

A. No. OPC opposes relying on Ameren Missouri's TRM for the appropriate inputs in calculating the utility performance incentive. This variance minimizes the EM&V process and essentially eliminates the role of the Commission's independent auditor. A variance from these rules will potentially allow Ameren Missouri to over-collect the performance incentive.

Q. Please describe Ameren Missouri's variance request from:

- **4 CSR 240-20.093 (5)(A) and (2)(L)**

A. Ameren includes these requests for variance from the MEEIA rules as it pertains to semi-annual rider adjustments. Ameren Missouri is proposing a prospective recovery rather than a retrospective recovery.

Q. Does OPC support Ameren Missouri's variance from Semi-Annual Rider Adjustments?

A. No. OPC opposes prospective recovery. As stated earlier, the Commission rules were crafted in this manner to ensure that demand-side investment mirrors supply-side investment. In Missouri, that includes a history of regulatory lag to account for verification of "used and useful" services. For DSM purposes, the EM&V essentially functions as that used and useful

verification for the Commission. Approving contemporaneous or prospective cost recovery would run counter to regulatory practice and Commission rules.

Q. Does this conclude your testimony?

A. Yes.

Appendix GM-1
has been deemed
“Proprietary”
in its entirety