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| Exhibit No.: | |
| Issues: | Demand-Side Programs Investment Mechanism |
| Witness: | John A. Rogers |
| Sponsoring Party: | MO PSC Staff |
| Type of Exhibit: | Corrected Red-Line Rebuttal Testimony |
| Case No.: | EO-2015-0055 |
| Date Testimony Prepared: | ~~March 20~~April 17, 2015 |

**MISSOURI PUBLIC SERVICE COMMISSION**

**REGULATORY REVIEW DIVISION**

# CORRECTED RED-LINE REBUTTAL TESTIMONY

**OF**

**JOHN A. ROGERS**

**UNION ELECTRIC COMPANY d/b/a AMEREN MISSOURI**

**FILE NO. EO-2015-0055**

***Jefferson City, Missouri***
***~~March~~ April 2015***

**** Denotes Highly Confidential Information ****

**NP**

## BEFORE THE PUBLIC SERVICE COMMISSION

## OF THE STATE OF MISSOURI

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| 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 | ) ) ) ) ) | Case No. EO-2015-0055 |

### AFFIDAVIT OF JOHN A. ROGERS

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

John A. Rogers, of lawful age, on his oath states: that he has participated in the preparation of the following Corrected Rebuttal Testimony in question and answer form, consisting of 34 pages of Corrected Rebuttal Testimony to be presented in the above case, that the answers in the following Corrected Rebuttal Testimony were given by him; that he has knowledge of the matters set forth in such answers; and that such matters are true to the best of his knowledge and belief.

John A Rogers
John A. Rogers

Subscribed and sworn to before me this 17th day of April, 2015.

SUSAN L. SUNDERMEYER
Notary Public - Notary Seal
State of Missouri
Commissioned for Callaway County
My Commission Expires: October 28, 2018
Commission Number: 14942086

Susan L Sundermeyer
Notary Public

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**OF**

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# CORRECTED RED-LINE REBUTTAL TESTIMONY

# OF

# JOHN A. ROGERS

# UNION ELECTRIC COMPANY d/b/a AMEREN MISSOURI

# FILE NO. EO-2015-0055

Q. Please state your name and business address.

A. My name is John A. Rogers, and my business address is Missouri Public Service Commission, P. O. Box 360, Jefferson City, Missouri 65102.

Q. What is your present position at the Missouri Public Service Commission ("Commission")?

A. I am a Utility Regulatory Manager in the Energy Unit of the Regulatory Review Division.

Q. Please state your educational background and experience.

A. These are contained in Schedule JAR-1.

Q. Would you please summarize the purpose of your rebuttal testimony?

A. I identify the Commission's Missouri Energy Efficiency Investment Act of 2009 ("MEEIA") rules[1] which require actions or decisions by the Commission and provide the Commission Staff's ("Staff") recommendations[2] concerning each required action or decision regarding Union Electric Company's d/b/a Ameren Missouri Company's ("Ameren Missouri" or "Company") proposed plan for its 2016 – 2018 demand-side management

[1] The Commission's rules promulgated as a result of the Missouri Energy Efficiency Investment Act of 2009 ("MEEIA") (Section 393.1075, RSMo, Supp. 2013) include Rules 4 CSR 240-3.163, 4 CSR 240-3.164, 4 CSR 240-20.093 and 4 CSR 240-20.094, which were all first effective on May 30, 2011.

[2] Staff witnesses include: 1) John Rogers on MEEIA and energy efficiency programs, 2) Mark Oligschlaeger on business risk and accounting issues concerning DSIM, 3) David Murray on business risk and financial analysis concerning DSIM, and 4) Sarah Kliethermes on DSIM rates and customer notification.

("DSM") programs including a technical resource manual ("TRM") and its demand-side programs investment mechanism ("DSIM") (collectively, the "Plan").

I also provide testimony concerning: 1) Ameren Missouri's current adopted preferred resource plan and resource acquisition strategy, 2) whether the Plan demonstrates progress towards achieving a goal of all cost effective demand-side savings, 3) whether the Plan is expected to be beneficial to all customers, 4) how the Plan's proposed recovery of lost margin revenues may result in additional earnings for shareholders, and 5) whether the Plan's proposed earnings opportunities are associated with cost-effective measurable and verifiable efficiency savings.

**Summary of Staff's recommendations**

Q. Please summarize Staff recommendations in this case.

A. For all of the reasons discussed by various Staff witnesses, Staff recommends the Commission reject Ameren Missouri's Plan due primarily[3] to the following Plan deficiencies, any one of which could be reason enough for the Commission to reject the Plan:

1. The Plan does not meet the statutory requirements of Section 393.1075.4., because the Plan does not provide any benefits to customers who do not participate directly in one or more programs and, therefore, it is not expected to be *beneficial to all customers in the customer class in which the programs are proposed, regardless of whether the programs are utilized by all customers*;[4]

[3] All of Staff's recommendations are included in the section of this testimony titled: **MEEIA rules requiring actions or decisions by the Commission and Staff's recommendations concerning each action or decisions**.

[4] Section 393.1075.4. …. 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 the programs are utilized by all customers*. [Emphasis added]

2. The Plan does not represent progress towards achieving a goal of all cost effective demand-side savings, because the incremental annual energy savings expected from Ameren Missouri's realistically achievable potential ("RAP") portfolio for the Plan may be vastly underestimated. The Plan's kWh savings and kWh per $ savings are less than half the actual achieved levels of kWh savings and of kWh per $ savings during Ameren Missouri's pre-MEEIA programs (2009 – 2011) and MEEIA Cycle 1 programs to date (2013 – 2014);
3. The Plan's proposal to not use full evaluation, measurement and verification ("EM&V") to determine Ameren Missouri's net performance incentive ("NPI") component of the Rider EEIC[5] does not comply with the statutory requirements of Section 393.1075.3.(3), which require the Commission to provide timely earnings opportunities associated with cost-effective *measurable and verifiable efficiency savings*; and
4. The Plan's proposed net throughput disincentive ("NTD") component of the Rider EEIC may result in Ameren Missouri recovering lost margin revenue amounts which are approximately 2 – 3 times greater than Staff's estimate of lost margin revenues attributable to implementation of the DSM programs.[6]

[5] Appendix B of the Plan.
[6] See rebuttal testimony of Sarah Kliethermes for discussion of the Plan deficiency related to the NTD component of Rider EEIC.

Q. Does Staff offer any alternative approach to its first and second deficiencies as identified in the previous answer which would allow the Commission the opportunity to approve the Plan "with modification acceptable to the electric utility"?[7]

A. No.

Q. Why not?

A. As will be explained in more detail later in my testimony, Ameren Missouri is the only party to this case that can "redo" the detailed analysis that is necessary in order for the Plan to comply with the MEEIA requirements. The analysis must demonstrate that the Plan is *beneficial to all customers in the customer class in which the programs are proposed, regardless of whether the programs are utilized by all customers* and that the Plan represents progress towards achieving a goal of all cost effective demand-side savings.

Q. What recommendations does Staff make regarding Ameren Missouri's ten (10) requested variances?[8]

A. Because Staff recommends the Commission reject Ameren Missouri's Plan, Staff has no recommendations concerning the ten (10) requested variances at this time. Staff recommends the Commission allow all parties the opportunity to address the need for any variances of the Commission rules if the Commission makes a determination on all issues related to DSM programs, DSIM and TRM rather than rejecting the Plan outright.

[7] 4 CSR 240-20.093(3) … The commission *shall approve, approve with modification acceptable to the electric utility, or reject* such applications for approval of demand-side program plans within one hundred twenty (120) days of the filing of an application under this section only after providing the opportunity for a hearing. [Emphasis added]

[8] Ameren Missouri requests the ten (10) categories of variances from the Commission's MEEIA rules for its proposed DSM programs and DSIM as specified in paragraph 11 of Ameren Missouri's *Application to Approve DSIM Filing, Request for Variances and Motion to Adopt Procedural Schedule* filed on December 22, 2014 in File No. EO-2015-0055.

**2016 – 2018 Energy Efficiency Plan**

Q. Would you please briefly describe Ameren Missouri's MEEIA application?

A. Yes. Ameren Missouri's MEEIA application was filed on December 22, 2014. This is Ameren Missouri's second application under the Commission's MEEIA rules and the Missouri Energy Efficiency Investment Act. The application requests:

1. Approval of ten (10) DSM programs (six (6) residential and four (4) business programs, among which nine (9) are current programs and one (1) is a new program);

2. Approval of a TRM; and

3. Approval of revisions to Ameren Missouri's current DSIM, i.e., Rider EEIC. Schedule JAR-2 is the current Rider EEIC, and Appendix B of the Plan is the proposed/revised Rider EEIC.

The DSIM includes the following features and components:

1. DSIM rates for all customer classes except for customers taking service under large transmission service and lighting rate schedules;

2. A programs' cost recovery component, i.e., net program cost ("NPC") component of Rider EEIC;

3. A 32.57% of annual shared net benefits[9] component (designed to overcome the throughput disincentive), i.e., NTD component of Rider EEIC;

4. A performance incentive component equal to 14.0% of annual net shared benefits for 100% achievement of the Plan's 3-year energy savings target,[10] i.e., NPI component of Rider EEIC;

[9] 4 CSR 240-20.093(1)(C) Annual net shared benefits means the utility's avoided costs measured and documented through evaluation, measurement, and verification (EM&V) reports for approved demand-side programs less the sum of the programs' costs including design, administration, delivery, end-use measures, incentives, EM&V, utility market potential studies, and technical resource manual on an annual basis.

5. A general plan for performance of EM&V; and

6. An opt-out provision.

In its application, Ameren Missouri requests variances from the Commission's MEEIA Rules related to: annual energy and demand targets, definition of program cost, statewide TRM requirement, promotional practices, retrospective recovery of portion of the annual net shared benefits, calculation of utility incentive, definitions of rate and of revenue requirement, definition of annual net shared benefits, semi-annual rider adjustment requirement, and 120-day approval requirement.

Ameren Missouri's preparation for its MEEIA application represents a significant undertaking by the Company. Despite its concerns and recommendation for rejection of the Plan, Staff recognizes and appreciates the initiative and the extra effort by the Company for its second MEEIA filing and for its continued Energy Efficiency Regulatory Stakeholder Advisory Team process described in Schedule JAR-3.

**MEEIA rules requiring actions or decisions by the Commission and Staff's recommendations concerning each action or decision**

Q. What are the actions or decisions required of the Commission for its approval of Ameren Missouri's demand-side programs and/or approval of a DSIM?

A. Rule 4 CSR 240-20.094 *Demand-Side Programs* includes the following subsections with *requirements*, other than those related to rulings on variances, for Commission actions or decisions concerning the Company's application for approval of its

[10]4 CSR 240-20.093(1) (B) Annual energy savings target means the annual energy savings level approved by the commission at the time of each demand-side program's approval in accordance with 4 CSR 240-20.094(3)(A). Annual energy savings targets are the baseline for determining the utility's demand-side programs' annual energy savings performance levels in the methodology for the utility incentive component of a DSIM.

demand-side programs. I provide Staff's recommendations concerning the Commission's actions or decisions required in each rule subsection.

**4 CSR 240-20.094(3):**

> [T]he *commission shall* approve, approve with modification acceptable to the electric utility, or reject such application for approval of demand-side program plans …
> (A) For demand-side programs and program plans that have a total resource cost test ratio greater than one (1), the *commission shall* approve demand-side programs or program plans, and annual demand and energy savings targets for each demand-side program it approves, provided it finds that the utility has met the filing and submission requirements of 4 CSR 240-3.164(2) and the demand-side programs and program plans—
> 1. *Are consistent with a goal of achieving all cost-effective demand-side savings;*
> *2. Have reliable evaluation, measurement, and verification plans*; and
> 3. Are included in the electric utility's preferred plan or have been analyzed through the integration process required by 4 CSR 240-22.060 to determine the impact of the demand-side programs and program plans on the net present value of revenue requirements of the electric utility;
>
> (Emphasis added)

Concerning this part of Rule 4 CSR 240-20.094(3), Staff recommends the Commission:

1. Reject Ameren Missouri's Plan, because the Plan vastly underestimates the 2016 – 2018 RAP for incremental annual energy and demand savings in Ameren Missouri's service territory and is inconsistent with a goal of achieving all cost-effective demand-side savings; and
2. Find that Ameren Missouri's Plan proposal to spend only 3% of total programs' costs for a simplified approach to EM&V does not result in a reliable EM&V plan for *measuring and verifying efficiency savings*.

**4 CSR 240-20.094(2)(A) and (B):**

> (A) The *commission shall* use the greater of the annual realistic achievable energy savings and demand savings as determined through the utility's market potential study or the following incremental annual demand-side savings goals as a guideline to review progress toward an expectation that the electric utility's demand-side programs can achieve a goal of all cost-effective demand-side savings: … .
>
> (B) The *commission shall* also use the greater of the cumulative realistic achievable energy savings and demand savings as determined through the utility's market potential study or the following cumulative demand-side savings goals as a guideline to review progress toward an expectation that the electric utility's demand-side programs can achieve a goal of all cost-effective demand-side savings: … .
>
> (Emphasis added)

Concerning Rule 4 CSR 240-20.094(2)(A) and (B), Staff recommends the Commission:

1. Find that Ameren Missouri's Plan vastly underestimates the 2016 – 2018 RAP portfolio's incremental annual energy and demand savings in Ameren Missouri's service territory and does not demonstrate progress toward achieving a goal of all cost-effective demand-side savings, because the Plan's kWh savings and kWh per $ savings are less than half the actual achieved levels of kWh savings and a kWh per $ savings during Ameren Missouri's pre-MEEIA programs (2009 – 2011) and MEEIA Cycle 1 programs to date (2013 – 2014).

**4 CSR 240-20.094(3)(B):**

> The *commission shall* approve demand-side programs having a total resource cost test ratio less than one (1) for demand-side programs targeted to low-income customers or general education campaigns, if the commission determines that the utility has met the filing and submission requirements of 4 CSR 240-3.164(2), the program or program plan is in the public interest, and meets the requirements stated in paragraphs (3)(A)2. and 3.
>
> (Emphasis added)

Concerning Rule 4 CSR 240-20.094(3)(B):

1. Staff recommends the Commission approve Ameren Missouri's proposed Residential Low-Income program. Although Staff recommends the Plan be rejected, the Residential Low-Income program, in and of itself meets the requirement of 4 CSR 240-20.094(3)(B). The Residential Low-Income program has a TRC of 0.79.[11]

**4 CSR 240-20.094(3)(E):**

> The *commission shall* simultaneously [with its approval of demand-side programs or program plan] approve, approve with modification acceptable to the utility, or reject the utility's DSIM proposed pursuant to 4 CSR 240-20.093.

(Emphasis added)

Concerning Rule 4 CSR 240-20.094(3)(E), Staff's recommendations are included with its recommendations for the subsection identified as Rule 4 CSR 240-20.093(2)(C) in the next paragraph.

Rule 4 CSR 240-20.093 *Demand-Side Programs Investment Mechanism* includes the following subsections with *requirements* for Commission actions or decisions concerning the Company's application for approval of a DSIM. I provide Staff's recommendation concerning the Commission's actions or decisions required for each rule subsection.

**4 CSR 240-20.093(2)(C):**

> The *commission shall* approve the establishment of a DSIM and associated tariff sheets if it finds the electric utility's approved demand-side programs are expected to result in energy and demand savings and *are beneficial to all customers in the customer class in which the programs are proposed, regardless of whether the programs are utilized by all customers* and will assist the commission's efforts to implement state policy contained in section 393.1075, RSMo, to—

[11] Table 2.5 of the Plan.

1. Provide the electric utility with timely recovery of all reasonable and prudent costs of delivering cost-effective demand-side programs;
2. Ensure that utility financial incentives are aligned with helping customers use energy more efficiently and in a manner that sustains or enhances utility customers' incentives to use energy more efficiently; and
3. *Provide timely earnings opportunities associated with cost-effective measurable and/or verifiable energy and demand savings.*

(Emphasis added)

Concerning Rule 4 CSR 240-20.093(2)(C) Staff recommends the Commission:

1. Reject the Plan, because the Plan is not expected to be beneficial to all customers in the customer class in which the programs are proposed, regardless of whether the programs are utilized by all customers and does not comply with the statutory requirements of Section 393.1075.4.;
2. Reject the Plan's proposed NPI component of the Rider EEIC, because MEEIA and the MEEIA rule require that the Commission provide timely earnings opportunities associated with cost-effective *measurable and verifiable efficiency savings* while Ameren Missouri proposes to not measure the energy and demand savings impacts of its DSM programs through net-to-gross ("NTG") analysis;
3. Reject the Plan's proposed NTD component of the Rider EEIC, because the proposed NTD component would result in Ameren Missouri recovering lost margin revenue amounts which are approximately 2 – 3 times greater than Staff's estimate of lost margin revenues due to the programs; and
4. Reject all tariff sheets filed with the application.

**4 CSR 240-20.093(2)(D):**

> In addition to any other changes in business risk experienced by the electric utility, the *commission shall* consider changes in the utility's business risk resulting from establishment, continuation, or modification of the DSIM in setting the electric utility's allowed return on equity in general rate proceedings.
>
> (Emphasis added)

Concerning Rule 4 CSR 240-20.093(2)(D), Staff makes no recommendation at this time. However, Staff witnesses Mark Oligschlaeger and David Murray provide analyses and discussions in their rebuttal testimony related to business risk and impact on return on equity resulting from the various components of Ameren Missouri's proposed DSIM.

**4 CSR 240-20.093(2)(E):**

> In determining to approve a DSIM the *commission shall* consider, but is not limited to only considering, the expected magnitude of the impact of the utility's approved demand-side programs on the utility's costs, revenues, and earnings, the ability of the utility to manage all aspects of the approved demand-side programs, the ability to measure and verify the approved program's impacts, any interaction among the various components of the DSIM that the utility may propose, and the incentives or disincentives provided to the utility as a result of the inclusion or exclusion of cost recovery component, utility lost revenue component, and/or utility incentive component in the DSIM … .
>
> (Emphasis added)

Concerning Rule 4 CSR 240-20.093(2)(E), Staff reserves any specific recommendations on an allowed return on equity ("ROE") until all factors can be considered in a general rate case.

**4 CSR 240-20.093(2)(K):**

> The *commission shall* apportion the DSIM revenue requirement to each customer class.
>
> (Emphasis added)

Concerning Rule 4 CSR 240-20.093(2)(K), Staff has no recommendation at this time.

**4 CSR 240-20.093(6):**

> Disclosure on Customers' Bills. Regardless of whether or not the utility requests adjustments of its DSIM rates between general rate proceedings, any amounts charged under a DSIM approved by the commission, including any utility incentives allowed by the commission, *shall be separately disclosed on each customer's bill*. Proposed language regarding this disclosure *shall be submitted to and approved by the commission* before it appears on customers' bills.
>
> (Emphasis added)

Concerning Rule 4 CSR 240-20.093(6), Staff has no recommendation at this time.

Q. Has Ameren Missouri met all of the filing requirements of 4 CSR 240-20.093(2)(A) for its application to establish, continue or modify its DSIM?

A. No. Staff witness Sarah Kliethermes has identified that the requirements in 4 CSR 240-3.163(2)(A) have not been satisfied, although Staff has an outstanding data request asking that Ameren Missouri provide the notice required to be provided to customers describing how the proposed DSIM will work, how any proposed DSIM rate will be determined, and how any DSIM rate will appear on customer bills.

**Ameren Missouri's adopted preferred resource plan and resource acquisition strategy**

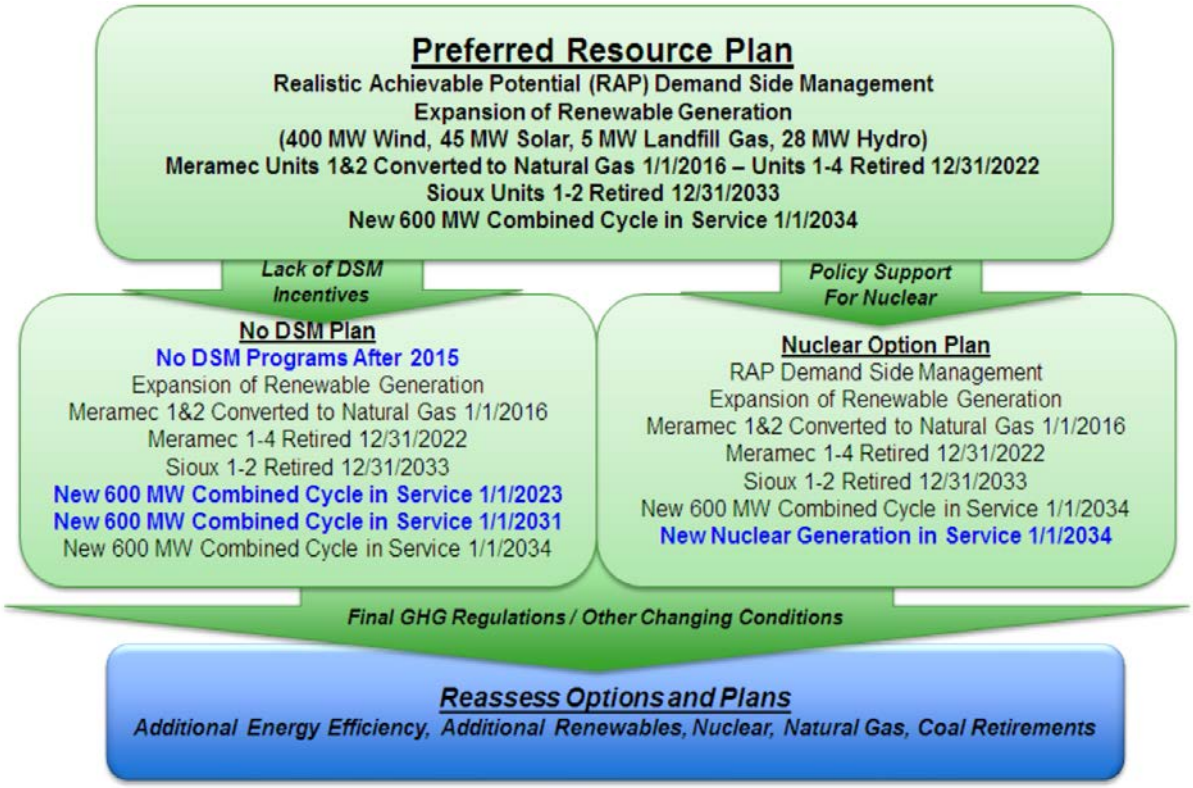
Q. Please describe Ameren Missouri's adopted preferred resource plan and resource acquisition strategy.

A. On October 1, 2015, Ameren Missouri filed its 2014 Integrated Resource Plan ("IRP") triennial compliance filing in File No. EO-2015-0084, as required by 4 CSR 240-22 Electric Utility Resource Planning. This is Ameren Missouri's first Chapter 22 triennial compliance filing under the Commission's revised Chapter 22 rules.

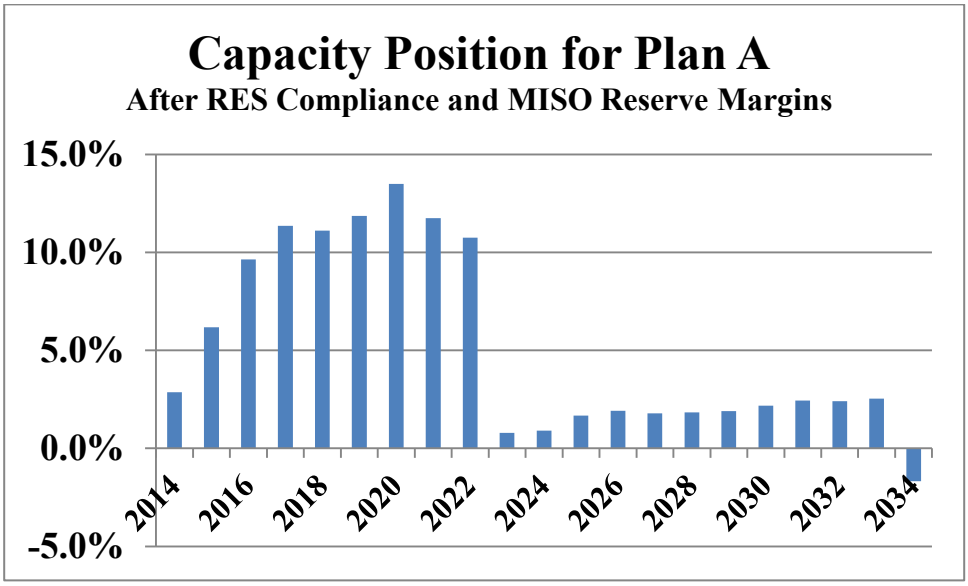
Ameren Missouri's adopted resource acquisition strategy includes its adopted preferred resource plan (Plan A), which has a 29-year present value of revenue requirements ("PVRR") of $61.11 billion and consists of RAP energy efficiency and demand response programs, roughly 500 MW of new renewable generation, and a new 600 MW combined cycle energy center in 2034 along with conversion of Meramec Units 1 & 2 to natural gas-fired operation in 2016, retirement of all Meramec units by the end of 2022, and retirement of Sioux Energy Center at the end of 2033. Ameren Missouri's IRP discussion of its decision to choose a RAP plan even though the similar maximum achievable potential ("MAP") plan received higher overall scores on the Decision Scorecard includes the following:

> **DSM Portfolio** – RAP and MAP DSM portfolios both performed well in the scoring and, importantly, both result in reduced total costs to customers. The decision between the two must involve a consideration of risk and reward from the perspective of both customers and Ameren Missouri. Based on our analysis of the year-by-year cost differences between RAP and MAP, and an understanding of the increased level of risk in achieving MAP relative to RAP, Ameren Missouri has chosen to include the RAP portfolio in its preferred resource plan.
>
> This is not to say that there couldn't be additional potential energy savings that can be realized. Indeed our uncertainty range for the RAP portfolio includes some significant amount of upside. However, we must consider the immediate cost impact to all customers of a large increase in DSM expenditures (the 2016-2018 budget would be nearly double for MAP) and the uncertainty of the relative long-term benefits. We must also consider that the path for demand-side programs is not "locked in" for twenty years.
>
> Including RAP DSM in our preferred resource plan allows us to continue to offer highly cost-effective programs to customers at roughly the same level of annual spending budgeted for our first cycle of MEEIA programs while also allowing the potential for increased savings if our experience and expectations indicate they could be achieved in a cost-effective manner. Identifying such opportunities will depend on the results of program implementation and periodic updates of our market research.

Ameren Missouri's resource acquisition strategy includes the adopted preferred resource plan as well as several contingency resource plan options and the events that could lead to a change in preferred resource plan as shown in the following diagram:




Ameren Missouri's highly confidential capacity balance sheet for the adopted preferred resource plan (Plan A) is included as Schedule JAR-4. Ameren Missouri is expecting to be long on capacity through 2033 under Plan A after compliance with the Renewable Energy Standard ("RES") and with the Midcontinent Independent System Operator ("MISO") planning reserve margin requirements as reflected in the following chart.




**20-year adopted preferred resource plan and the 3-year MEEIA Cycle 2 Plan do not represent progress towards achieving a goal of all cost effective demand-side savings**

Q. What deficiencies and concerns has Staff identified as a result of its review[12] of Ameren Missouri's 2014 IRP?

A. Staff identified no deficiencies, but identified two (2) concerns.

Staff's first concern is that the incremental annual energy savings expected from Ameren Missouri's RAP portfolio for Ameren Missouri's MEEIA Cycle 2 may be vastly underestimated, since the kWh savings and kWh per $ savings are less than half the actual achieved levels of kWh savings and of kWh per $ savings during Ameren Missouri's pre-MEEIA programs (2009 – 2011) and MEEIA Cycle 1 programs to date (2013 – 2014). Schedule JAR-5 contains a summary of Ameren Missouri's MEEIA Cycle 1 DSM programs and DSIM.

The second concern is that the incremental and cumulative annual energy savings expected from Ameren Missouri's RAP portfolio during the long-term planning horizon may

[12] 4 CSR 240-22.080(7)

be vastly underestimated, since the Ameren Missouri savings are approximately one-half the incremental and cumulative annual energy savings of the IRP RAP portfolios[13] of Kansas City Power & Light Company and KCP&L Greater Missouri Operations Company.

Schedule JAR-6 provides data and charts to demonstrate Staff's concerns for the 2014 IRP and for the DSM programs in the Plan. Referring to Charts 7, 8, and 9[14] of Schedule JAR-6, Chart 7 illustrates that actual programs' costs have been less than planned in each year and that the planned programs' costs for MEEIA Cycle 2 are approximately the same as the planned programs' costs for MEEIA Cycle 1. Charts 8 and 9 of Schedule JAR-6 illustrate that MEEIA Cycle 2's incremental annual energy savings and incremental annual energy savings per $ of portfolio cost are approximately one-half of these same planned performance metrics for MEEIA Cycle 1 and may be vastly underestimated given the fact that actual incremental annual energy savings and actual incremental annual energy savings per $ of portfolio cost far exceeded these same planned performance metrics during 2013 and 2014 of MEEIA Cycle 1 as well as 2010 and 2011 of the pre-MEEIA programs.

Staff notes that Ameren Missouri's DSM market potential study for its MEEIA Cycle 1 was performed by Global Energy Partners, LLC, and was issued in January 2011, while its DSM market potential study for its MEEIA Cycle 2 was performed by EnerNoc Utility Solutions Consulting and was issued in December 2013.

[13] Presented by Kansas City Power & Light Company and KCP&L Greater Missouri Operations Company to their IRP stakeholder group on January 21, 2015 in a meeting required by 4 CSR 240-22.080(5)(A) for each utility's 2015 IRP to be filed on April 1, 2015.

[14] Charts 7, 8 and 9 of Schedule JAR-6 illustrate - for the total portfolio *less* residential lighting program - *actual* and *planned* annual programs' costs, deemed incremental annual energy savings, and deemed incremental annual kWh per $ of programs' costs. The impact of the residential lighting program was removed from Charts 7, 8 and 9, since the residential lighting program for MEEIA Cycle 2 has significantly lower energy and demand savings compared to MEEIA Cycle 1 due to the Energy Independence and Security Act of 2007 (EISA) lighting standards as discussed on page 23 of the Plan.

To remedy Staff's concerns for the 2014 IRP and for the Plan, Staff recommended that Ameren Missouri work with parties to its 2014 IRP case and with parties to its MEEIA Cycle 2 case (File No. EO-2015-0055) during joint agreement[15] discussions and during technical conferences, respectively, to help parties understand Staff's concerns and, if necessary, to resolve those concerns.

Q. Please describe the process to achieve a joint agreement concerning the 2014 IRP.

A. The first meeting of Ameren Missouri and its stakeholders to discuss a joint agreement was held on March 17, 2015. Compliance with 4 CSR 240-22.080(9) requires that the parties to the 2014 IRP make a joint filing by May 1, 2015, to include a joint agreement on a plan to remedy the identified deficiencies and concerns and a brief narrative description of those areas on which agreement cannot be reached.

Q. Once the joint agreement is filed, what actions must the Commission take regarding the 2014 IRP?

[15] 4 CSR 240-22.080(9) If the staff, public counsel, or any intervenor finds deficiencies in or concerns with a triennial compliance filing, it shall work with the electric utility and the other parties to reach, within sixty (60) days of the date that the report or comments were submitted, a joint agreement on a plan to remedy the identified deficiencies and concerns. If full agreement cannot be reached, this should be reported to the commission through a joint filing as soon as possible but no later than sixty (60) days after the date on which the report or comments were submitted. The joint filing should set out in a brief narrative description those areas on which agreement cannot be reached. The resolution of any deficiencies and concerns shall also be noted in the joint filing.

A. The Commission shall issue an order which contains its findings regarding at least one (1) of the options contained in 4 CSR 240-22.080(16).[16]

Q. If Ameren Missouri and other parties reach a joint agreement by May 1, 2015 in the IRP case file, will Staff's recommendation on the MEEIA Cycle 2 application and Plan change?

A. No. If a joint agreement is reached, including agreement on Staff's concerns related to the 2014 IRP, Ameren Missouri would still need to "redo" its MEEIA Cycle 2 filing to incorporate that agreement.

**Plan is not expected to be beneficial to all customers in the customer class in which the DSM programs are proposed**

Q. Do MEEIA and the MEEIA rules require that there be benefits for all customers as a result of the Commission-approved MEEIA programs and DSIMs?

A. Yes. The following statutory and rule language specify that there must be benefits for all customers:

> 393.1075.4. …. 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 the programs are utilized by all customers* …
>
> 4 CSR 240-20.094(2)(C) The commission shall approve the establishment, continuation, or modification of a DSIM and associated tariff sheets if it finds

[16] 4 CSR 240-22.080(16) The commission will issue an order which contains its findings regarding at least one (1) of the following options:
(A) That the electric utility's filing pursuant to this rule either does or does not demonstrate compliance with the requirements of this chapter, and that the utility's resource acquisition strategy either does or does not meet the requirements stated in 4 CSR 240-22.
(B) That the commission approves or disapproves the joint filing on the remedies to the plan deficiencies or concerns developed pursuant to section (9) of this rule;
(C) That the commission understands that full agreement on remedying deficiencies or concerns is not reached and pursuant to section (10) of this rule, the commission will issue an order which indicates on what items, if any, a hearing(s) will be held and which establishes a procedural schedule; and
(D) That the commission establishes a procedural schedule for filings and a hearing(s), if necessary, to remedy deficiencies or concerns as specified by the commission.

> the electric utility's approved demand-side programs are expected to result in energy and demand savings and *are beneficial to all customers in the customer class in which the programs are proposed, regardless of whether the programs are utilized by all customers* …
>
> (Emphasis added)

Q. What is Staff's understanding of the emphasized language in your previous answer?

A. Upon the advice of Staff Counsel, 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.

Q. Will all customers of Ameren Missouri receive some benefits from the *2016 – 2018 Energy Efficiency Plan*?

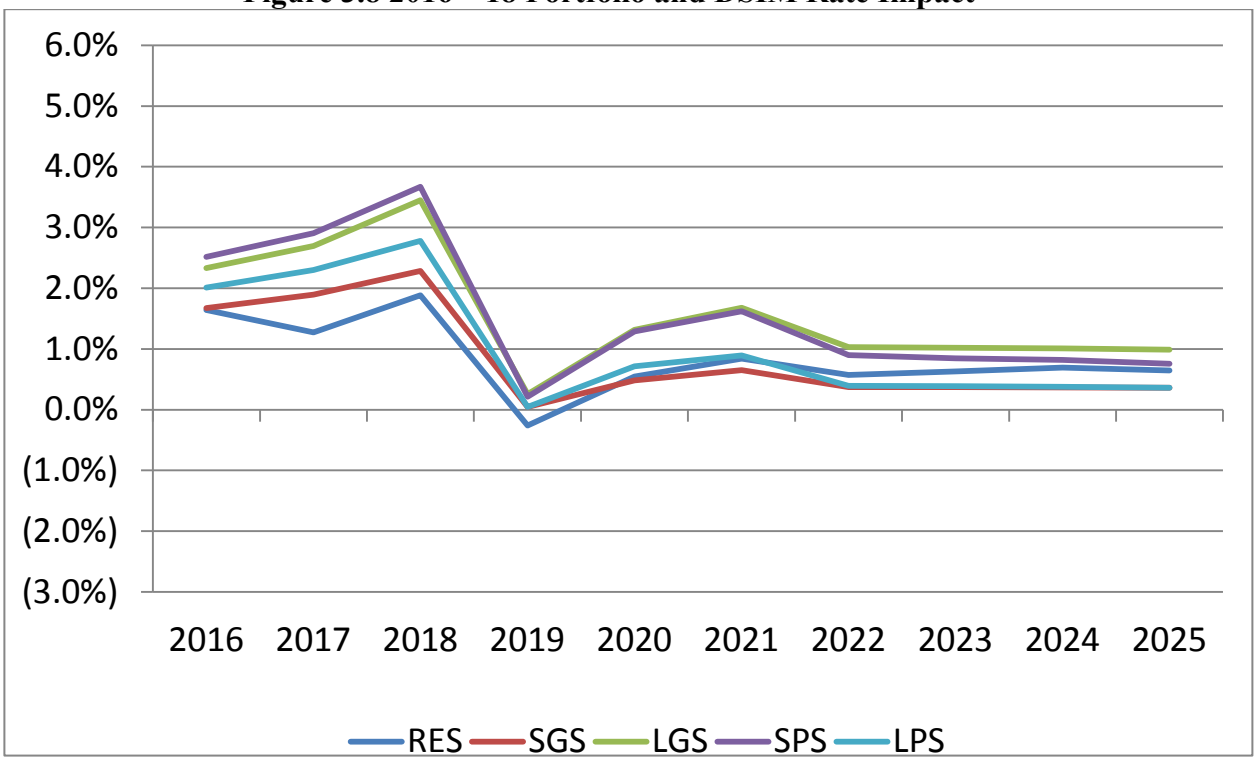
A. No.

Q. Why not?

A. Figure 3.8 of the *2016 – 2018 Energy Efficiency Plan* illustrates that the annual rate impact[17] from the Plan is never beneficial for any of the customer classes.

[17] The vertical axis on Figure 3.8 represents the percentage by which the annual rate for each rate class as a result of the Plan is expected to vary from the annual rate for each rate class that would occur absent the Plan. Positive percentages are an indication that the Plan is expected to raise rates and negative percentages are an indication that the Plan is expected to lower rates.

**Figure 3.8 2016 – 18 Portfolio and DSIM Rate Impact**




Q. What is causing the Plan's rate impacts to never be beneficial for any of the customer classes?

A. To help answer this question, I offer the following information from the Plan's work papers for Figure 3.8's residential customer class rate impacts and large general service ("LGS") customer class rate impacts:

| 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%** |

The rate impact each year is the result of "upward pressure" on rates due to 1) program cost recovery, 2) recovery of the NTD and NPI (performance mechanism), and 3) lower billing units due to energy and demand savings, and "downward pressure" on rates due to avoided utility costs,[18] including avoided energy costs, avoided capacity costs and avoided transmission and distribution costs. For 2016 through 2025, Figure 3.8 demonstrates that annually, the "upward pressure" on rates is greater than the "downward pressure" on rates. In 2016 – 2018, the "upward pressure" each year from the recovery of program costs, NTD and lower billing units far exceeds the "downward pressure" from avoided utility costs. The same can be said, but to a lesser extent for 2020 and 2021 when the "upward pressure" on rates from the recovery of the NPI and lower billing units exceeds the "downward pressure" on rates from avoided utility costs. For 2022 – 2025, there are no program costs, NTD costs or ~~NPT~~ NPI costs, but the "upward pressure" on rates from lower billing units exceeds the "downward pressure" on rates from avoided utility costs. The end result is that for 2016 – 2025 the Plan is not expected to provide any benefits through lower rates for any rate class in any year.

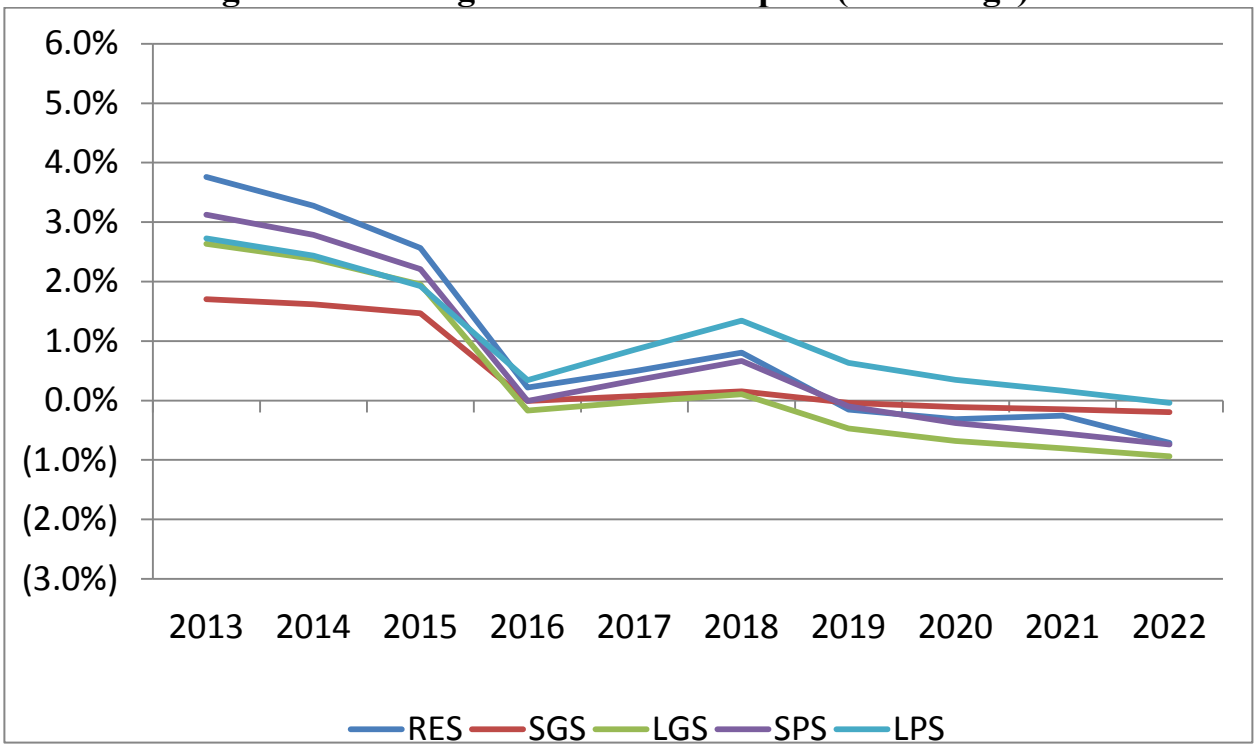
[18] 4 CSR 240-20.093(1)(F) Avoided cost or avoided utility cost means the cost savings obtained by substituting demand-side programs for existing and new supply-side resources. Avoided costs include avoided utility costs resulting from demand-side programs' energy savings and demand savings associated with generation, transmission, and distribution facilities including avoided probable environmental compliance costs. The utility shall use the same methodology used in its most recently-adopted preferred resource plan to calculate its avoided costs.

Q. Did the *2013 – 2015 Energy Efficiency Plan* include an expectation of some benefits for all customers, even those customers who did not participate directly in the DSM programs?

A. Yes, the *2013 – 2015 Energy Efficiency Plan* included an expectation that there would be benefits through lower rates for the residential and LGS rate classes by 2019 and for all rate classes by 2022.

This is illustrated by the *2013 – 2015 Energy Efficiency Plan's* Figure 2.9 and work papers for the Figure 2.9's residential customer class rate impacts[19] and LGS customer class rate impacts.

**Figure 2.9 Average Annual Rate Impact (% Change)**




Data used to produce RES customer class and LGS customer class lines in the above chart:

[19] The vertical axis on Figure 2.9 represents the percentage by which the annual rate for each rate class as a result of the MEEIA Cycle 1 plan is expected to vary from the annual rate for each rate class that would occur absent the MEEIA Cycle 1 plan. Positive percentages are an indication that the MEEIA Cycle 1 plan is expected to raise rates and negative percentages are an indication that the MEEIA Cycle 1 plan is expected to lower rates.

| Residential Rate Impact | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|
| | 2013 | 2014 | 2015 | 2016 | 2017 | 2018 | 2019 | 2020 | 2021 | 2022 |
| Program Cost Recovery | 2.3% | 2.3% | 2.3% | 0.0% | 0.0% | 0.0% | 0.0% | 0.0% | 0.0% | 0.0% |
| Performance Mechanism | 1.7% | 1.7% | 1.7% | 0.8% | 0.7% | 0.7% | 0.0% | 0.0% | 0.0% | 0.0% |
| Net Fuel Savings | -0.2% | -0.7% | -1.5% | -2.3% | -2.8% | -3.3% | -3.6% | -3.7% | -3.7% | -4.2% |
| Avoided T&D | 0.0% | -0.1% | -0.3% | -0.3% | -0.3% | -0.3% | -0.3% | -0.2% | -0.2% | -0.2% |
| Lower Billing Units | 0.0% | 0.1% | 0.2% | 2.0% | 2.8% | 3.7% | 3.7% | 3.7% | 3.7% | 3.7% |
| **Total Rate Impact** | **3.8%** | **3.3%** | **2.6%** | **0.2%** | **0.5%** | **0.8%** | **-0.2%** | **-0.3%** | **-0.3%** | **-0.7%** |
| LGS | | | | | | | | | | |
| | 2013 | 2014 | 2015 | 2016 | 2017 | 2018 | 2019 | 2020 | 2021 | 2022 |
| Program Cost Recovery | 1.8% | 1.8% | 1.8% | 0.0% | 0.0% | 0.0% | 0.0% | 0.0% | 0.0% | 0.0% |
| Performance Mechanism | 1.0% | 1.0% | 1.0% | 0.5% | 0.4% | 0.4% | 0.0% | 0.0% | 0.0% | 0.0% |
| Net Fuel Savings | -0.1% | -0.4% | -0.8% | -1.3% | -1.6% | -1.9% | -2.0% | -2.2% | -2.3% | -2.4% |
| Avoided T&D | 0.0% | -0.1% | -0.1% | -0.1% | -0.1% | -0.1% | -0.1% | -0.1% | -0.2% | -0.2% |
| Lower Billing Units | 0.0% | 0.0% | 0.1% | 0.8% | 1.3% | 1.7% | 1.7% | 1.7% | 1.7% | 1.6% |
| **Total Rate Impact** | **2.6%** | **2.4%** | **2.0%** | **-0.2%** | **0.0%** | **0.1%** | **-0.5%** | **-0.7%** | **-0.8%** | **-0.9%** |

For 2019 – 2022, there are no program costs, NTD costs or ~~NPT~~ NPI costs, but the "upward pressure" on rates from lower billing units is less than the "downward pressure" on rates from avoided utility costs, i.e., net fuel savings[20] and avoided T&D.

Q. Is Ameren Missouri accounting for all components of avoided utility costs in its customer class rate impact analysis for the Plan?

A. Yes. While avoided probable environmental costs are not explicitly included in the Plan's work papers for Figure 3.8, avoided probable environmental costs are implicitly included in the Plan's estimated avoided energy costs.[21]

[20] For the MEEIA Cycle 1, net fuel savings included avoided energy savings, avoided capacity savings and avoided probable environmental compliance savings.

[21] From page 21 of the Plan: As discussed above, one of the primary inputs to the cost effectiveness testing is the avoided cost assumptions used to value saved energy and capacity. The development of the avoided cost curves that were used in the 2013 Energy Efficiency Potential Study were grounded in the analysis of the IRP and are discussed in detail in Chapter 2 of the IRP filing made on October 1, 2014 in File No. EO-2015-0084. Forward energy market prices were developed using modeling software provided by Ventyx and commonly referred to as "MIDAS." The results of this production cost model provided fifteen unique forward power price forecasts that would include probable environmental costs by adjusting the following input variables:

1. Natural gas
2. Load growth
3. Coal plant retirements
4. Cost of carbon

Q. Are the avoided utility costs for the MEEIA Cycle 2 different than the avoided utility costs for the MEEIA Cycle 1?

A. Yes, drastically different.

Q. What are the differences and what is causing the differences in avoided utility costs from Ameren Missouri's MEEIA Cycle 1 to MEEIA Cycle 2?

A. The avoided utility costs for MEEIA Cycle 2 are roughly one-half the levels of MEEIA Cycle 1 avoided utility costs. The discussion of avoided utility costs is on pages 21 – 22 and 26 – 27 of the Plan. Schedule JAR-7 contains Ameren Missouri's discussion of "Lower Avoided Costs" on pages 26 – 27 of the Plan including Figure 2.3 which graphically illustrates the avoided energy cost comparison between MEEIA Cycle 1 and MEEIA Cycle 2.

Q. What is the total resource cost ("TRC")[22] [23] for the Plan?

A. Section 2.3 of the Plan contains data and a discussion of the Plan's Program and Portfolio Cost Effectiveness Results. Table 2.6 of the Plan identifies the net present value ("NPV") of the benefits for the portfolio to be $261,306,074 and the NPV of the programs'

[22] 4 CSR 240-20.093(1)(DD) Total resource cost test, or TRC, means the test of the cost-effectiveness of demand-side programs that compares the avoided utility costs to the sum of all incremental costs of end-use measures that are implemented due to the program (including both utility and participant contributions), plus utility costs to administer, deliver, and evaluate each demand-side program.

[23] 4 CSR 240-20.094(3)(A) For demand-side programs and *program plans that have a total resource cost test ratio greater than one (1)*, the commission shall approve demand-side programs or program plans, and annual demand and energy savings targets for each demand-side program it approves, provided it finds that the utility has met the filing and submission requirements of 4 CSR 240-3.164(2) and the demand-side programs and program plans—

1. Are consistent with a goal of achieving all cost-effective demand-side savings;
2. Have reliable evaluation, measurement, and verification plans; and
3. Are included in the electric utility's preferred plan or have been analyzed through the integration process required by 4 CSR 240-22.060 to determine the impact of the demand-side programs and program plans on the net present value of revenue requirements of the electric utility.

(B) The commission shall approve demand-side *programs having a total resource cost test ratio less than one (1)* for demand-side programs targeted to low-income customers or general education campaigns, if the commission determines that the utility has met the filing and submission requirements of 4 CSR 240-3.164(2), the program or program plan is in the public interest, and meets the requirements stated in paragraphs (3)(A)2. and 3

costs for the portfolio to be $170,408,353. The portfolio's TRC is 1.53 (= $261,306,074 / $170,408,353).

Q. Why does the Plan never provide a beneficial annual rate impact for any customer class even though the Plan's TRC of 1.53 indicates that the Plan is expected to results in benefits which exceed costs on a net present value basis?

Q. Table 1 below identifies the components of benefits and costs included in the TRC calculation and in the rate impact analysis:

**Table 1**
**Components of TRC and RateImpact Analysis**

| Components | TRC | Rate Impact |
|---|---|---|
| **Benefits** | | |
| **Avoided Energy Costs** | X | X |
| **Avoided Capacity Costs** | X | X |
| **Avoided T&D Costs** | X | X |
| **Avoided Environmental Costs** | X | X |
| **Costs** | | |
| **Utility's Program Costs** | X | X |
| **Participants' Program Costs** | X | |
| **Utility's Throughput Disincentive** | | X |
| **Utility's Performance Incentive** | | X |
| **Lower Billing Units** | | X |

While all four (4) of the components of benefits and the utility's program costs are the same for the TRC and rate impact analysis, the TRC includes participants' program costs, which are not included in the rate impact analysis. The rate impact analysis includes costs for utility's throughput disincentive, performance incentive and lower billing units, which are not included in the TRC. These costs drive the rates higher. The Plan's total annual costs related to utility's throughput disincentive, performance incentive and lower billing units exceed the

annual participants' program costs. Consequently, the Plan's annual rate impact is never beneficial while – at the same time - the TRC is beneficial.

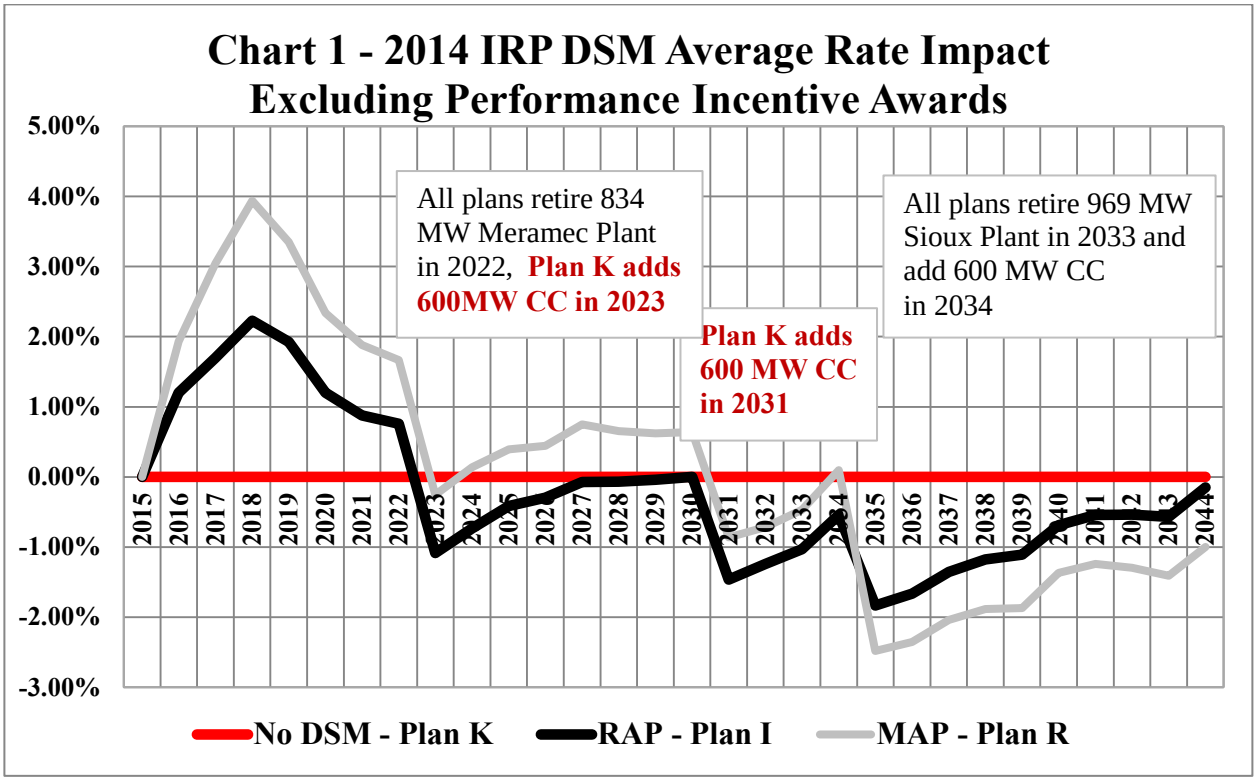
Q. Has Staff performed any analysis of Ameren Missouri's RAP portfolio's annual rate impact from data in Ameren Missouri's 2014 IRP?

A. Yes.

Q. Please describe Staff's analysis.

A. Staff identified three (3) alternative resource plans which were analyzed through full integrated resource and risk analysis[24] for the 2014 IRP and which allow Staff to quantify the annual average rate impact for the RAP (Plan I) and MAP (plan R) relative to no new DSM after MEEIA Cycle 1 (Plan K). Schedule JAR-8 contains the capacity balance for Plan K, Plan I and Plan R and the changes in supply-side and demand-side resources each year of the ~~29~~20-year planning horizon. Using the annual average rate data which was used by Ameren Missouri to produce Figure 9A.13 of the 2014 IRP for Plan K, Plan I and Plan R, Staff produced the average rate impacts for Ameren Missouri's long term implementation of RAP and MAP shown in Chart 1 below.

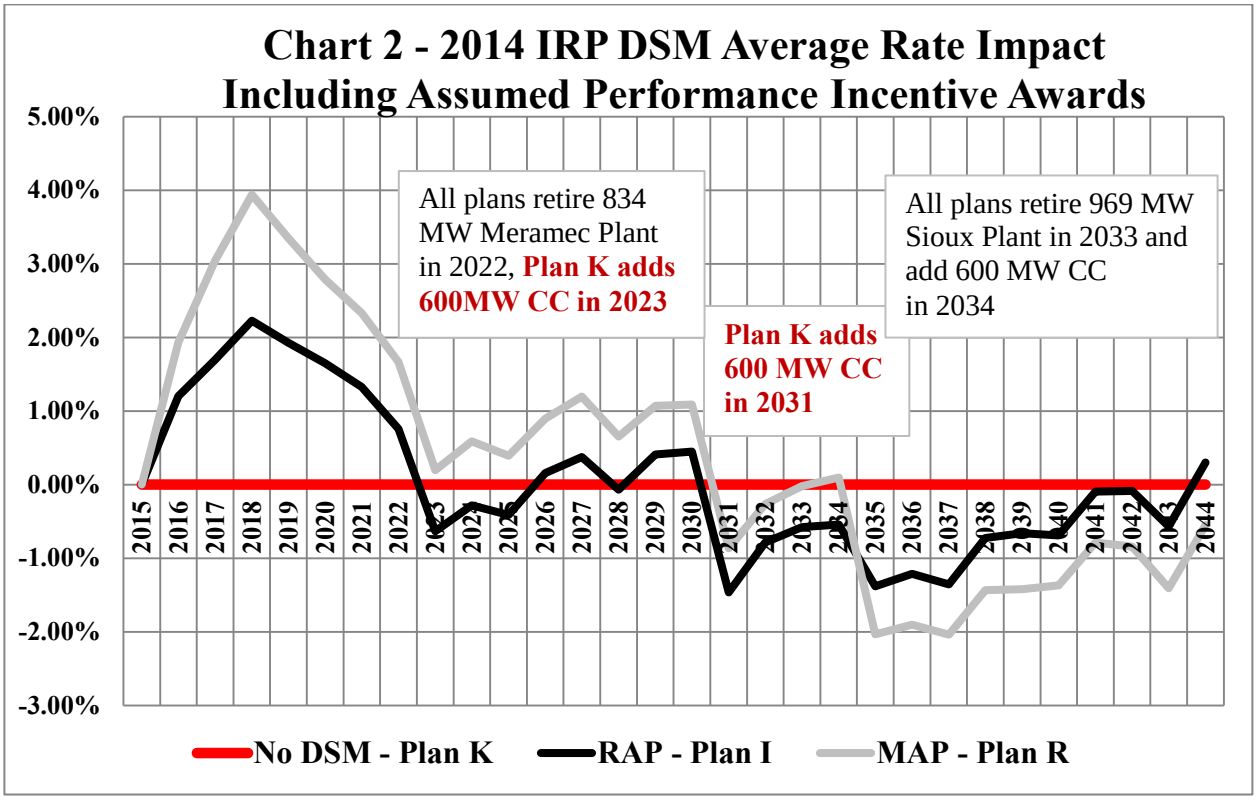
[24] 4 CSR 240-22.060 Integrated Resource Plan and Risk Analysis PURPOSE: This rule requires the utility to design alternative resource plans to meet the planning objectives identified in 4 CSR 240-22.010(2) and sets minimum standards for the scope and level of detail required in resource plan analysis and for the logically consistent and economically equivalent analysis of alternative resource plans. This rule also requires the utility to identify the critical uncertain factors that affect the performance of alternative resource plans and establishes minimum standards for the methods used to assess the risks associated with these uncertainties.




Staff adjusted its annual average rates in Chart 1 to include performance incentive awards similar to those in the Plan.[25] [26] The annual average rate impact with assumed performance incentive awards is shown in Chart 2 below.

[25] Staff confirmed that each alternative resource plan's annual average rates in Figure 9A.13 include the recovery of lost margin revenue, because the integrated resource analysis models a rate case every year. Staff also confirmed with Ameren Missouri that each alternative resource plan's annual average rates in Figure 9A.13 does not include any rate impact for a DSIM performance incentive award. March 16, 2015 phone conversation between Matt Michels and John Rogers.

[26] Staff assumed performance incentive awards average rate impact of 0.45% in 2020, 2021, 2023, 2024, 2026, 2027, 2029, 2030, 2032, 2033, 2035, 2036, 2038, 2039, 2041, 2042, and 2044. The assumed 0.45% is the average of the Plan's 2020 and 2021 performance incentive award annual impact of 0.3% and 0.6% for Residential and LGS customer classes, respectively.




Q. What is causing the up and down pattern of the RAP – Plan I average rate impact in Chart 2?

A. The detailed answer lies in the 2014 IRP's integrated resource analysis for No DSM - Plan K and RAP- Plan I. However, a general understanding of what is causing the up and down pattern of the RAP – Plan I line in Chart 2 can be gained by studying the abbreviated capacity balance sheets for Plan K and Plan I in Schedule JAR-8. Highlighted on Schedule JAR-8 are the differences between the Plan K and Plan I, including the following:

1. The increasing level of capacity from energy efficiency programs which reaches a high of 929 MW in 2034;
2. The increasing level of capacity from demand response programs which reaches a high of 161 MW in 2034;

3. As a result of the additional capacity from energy efficiency and demand response programs in the RAP – Plan I, there is an increased level of generating capacity available to make off-system sales when it is beneficial to do so in the MISO market;
4. Both plans retire the 834 MW Meramec Plant in 2022 and the 969 MW Sioux Plant in 2033; and
5. While the No DSM – Plan K requires the addition of 600 MW of combined cycle gas turbine generation ("CC") in 2023, 600 MW CC in 2031 and 600 MW CC in 2034, the RAP- Plan I requires the addition of 600 MW CC in 2034.

Q. What observations and conclusion do you make from Chart 2 and supporting Schedule JAR-8?

A. Chart 2 demonstrates that for 2016 – 2022, RAP has higher average rates due primarily to the cost of DSM programs with no impact on supply-side resource additions or retirements. For 2023 – 2030, RAP has very little overall average rate impact (moving below and above the 0.00% line several times). For 2031 – 2040, there are lower annual average rates as a result of RAP – Plan I. Finally, for the 2016 – 2044 planning horizon, there is virtually no overall annual average rate impact from the RAP – Plan I since the numeric average of the RAP – Plan I annual average rate impacts for the 29 years in Chart 2 is negligible, i.e., higher average annual average rates by 0.03%.

Q. What is the overall annual average rate impact of the MAP – Plan R for 2016 - 2044 planning horizon in Chart 2 and supporting Schedule JAR-8?

A. MAP – Plan R is expected to have average annual average rates which are 0.36% higher than the average annual average rates of No DSM – Plan K.

Q. What are the average annual average rate impacts of the RAP DSM – Plan I and the MAP DSM – Plan R over the 20-year planning horizon (2016 – 2035) of the 2014 IRP?

A. The average annual average rate impacts of the RAP DSM – Plan I and the MAP DSM – Plan R over the 20-year planning horizon of 2016 – 2035 are 0.30% higher and 1.10% higher, respectively.

Q. Why does Ameren Missouri use a 29-year planning horizon to analyze long-term utility costs and average rate impacts instead of the 20-year planning horizon of the 2014 IRP?

A. The 2014 IRP provides: "Integration, sensitivity and risk analyses for the evaluation of alternative resource plans were done assuming that rates would be adjusted annually for the 20-year planning horizon and 10 additional years for end effects, and by treating both supply-side and demand-side resources on an equivalent basis."[27]

Q. What conclusion do you make as a result of Staff's analysis in Chart 2?

A. I conclude that the RAP DSM strategy contained in the 2014 IRP and proposed in MEEIA Cycle 2 application is expected to result in no overall long-term benefits for all customers of Ameren Missouri – a result that is contrary to MEEIA and the MEEIA rules.

**How the Plan's proposed recovery of lost margin revenues may result in additional earnings for shareholders**

Q. Please compare the 2013 deemed annual energy savings, deemed annual net shared benefits and Ameren Missouri's throughput disincentive with the 2013 annual energy savings, annual net shared benefits and Ameren Missouri's throughput disincentive based on final full EM&V for 2013.

[27] See page 17 – 18 of Chapter 9 of the 2014 IRP.

A. Table 2 below contains Staff's comparison.

**Table 2**
**Staff Analysis of Ameren Missouri 2013 Throughput Disincentive**

| | 2013 (1) |
|---|---|
| **Deemed Annual Energy Savings in MWh** | 337,368 |
| **EM&V Annual Energy Savings in MWh** | 347,360 |
| **Deemed *less* EV&V MWh Savings** | -9,992 |
| **Deemed less EV&V % Change in MWh Savings** | -3.0% |
| | |
| **Deemed Annual Net Shared Benefits** | $ 141,010,520 |
| **EM&V Annual Net Shared Benefits** | $ 123,646,681 |
| **Deemed *less* EV&V Annual Net Shared Benefits** | $ 17,363,839 |
| **Deemed *less* EV&V % Change in Annual Net Shared Benefits** | 12.3% |
| | |
| **26.34% of Deemed Annual Net Shared Benefits** | $ 37,142,171 |
| **26.34% of EM&V Annual Net Shared Benefits** | $ 32,568,536 |
| **26.34 % of Deemed *less* EM&V Annual Net Shared Benefits** | $ 4,573,635 |

(1) 2013 EM&V values from paragraph 11 of the Second Non-Unanimous Stipulation and Agreement Settling the Program Year 2013 Change Requests in Case No. EO-2012-0142.

Q. From Table 2, what observations and conclusions does Staff make concerning the amount of lost margin revenue Ameren Missouri recovered for 2013?

A. For 2013 and as a result of Rider EEIC, Staff observes that Ameren Missouri will recover $37,142,171 for its throughput disincentive net shared benefits ("TD-NSB Share") as a result of the deemed annual energy and demand savings values and deemed annual net shared benefits for all actual program measures installed and actual programs' costs incurred in 2013. However, if full EM&V had been used to determine the actual annual energy and demand savings and actual annual net shared benefits for the 2013 TD-NSB Share instead of using deemed savings amounts, Ameren Missouri's TD-NSB Share amount would have been only $32,568,536. Staff concludes that - all else equal – for 2013, Ameren Missouri received, through its TD-NSB Share, $4,573,635 more than its actual (as measured

and verified through full EM&V) lost margin revenue. Thus, for 2013, Ameren Missouri received ~~$4,573,536~~$4,573,635 of pre-tax earnings through its Rider EEIC.

Q. Does this mean the Commission should order Ameren Missouri to refund the amount of $4,573,635 to its customers?

A. No.

Q. Please explain your answer.

A. As part of the 2012 Stipulation and the Rider EEIC, only deemed annual energy and demand savings amounts and deemed annual net shared benefits for each measure in the Commission-approved TRM are to be used to determine the annual net shared benefits for Ameren Missouri's net throughput disincentive component (NTD) of the Rider EEIC. Ameren Missouri will receive 26.34% of the deemed annual net shared benefits through the NTD of the Rider EEIC.

Q. Can a similar analysis be performed for 2014, and if not, why not?

A. No, final EM&V has not been determined for program year 2014.

Q. Has Staff performed a prudence review of the MEEIA Cycle 1 costs?

A. Yes. On December 23, 2014, Staff filed Staff's Report of First MEEIA Prudence Audit in File No. EO-2015-0029, in which Staff found no imprudence by Ameren Missouri for the period January 2, 2013 through June 30, 2014. On February 11, 2015, the Commission issued its Order Approving Staff's Prudence Review effective February 21, 2015.

Q. If no refund is required and no imprudence was found, what is the significance of your 2013 throughput disincentive analysis?

A. This analysis is an example of how utility earnings can result from the NTD component of the Rider EEIC and provides further support for the recommendation of Staff witness Sarah Kliethermes to reject Ameren Missouri's NTD component in Rider EEIC and to approve the use of the lost revenue component of a DSIM as defined in 4 CSR 240-20.093(2)(G) in the event the Commission approves modification to the DSM programs and DSIM. The lost revenue component of a DSIM is designed to help assure that Ameren Missouri receives lost margin revenues to the extent lost margin revenues are needed for Ameren Missouri to achieve its authorized return on equity.

**Plan's proposed earnings opportunities are not associated with cost-effective measurable and verifiable efficiency savings**

Q. Does the Plan include a simplified and less costly approach to EM&V than the approach for EM&V in the *2013 – 2015 Energy Efficiency Plan*?

A. Yes. The Plan includes the following:

> Simplified Evaluation, Measurement, & Verification (EM&V) practices will reduce program costs and reduce the likelihood of costly litigation over program impact assessments. The ongoing and significant effort spent evaluating savings attribution in the form of Net to Gross (NTG) ratios has proven to raise more issues than it solves. The 2013 EM&V process has demonstrated both the uncertainty in estimating the components of NTG and the contentious nature of any attempts to resolve that uncertainty. Ultimately the goal of attribution is to ensure that energy efficiency funds are spent wisely and in a manner that causes customers to take actions they would not otherwise take. Therefore, *our plan is to limit annual EM&V work to updating measure impacts prospectively while deeming NTG for the entire implementation period.* In order to quantify NTG for Ameren Missouri's presumed next MEEIA plan (2019-2021), this plan incorporates a common sense approach based on completion of market assessments by the end of 2016 which will allow time for stakeholder vetting and integration with the next round of plan development.[28]
>
> A budget of 5% of the program costs for EM&V during MEEIA 2013-15 has allowed programs to be evaluated at a 10% precision level with 90%

[28] See pages 10 – 11 of the Plan.

> confidence. Looking forward to MEEIA 2016-18, with the plan to deem NTG and forego the study of the complicated topics of free ridership, spillover, and market effects, similarly effective EM&V should be able to be completed with a budget of 3% of program costs. The 2% saved relative to MEEIA 2013-15 will be rededicated to the efforts of market assessments described below and any other related work that may come up, such as contribution to statewide TRM efforts.[29]

Q. Does Staff support the simplified approach to EM&V for determination of the NPI?

A. No.

Q. Why not?

A. Upon the advice of Staff Counsel, Staff interprets "the commission shall provide timely earning opportunities associated with cost- effective *measurable and verifiable efficiency savings"* in 393.1075.3(3) and in 4 CSR 240-20.093(2)(C)3. to mean an after-the-fact determination of NTG ratios of each program is required by statute and rule for the NPI in the Rider EEIC. The simplified approach is not an after-the-fact determination of measureable and verifiable savings.

Q. Do you have any further rebuttal testimony?

A. No.

[29] See page 71 of the Plan.

**Educational Background and Work Experience of John A. Rogers**

I have a Master of Business Administration degree from the University of San Diego and a Bachelor of Science degree in Engineering Science from the University of Notre Dame. My work experience includes 34 years in energy utility engineering, system operations, strategic planning, regulatory affairs, general management and management consulting. From 1974 to 1985, I was employed by San Diego Gas & Electric with responsibilities in gas engineering, gas system planning and gas operations. From 1985 to 2000, I was employed by Citizens Utilities primarily in leadership roles for gas operations in Arizona, Colorado and Louisiana. From 2000 to 2003, I was an executive consultant for Convergent Group (a division of Schlumberger) providing management consulting services to energy utilities. From 2004 to 2008, I was employed by Arkansas Western Gas and was responsible for strategic planning and resource planning. I have provided expert testimony before the California Public Utilities Commission, Arizona Corporation Commission, Arkansas Public Service Commission and Missouri Public Service Commission in general rate cases, applications for special projects, gas resource plan filings, electric resource plan filings, demand-side management programs and demand-side programs investment mechanism cases. I have been employed by the Missouri Public Service Commission since December 2008 and am responsible for the Commission Staff's review of and recommendations concerning electric utility resource planning, demand-side management programs, demand-side programs investment mechanisms, and fuel adjustment clauses.

# John A. Rogers
# Testimony, Reports and Rulemakings

## BEFORE THE MISSOURI PUBLIC SERVICE COMMISSION

| File Number | Company | Issues |
|---|---|---|
| ER-2010-0036 | Ameren Missouri | Fuel Adjustment Clause<br>Demand-Side Programs (DSM)<br>DSM Cost Recovery |
| EX-2010-0368<br>EW-2010-0254 | Missouri Public Service Commission | Missouri Energy Efficiency Investment Act Rulemaking |
| EX-2010-0254<br>EW-2009-0412 | Missouri Public Service Commission | Electric Utility Resource Planning Rulemaking |
| EO-2009-0237 | KCP&L Greater Missouri Operations Company | Electric Utility Resource Planning Compliance Filing |
| ER-2009-0090 | KCP&L Greater Missouri Operations Company | Fuel Adjustment Clause |
| ER-2010-0355 | Kansas City Power and Light | DSM Cost Recovery<br>Fuel Switching |
| ER-2010-0356 | KCP&L Greater Missouri Operations Company | Fuel Adjustment Clause<br>DSM Cost Recovery<br>Fuel Switching |
| AO-2011-0035 | All Electric Utilities | DSM Status Report |
| EO-2011-0066 | Empire District Electric Company | Electric Utility Resource Planning Compliance Filing |
| ER-2011-0028 | Ameren Missouri | DSM Cost Recovery |
| EO-2011-0271 | Ameren Missouri | Electric Utility Resource Planning Compliance Filing |
| EO-2012-0009 | KCP&L Greater Missouri Operations Company | Demand-side Programs Investment Mechanism |
| EO-2012-0142 | Ameren Missouri | Demand-side Programs Investment Mechanism |

# John A. Rogers
# Testimony, Reports and Rulemakings

## BEFORE THE MISSOURI PUBLIC SERVICE COMMISSION (cont.)

| File Number | Company | Issues |
|---|---|---|
| ER-2012-0166 | Ameren Missouri | DSM Cost Recovery<br>Demand-side Programs<br>Investment Mechanism |
| ER-2012-0174 | Kansas City Power & Light | DSM Cost Recovery |
| ER-2012-0175 | KCP&L Greater Missouri Operations Company | DSM Cost Recovery<br>Demand-side Programs<br>Investment Mechanism |
| ER-2012-0345 | Empire District Electric Co. | DSM Cost Recovery |
| EO-2012-0323 | Kansas City Power & Light | Electric Utility Resource Planning Compliance Filing |
| EO-2012-0324 | KCP&L Greater Missouri Operations Company | Electric Utility Resource Planning Compliance Filing |
| EO-2013-0537 | Kansas City Power & Light | Electric Utility Resource Planning Annual Update |
| EO-2013-0538 | KCP&L Greater Missouri Operations Company | Electric Utility Resource Planning Annual Update |
| EO-2013-0547 | Empire District Electric Co. | Electric Utility Resource Planning Compliance Filing |
| EX-2014-0205 | Dogwood Energy, LLC | Rulemaking Petition |
| EO-2014-0095 | Kansas City Power & Light | Demand-side Programs<br>Investment Mechanism |
| EO-2015-0084 | Ameren Missouri | Electric Utility Resource Planning Compliance Filing |

# John A. Rogers
# Testimony, Reports and Rulemakings

## BEFORE THE ARKANSAS PUBLIC SERVICE COMMISSION

| Docket Number | Company | Issues |
|---|---|---|
| 07-079-TF | Arkansas Western Gas | Arkansas Weatherization Program |
| 07-078-TF | Arkansas Western Gas | Initial Energy Efficiency Programs |
| 07-041-P | Arkansas Western Gas | Special Contract |
| 06-028-R | Arkansas Western Gas | Resource Planning Guidelines for Electric Utilities |
| 05-111-P | Arkansas Western Gas | Gas Conservation Home Weatherization Program |

# RIDER EEIC
# ENERGY EFFICIENCY INVESTMENT CHARGE
# For MEEIA CYCLE 1 Plan

## APPLICABILITY

This Rider EEIC - Energy Efficiency Investment Charge(Rider EEIC) is applicable to all kilowatt-hours (kWh) of energy supplied to customers served by Ameren Missouri (Company) under Service Classification Nos. 1(M), 2(M), 3(M), 4(M), 11(M), and 12(M), excluding kWh of energy supplied to "opt-out" customers.

Charges passed through this Rider EEIC reflect the charges approved to be collected from the implementation of the MEEIA Cycle 1 Plan. Those charges include: 1) projected Program Costs, projected Ameren Missouri's TD-NSB Share and Performance Incentive Award (if any) for each Effective Period, 2) Reconciliations, with interest, to true-up for differences between the revenues billed under this Rider EEIC and total actual monthly amounts for: i) Program Costs incurred, ii) Ameren Missouri's TD-NSB Share incurred, and iii)amortization of any Performance Incentive Award ordered by the Missouri Public Service Commission (Commission) and 3)any Ordered Adjustments. Charges under this Rider EEIC shall continue after the anticipated December 31, 2015 end of MEEIA Cycle 1 Plan until such time as the charges described in items 1), 2) and 3) in the immediately preceding sentence have been billed. Charges arising from the MEEIA Cycle 1 Plan that are the subject of this Rider EEIC shall be reflected in one "Energy Efficiency Invest Chg" on customers' bills in combination with any charges arising from a rider that is applicable to post-MEEIA Cycle 1 Plan demand-side management programs approved under the Missouri Energy Efficiency Investment Act.

## DEFINITIONS

As used in this Rider EEIC, the following definitions shall apply:

"Ameren Missouri's TD-NSB Share" means 26.34% of the TD-NSB multiplied by the Time-Value Adjustment Factor.

"Effective Period" (EP) means the twelve (12) billing months beginning with the February billing month and ending with the January billing month. Where an additional EEIC filing is made during a calendar year, the Effective Period for such a filing shall begin with the June or October billing month and end with the subsequent January billing month.

"Evaluation Measurement & Verification - Net Shared Benefits" (EM&V-NSB) means the 2013 present value of the lifetime avoided costs (i.e., avoided energy, capacity, transmission and distribution, and probable environmental compliance costs) for the MEEIA Cycle 1 Plan using the EM&V results described in paragraph 11 of the Stipulation less the 2013 present value of Program Costs. Paragraphs 5.b.ii and 6. c. of the Stipulation provide further description of the EM&V-NSB.

"MEEIA Cycle 1 Plan" has the same meaning as the defined term "Plan" provided for in paragraph 4 of the Stipulation, as it may be hereafter amended by Commission-approved amendments to the Stipulation.

"MWH Target" has the meaning provided for in paragraph 5.b.ii and Appendix B of the Stipulation.

"Program Costs" means program expenditures, including such items as program design, administration, delivery, end-use measures and incentive payments, evaluation, measurement and verification, market potential studies and work on the Technical Resource Manual (TRM).

## RIDER EEIC
## ENERGY EFFICIENCY INVESTMENT CHARGE (Cont'd.)
## For MEEIA CYCLE 1 Plan

**DEFINITIONS (Cont'd.)**

"Performance Incentive Award" means the sum of a two-year annuity (using 6.95% as a discount rate and not discounting the first period) of a percentage of EM&V-NSB as described below and further described in paragraph 5.b.ii and Appendix B of the Stipulation:

| Percent of MWH Target | Percent of EM&V-NSB* |
|---|---|
| <70 | 0.00% |
| 70 | 4.60% |
| 80 | 4.78% |
| 90 | 4.92% |
| 100 | 5.03% |
| 110 | 5.49% |
| 120 | 5.87% |
| 130 | 6.19% |
| >130 | 6.19% |

*Includes income taxes (i.e. results in revenue requirement without adding income taxes). The percentages are interpolated linearly between the performance levels.

"Stipulation" means the Stipulation and Agreement approved by the Commission in its order effective August 11, 2012, as amended by order effective December 29, 2012, in File No. EO-2012-0142, as it may be amended further by subsequent Commission orders.

"Throughput Disincentive - Net Shared Benefits" (TD-NSB)means the 2013 present value of the lifetime avoided costs (i.e., avoided energy, capacity, transmission and distribution, and probable environmental compliance costs) for the MEEIA Cycle 1 Plan using the deemed values in the TRM, less the 2013 present value of Program Costs as further described in paragraphs 5.b.i and 6. b. of the Stipulation.

"Time-Value Adjustment Factor" means the factor used each month to convert Ameren Missouri's TD-NSB Share from a present value into a nominal revenue requirement. The factor is [1.0695 ^ (Calendar Year - 2013)].

RIDER EEIC
ENERGY EFFICIENCY INVESTMENT CHARGE (Cont'd.)
For MEEIA CYCLE 1 Plan

ENERGY EFFICIENCY INVESTMENT RATE (EEIR) DETERMINATION

The EEIR during each applicable EP is a dollar per kWh rate for each Service Classification calculated as follows:

$$EEIR = [NPC + NTD + NPI + NOA]/PE$$

Where:

NPC = Net Program Costs for the applicable EP as defined below,

$$NPC = PPC + PCR$$

PPC = Projected Program Costs is an amount equal to Program Costs projected by the Company to be incurred during the applicable EP.

PCR = Program Costs Reconciliation is equal to the cumulative difference, if any, between the PPC revenues billed resulting from the application of the EEIR and the actual Program Costs incurred through the end of the previous EP (which will reflect projections through the end of the previous EP due to timing of adjustments). Such amounts shall include monthly interest charged at the Company's monthly short-term borrowing rate.

NTD = Net Throughput Disincentive for the applicable EP as defined below,

$$NTD = PTD + TDR$$

PTD = Projected Throughput Disincentive is 90% of Ameren Missouri's TD-NSB Share projected by the Company to be incurred during the applicable EP.

TDR = Throughput Disincentive Reconciliation is equal to the cumulative difference, if any, between the PTD revenues billed resulting from the application of the EEIR and 100% of Ameren Missouri's TD-NSB Share through the end of the previous EP as adjusted for the inputs described in paragraph 6.b. of the Stipulation, (which will reflect projections through the end of the previous EP due to timing of adjustments). Prior to the beginning of the February 2014 billing month, such amounts shall include monthly interest charged at the Company's monthly Allowance for Funds Used During Construction (AFUDC) rate. Beginning with the start of the February 2014 billing month, any cumulative difference and all subsequent amounts shall include monthly interest charged at the Company's monthly short-term borrowing rate.

RIDER EEIC
ENERGY EFFICIENCY INVESTMENT CHARGE (Cont'd.)
For MEEIA CYCLE 1 Plan

EEIR DETERMINATION (Cont'd.)

NPI = Net Performance Incentive for the applicable EP as defined below,

$$NPI = PI + PIR$$

PI = Performance Incentive is equal to the Performance Incentive Award monthly amortization multiplied by the number of billing months in the applicable EP.

The monthly amortization shall be determined by dividing the Performance Incentive Award by the number of available billing months between the first billing month of the first EEIR filing after the determination of the Performance Incentive Award and 24 calendar months following the end of the annual period in which the Performance Incentive Award is determined.

The number of applicable billing months in the EP shall be the number of applicable billing months less the number of months including Performance Incentive Award amortization from previous EPs.

PIR = Performance Incentive Reconciliation is equal to the cumulative difference, if any, between the PI revenues billed resulting from the application of the EEIR and the monthly amortization of the Performance Incentive Award through the end of the previous EP (which will reflect projections through the end of the previous EP due to timing of adjustments). Such amounts shall include monthly interest charged at the Company's monthly short-term borrowing rate.

NOA = Net Ordered Adjustment for the applicable EP as defined below,

$$NOA = OA + OAR$$

OA = Ordered Adjustment is the amount of any adjustment to the EEIC ordered by the Commission as a result of prudence reviews and/or corrections under this Rider EEIC. Such amounts shall include monthly interest at the Company's monthly short-term borrowing rate.

OAR = Ordered Adjustment Reconciliation is equal to the cumulative difference, if any, between the OA revenues billed resulting from the application of the EEIR and the actual OA ordered by the Commission through the end of the previous EP (which will reflect projections through the end of the previous EP due to timing of adjustments). Such amounts shall include monthly interest charged at the Company's monthly short-term borrowing rate.

RIDER EEIC
ENERGY EFFICIENCY INVESTMENT CHARGE (Cont'd.)
For MEEIA CYCLE 1 Plan

**EEIR DETERMINATION (Cont'd.)**

PE = Projected Energy, in kWh, forecasted to be delivered to the customers to which the Rider EEIC applies during the applicable EP.

The EEIR components and Total EEIR applicable to the individual Service Classifications shall be rounded to the nearest $0.000001.

Allocations of charges for each Service Classification for the MEEIA Cycle 1 Plan will be made in accordance with the Stipulation.

This Rider EEIC shall not be applicable to customers that have satisfied the opt-out provisions contained in Section 393.1075.7, RSMo.

**FILING**

The Company shall make an EEIC filing each calendar year to be effective for the subsequent calendar year's February billing month. The Company is allowed or may be ordered by the Commission to make one other EEIC filing in each calendar year with such subsequent filing to be effective beginning with either the June or October billing month. Rider EEIC filings shall be made at least sixty (60) days prior to their effective dates.

**PRUDENCE REVIEWS**

A prudence review shall be conducted no less frequently than at twenty-four (24) month intervals in accordance with 4 CSR 240-20.093(10). Any costs which are determined by the Commission to have been imprudently incurred or incurred in violation of the terms of this Rider EEIC shall be addressed through an adjustment in the next EEIR determination and reflected in factor OA above.

RIDER EEIC
ENERGY EFFICIENCY INVESTMENT CHARGE (Cont'd.)
For MEEIA CYCLE 1 Plan
(Applicable To Determination of EEIR for the Billing Months of February 2014 through January 2015)

EEIR Components and Total EEIR

| Service Class | NPC/PE ($/kWh) | NTD/PE ($/kWh) | NPI/PE ($/kWh) | NOA/PE ($/kWh) | Total EEIR ($/kWh) |
|---|---|---|---|---|---|
| 1(M)-Residential Service | $0.001447 | $0.002025 | $0.000000 | $0.000000 | **$0.003472** |
| 2(M)-Small General Service | $0.000920 | $0.001035 | $0.000000 | $0.000000 | **$0.001955** |
| 3(M)-Large General Service | $0.000933 | $0.001439 | $0.000000 | $0.000000 | **$0.002372** |
| 4(M)-Small Primary Service | $0.000936 | $0.001087 | $0.000000 | $0.000000 | **$0.002023** |
| 11(M)-Large Primary Service | $0.000809 | $0.000886 | $0.000000 | $0.000000 | **$0.001695** |
| 12(M)-Large Transmission Service | $0.000000 | $0.000000 | $0.000000 | $0.000000 | **$0.000000** |

MO PSC CASE NO. AO-2011-0035
STATUS REPORT ON ENERGY EFFICIENCY
July 2014

## Ameren Missouri – Electric

**Prepared by:** John Rogers and Hojong Kang

**Date:** July 10, 2014

**Collaborative Name and Description:** Ameren Missouri Demand-Side Management (DSM) Quarterly Stakeholder Group was ordered and approved in stipulation and agreements concerning Ameren Missouri's Chapter 22 Electric Utility Resource Planning filings in File Nos. EO-2006-0240 and EO-2007-0409. Ameren Missouri agreed to continue quarterly DSM stakeholder meetings as described in paragraph 14 of the Commission-approved Stipulation and Agreement in File No. EO-2012-0142. Ameren Missouri now identifies its stakeholder collaborative as the Energy Efficiency Regulatory Stakeholder Advisory Team.

**Meetings:** Normally held quarterly at Ameren Missouri's offices for 4 – 5 hours.

**Participants:**

- Regular: Ameren Missouri, Staff, Office of the Public Counsel (OPC), Missouri State Division of Energy (MO-DE), Natural Resource Defense Council (NRDC), Sierra Club, Earth Island Institute d/b/a Renew Missouri, Missouri Industrial Energy Consumers (MIEC), Barnes-Jewish Hospital, and Laclede Gas Company.[1]
- Occasional: Community Action Agencies.
- Consultants: Lockheed Martin, Honeywell Utility Solutions, EnerNoc, Inc., The Battle Group, Washington University, Cadmus Group, ADM Associates.
- Commission Evaluation, Measurement and Verification (EM&V) Auditor: Johnson Consulting Group.

**Programs Summaries: See Attachment A.**

**Effectiveness of Participants:** Ameren Missouri encourages participation and critical feedback. All participants freely express their points of view and provide advice. The meetings are efficient and effective overall. Ameren Missouri's consultants participate in many Energy Efficiency Regulatory Stakeholder Advisory Team meetings. Effective participation by all stakeholders is critical during planning, implementation, and EM&V activities for the initial 3-year program plan for the Company's Commission-approved Missouri Energy Efficiency Investment Act of 2009 (MEEIA) programs (PY5 in 2013, PY6 in 2014 and PY7 in 2015).

[1] All regular participants except Laclede Gas Company are signatories to the Commission-approved Stipulation and Agreement in File No. EO-2012-0142. However, in the Stipulation and Agreement, the signatories agreed that Laclede Gas Company may also participate as a stakeholder in the stakeholder group notwithstanding that it is not a signatory.

**Success Stories:**

- On August 1, 2012, the Commission approved a unanimous stipulation and agreement in File No. EO-2012-0142 approving eleven MEEIA programs for implementation beginning January 2, 2013, and a demand-side programs investment mechanism (DSIM) which allowed $80 million annual revenue requirement in Ameren Missouri's then current general rate case (Case No. ER-2012-0166) for recovery of demand-side programs' costs and recovery of estimated lost margin revenues and which will allow the Company to earn a future performance incentive award based on after-the-fact verified energy savings from the programs.
- On January 27, 2014, Ameren Missouri's Rider EEIC became effective and replaced the DSIM tracker which had been effective since January 2, 2013.
- EnerNoc issued its Demand-side Management Market Potential Study in December 2013, for use in Ameren Missouri's October 1, 2014 Chapter 22 triennial compliance filing.
- During spring 2014, Ameren Missouri implemented its AEG Vision tracking system.

**Challenges:**

- The optimum planning and implementation process for demand-side resources includes (with approximate duration periods): 1) conducting a DSM market potential study (1 year); 2) conducting Chapter 22 Electric Utility Resource Planning (1 year); 3) preparing, filing and receiving approval for a MEEIA application (8 months); 4) developing new contracts for DSM programs' services (2-4 months); and 5) delivering program services and performing/reporting EM&V (3 years). Market changes and technology changes necessitate flexibility in program designs and performance metrics/targets which are difficult to accomplish under existing Chapter 22 rules and MEEIA rules. Staff's intends to review this issue as part of its required rule review in 2015.

**Summary Comments:**

For the first MEEIA program year, from January 2, 2013 through December 31 2013, the Business Energy Efficiency Program expended $9,590,791 with 74,616 MWh of deemed annual energy savings and the Residential Energy Efficiency Program expended $18,902,216 with 262,753 MWh of deemed annual energy savings. Additional expenditures include: $2,549,452 for EM&V and $3,389,943 for Ameren Missouri portfolio administration. Program level information for 2013 is in Attachment A.

Ameren Missouri also provided $1.98 million to MO-DE for the Missouri Low-Income Weatherization Program during 2013 program year[2].

[2] The 2013 program year for the Missouri Low-Income Weatherization Program started November 1, 2012 and ended October 31, 2013.

**DSM Advisory Group Annual Report: Programs' and Portfolio Costs & Energy Savings**

**Utility: Ameren Missouri**
**Report Date: 02/28/14**
**Period: 01/02/13 - 12/31/13**
**Portfolio Start Date: 01/02/2013**

| Programs' Costs (Recorded) | 1ST QUARTER | 2ND QUARTER | 3RD QUARTER | 4TH QUARTER | 1ST YTD TOTAL |
|---|---|---|---|---|---|
| Standard | $ 239,218 | $ 664,011 | $ 416,288 | $ 1,004,313 | $ 2,323,831 |
| Custom | $ 773,729 | $ 1,374,208 | $ 1,964,948 | $ 2,468,445 | $ 6,581,331 |
| Retro-commissioning | $ 124,245 | $ 62,708 | $ 60,339 | $ 73,343 | $ 320,635 |
| New Construction | $ 93,184 | $ 108,904 | $ 42,654 | $ 120,253 | $ 364,994 |
| **Business Subtotal** | **$ 1,230,376** | **$ 2,209,831** | **$ 2,484,229** | **$ 3,666,355** | **$ 9,590,791** |
| Lighting | $ 1,138,006 | $ 1,184,551 | $ 2,284,706 | $ 2,469,950 | $ 7,077,214 |
| Energy Efficient Products | $ 201,071 | $ 146,948 | $ 404,954 | $ 640,039 | $ 1,393,012 |
| HVAC | $ 373,961 | $ 1,539,595 | $ 1,803,160 | $ 1,247,285 | $ 4,964,001 |
| Refrigerator Recycling | $ 174,274 | $ 289,879 | $ 333,465 | $ 261,165 | $ 1,058,783 |
| Home Energy Performance | $ - | $ 31,755 | $ 86,431 | $ 63,683 | $ 181,869 |
| New Homes | $ 77,521 | $ 118,906 | $ 112,550 | $ 99,472 | $ 408,449 |
| Low Income | $ 492,935 | $ 977,602 | $ 1,330,865 | $ 1,017,486 | $ 3,818,888 |
| **Residential Subtotal** | **$ 2,457,769** | **$ 4,289,235** | **$ 6,356,132** | **$ 5,799,081** | **$ 18,902,216** |
| **EM&V Subtotal** | **$ 19,120** | **$ 812,215** | **$ 618,094** | **$ 1,100,022** | **$ 2,549,452** |
| **Portfolio Subtotal** | **$ 1,409,309** | **$ 755,539** | **$ 551,143** | **$ 673,951** | **$ 3,389,943** |
| **Quarterly Total Program** | **$ 5,116,574** | **$ 8,066,821** | **$ 10,009,598** | **$ 11,239,409** | **$ 34,432,402** |
| **Cumulative Total Program** | **$ 5,116,574** | **$ 13,183,395** | **$ 23,192,993** | **$ 34,432,402** | |

| Programs' Energy Savings (MWh) | 1ST QUARTER | 2ND QUARTER | 3RD QUARTER | 4TH QUARTER | 1ST YTD TOTAL |
|---|---|---|---|---|---|
| Standard | 904 | 4,169 | 6,202 | 11,326 | 22,602 |
| Custom | 214 | 7,685 | 12,070 | 31,560 | 51,530 |
| Retro-commissioning | 0 | 0 | 316 | 0 | 316 |
| New Construction | 0 | 372 | -214 | 10 | 168 |
| **Business Subtotal** | **1,119** | **12,227** | **18,374** | **42,897** | **74,616** |
| Lighting | 24,658 | 47,771 | 58,732 | 67,575 | 198,735 |
| Energy Efficient Products | 211 | 385 | 4,810 | 16,067 | 21,473 |
| HVAC | 1,164 | 6,924 | 11,872 | 7,917 | 27,876 |
| Refrigerator Recycling | 1,024 | 1,173 | 2,161 | 1,976 | 6,334 |
| Home Energy Performance | 2 | 72 | 175 | 179 | 428 |
| New Homes | 0 | 0 | 30 | 404 | 435 |
| Low Income | 832 | 1,778 | 2,321 | 2,541 | 7,472 |
| **Residential Subtotal** | **27,890** | **58,104** | **80,101** | **96,658** | **262,753** |
| **Quarterly Total Program (MWh)** | **29,008** | **70,331** | **98,475** | **139,555** | **337,368** |
| **Cumulative Total Program (MWh)** | **29,008** | **99,339** | **197,813** | **337,368** | |

* The financial information contained within this report is confidential and may contain immaterial revisions from other company financial statements.

# Schedule JAR-4

# Is Deemed

# Highly Confidential

# In Its Entirety

**Ameren Missouri's MEEIA Cycle 1 DSM programs and DSIM**

On July 5, 2012, Ameren Missouri and the parties to Case No. EO-2012-0142 filed (or did not object to) a Unanimous Stipulation and Agreement Resolving Ameren Missouri's MEEIA Filing ("2012 Stipulation"). On August 1, 2012, the Commission issued its Order Approving Unanimous Stipulation and Agreement Resolving Ameren Missouri's MEEIA Filing, approving eleven (11) energy efficiency programs for implementation beginning January 2, 2013 and ending December 31, 2015.

The Commission's August 1, 2012 Order also approved implementation of a DSIM which allowed for recovery of $80 million annual revenue requirement in Ameren Missouri's then-current general rate case (Case No. ER-2012-0166). Of that $80 million, recovery of $50 million is for annual demand-side programs' costs and recovery of $30 million is for the annual estimated lost margin revenue due to the demand-side programs. The DSIM was designed to track and true-up with interest the actual programs' costs incurred and the actual deemed lost margin revenues estimated to be 26.34% of DSM programs' deemed annual net shared benefits. The DSIM also allows Ameren Missouri to earn a future performance incentive award based on after-the-fact verified cumulative annual energy savings and annual net shared benefits as a result of demand-side programs' EM&V by independent third party evaluators. The DSIM tracker mechanism included in the 2012 Stipulation was changed to a rider mechanism effective January 27, 2014, by Commission order in File No. EO-2014-0075. Ameren Missouri's Rider EEIC is included as Schedule JAR-3.

Included in this schedule is page 6 of Ameren Missouri's Quarterly Surveillance Monitoring Reports dated December 31, 2013 and dated December 31, 2014, for the quarter-ended, 12-months ended and cumulative 24-months ended summary performance of the MEEIA Cycle 1 DSM programs and DSIM for the period January 2, 2013 through December 31, 2014. MEEIA Cycle 1 2013 - 2014 DSM programs' spending was $75.95 million ($9.61 million or 11% less than the budget of $85.56 million), while MEEIA Cycle 1 2013 – 2014 cumulative annual deemed energy savings were 699,283 MWh (185,186 MWh or 36% greater than the planned 514,097 MWh). MEEIA Cycle 1 2013 – 2014 deemed net shared benefits are $325.92 million ($53.91 million and 20% greater than the planned $272.01 million deemed net shared benefits).

NP

**This page is Highly Confidential in its entirety.**

**This page is Highly Confidential in its entirety.**

# Summary of Actual vs. Plan for Ameren Missouri DSM Programs (1)

## Total Portfolio

| | 2010 | 2011 | 2013 | 2014 | 2015 | 2016 | 2017 | 2018 |
|---|---|---|---|---|---|---|---|---|
| | | | MEEIA Cycle 1 | | | MEEIA Cycle 2 | | |
| Programs' Costs Actual ($000) | $ 19,900 | $ 37,783 | $34,432 | $41,518 | | | | |
| Programs' Costs Plan ($000) | $ 32,123 | $ 39,670 | $36,119 | $47,121 | $64,088 | $ 36,408 | $ 48,838 | $ 62,321 |
| Variance Amount | $ (12,223) | $ (1,887) | $ (1,687) | $ (5,603) | | | | |
| Percent Variance | -38.1% | -4.8% | -4.7% | -11.9% | | | | |
| Energy Savings Actual (MWh) | 155,551 | 379,129 | 337,368 | 361,915 | | | | |
| Energy Savings Plan (MWh) | 145,350 | 160,249 | 250,792 | 263,305 | 307,723 | 104,757 | 137,617 | 183,859 |
| Variance Amount | 10,201 | 218,880 | 86,576 | 98,610 | | | | |
| Percent Variance | 7.0% | 136.6% | 34.5% | 37.5% | | | | |
| kWh per $ for Actual | 7.8 | 10.0 | 9.8 | 8.7 | | | | |
| kWh per $ for Plan | 4.5 | 4.0 | 6.9 | 5.6 | 4.8 | 2.9 | 2.8 | 3.0 |

## Residential Lighting Program

| | 2010 | 2011 | 2013 | 2014 | 2015 | 2016 | 2017 | 2018 |
|---|---|---|---|---|---|---|---|---|
| | | | MEEIA Cycle 1 | | | MEEIA Cycle 2 | | |
| Programs' Costs Actual ($000) | $ 5,399 | $ 4,963 | $ 7,077 | $ 7,871 | | | | |
| Programs' Costs Plan ($000) | $ 4,076 | $ 5,252 | $ 6,237 | $ 5,924 | $ 4,331 | $ 5,696 | $ 5,500 | $ 6,717 |
| Variance Amount | $ 1,323 | $ (289) | $ 840 | $ 1,947 | | | | |
| Percent Variance | 32.5% | -5.5% | 13.5% | 32.9% | | | | |
| Energy Savings Actual (MWh) | 72,384 | 93,702 | 198,735 | 147,749 | | | | |
| Energy Savings Plan (MWh) | 37,179 | 46,742 | 121,258 | 96,837 | 62,371 | 20,234 | 18,345 | 22,928 |
| Variance Amount | 35,205 | 46,960 | 77,477 | 50,912 | | | | |
| Percent Variance | 94.7% | 100.5% | 63.9% | 52.6% | | | | |
| kWh per $ for Actual | 13.4 | 18.9 | 28.1 | 18.8 | | | | |
| kWh per $ for Plan | 9.1 | 8.9 | 19.4 | 16.3 | 14.4 | 3.6 | 3.3 | 3.4 |

## Total Portfolio *less* Residential Lighting

| | 2010 | 2011 | 2013 | 2014 | 2015 | 2016 | 2017 | 2018 |
|---|---|---|---|---|---|---|---|---|
| | | | MEEIA Cycle 1 | | | MEEIA Cycle 2 | | |
| Programs' Costs Actual ($000) | $ 14,501 | $ 32,820 | $ 27,355 | $ 33,647 | | | | |
| Programs' Costs Plan ($000) | $ 28,047 | $ 34,418 | $ 29,882 | $ 41,196 | $ 59,757 | $ 30,712 | $ 43,338 | $ 55,604 |
| Variance Amount | $ (13,546) | $ (1,598) | $ (2,527) | $ (7,549) | | | | |
| Percent Variance | -48.3% | -4.6% | -8.5% | -18.3% | | | | |
| Energy Savings Actual (MWh) | 83,167 | 285,427 | 138,633 | 214,166 | | | | |
| Energy Savings Plan (MWh) | 108,171 | 113,507 | 129,535 | 166,468 | 245,351 | 84,523 | 119,272 | 160,931 |
| Variance Amount | -25,004 | 171,920 | 9,099 | 47,698 | | | | |
| Percent Variance | -23.1% | 151.5% | 7.0% | 28.7% | | | | |
| kWh per $ for Actual | 5.7 | 8.7 | 5.1 | 6.4 | | | | |
| kWh per $ for Plan | 3.9 | 3.3 | 4.3 | 4.0 | 4.1 | 2.8 | 2.8 | 2.9 |

### Incremental Annual Energy Savings

| | PY 1 | PY 2 | PY 3 | Total |
|---|---|---|---|---|
| Pre-MEEIA Actual vs. Plan | | 0.77 | 2.51 | 1.66 |
| Cycle 1 Actual vs. Plan | 1.07 | 1.29 | | 1.19 |
| Cycle 2 Plan vs. Cycle 1 Plan | 0.65 | 0.72 | 0.66 | 0.67 |
| Cycle 1 Actual vs. Cycle 2 Plan | 1.64 | 1.80 | | 1.73 |

**(1) Excluding PY 2012 "Bridge" Programs' actual and plan.**
**(2) 2013, 2014 and 2015 from Ameren Draft Report as of 2 12 2015**

# Summary of Actual vs. Plan for Ameren Missouri DSM Programs (1)

| C&I Custom | | | MEEIA Cycle 1 | | | MEEIA Cycle 2 | | |
|---|---|---|---|---|---|---|---|---|
| | 2009-10 | 2011 | 2013 | 2014 | 2015 | 2016 | 2017 | 2018 |
| Programs' Costs Actual ($000) | $ 8,159 | $ 10,272 | $6,581 | $7,519 | | | | |
| Programs' Costs Plan ($000) | $ 8,510 | $ 4,415 | $8,357 | $8,840 | $13,133 | $ 8,709 | $ 16,815 | $ 22,538 |
| Variance Amount | $ (351) | $ 5,857 | $ (1,776) | $ (1,321) | | | | |
| Percent Variance | -4.1% | 132.7% | -21.3% | -14.9% | | | | |
| Energy Savings Actual (MWh) | 56,642 | 129,797 | 51,530 | 80,374 | | | | |
| Energy Savings Plan (MWh) | 54,198 | 27,099 | 54,961 | 54,691 | 74,509 | 27,633 | 53,515 | 71,962 |
| Variance Amount | 2,444 | 102,698 | -3,431 | 25,682 | | | | |
| Percent Variance | 4.5% | 379.0% | -6.2% | 47.0% | | | | |
| kWh per $ for Actual | 6.9 | 12.6 | 7.8 | 10.7 | | | | |
| kWh per $ for Plan | 6.4 | 6.1 | 6.6 | 6.2 | 5.7 | 3.2 | 3.2 | 3.2 |

| C&I Standard | | | MEEIA Cycle 1 | | | MEEIA Cycle 2 | | |
|---|---|---|---|---|---|---|---|---|
| | 2009-10 | 2011 | 2013 | 2014 | 2015 | 2016 | 2017 | 2018 |
| Programs' Costs Actual ($000) | $ 3,007 | $ 2,041 | $ 2,324 | $ 3,915 | | | | |
| Programs' Costs Plan ($000) | $ 11,327 | $ 8,320 | $ 3,222 | $ 4,868 | $ 8,051 | $ 5,886 | $ 6,586 | $ 10,963 |
| Variance Amount | $ (8,320) | $ (6,279) | $ (898) | $ (953) | | | | |
| Percent Variance | -73.5% | -75.5% | -27.9% | -19.6% | | | | |
| Energy Savings Actual (MWh) | 24,515 | 20,034 | 22,602 | 38,875 | | | | |
| Energy Savings Plan (MWh) | 68,985 | 40,753 | 25,125 | 33,686 | 51,784 | 18,619 | 20,853 | 35,004 |
| Variance Amount | -44,470 | -20,719 | -2,523 | 5,189 | | | | |
| Percent Variance | -64.5% | -50.8% | -10.0% | 15.4% | | | | |
| kWh per $ for Actual | 8.2 | 9.8 | 9.7 | 9.9 | | | | |
| kWh per $ for Plan | 6.1 | 4.9 | 7.8 | 6.9 | 6.4 | 3.2 | 3.2 | 3.2 |

| C&I Portfolio | | | MEEIA Cycle 1 | | | MEEIA Cycle 2 | | |
|---|---|---|---|---|---|---|---|---|
| | 2009-10 | 2011 | 2013 | 2014 | 2015 | 2016 | 2017 | 2018 |
| Programs' Costs Actual ($000) | $ 12,361 | $ 17,982 | $ 9,591 | $ 14,776 | | | | |
| Programs' Costs Plan ($000) | $ 27,245 | $ 17,134 | $ 12,485 | $ 15,000 | $ 23,301 | $ 14,595 | $ 30,231 | $ 39,364 |
| Variance Amount | $ (14,884) | $ 848 | $ (2,894) | $ (224) | | | | |
| Percent Variance | -54.6% | 4.9% | -23.2% | -1.5% | | | | |
| Energy Savings Actual (MWh) | 87,331 | 234,535 | 74,616 | 144,510 | | | | |
| Energy Savings Plan (MWh) | 153,384 | 82,197 | 85,517 | 95,067 | 135,766 | 46,252 | 91,927 | 122,536 |
| Variance Amount | -66,053 | 152,338 | -10,901 | 49,443 | | | | |
| Percent Variance | -43.1% | 185.3% | -12.7% | 52.0% | | | | |
| kWh per $ for Actual | 7.1 | 13.0 | 7.8 | 9.8 | | | | |
| kWh per $ for Plan | 5.6 | 4.8 | 6.8 | 6.3 | 5.8 | 3.2 | 3.0 | 3.1 |

| Incremental Annual Energy Savings | | | | |
|---|---|---|---|---|
| | PY 1 | PY 2 | PY 3 | Total |
| Pre-MEEIA Actual vs. Plan | | 0.57 | 2.85 | 1.37 |
| Cycle 1 Actual vs. Plan | 0.87 | 1.52 | | 1.21 |
| Cycle 2 Plan vs. Cycle 1 Plan | 0.54 | 0.97 | 0.90 | 0.82 |
| Cycle 1 Actual vs. Cycle 2 Plan | 1.61 | 1.57 | | 1.59 |

**(1) Excluding PY 2012 "Bridge" Programs' actual and plan.**
**(2) 2013, 2014 and 2015 from Ameren Draft Report as of 2 12 2015**

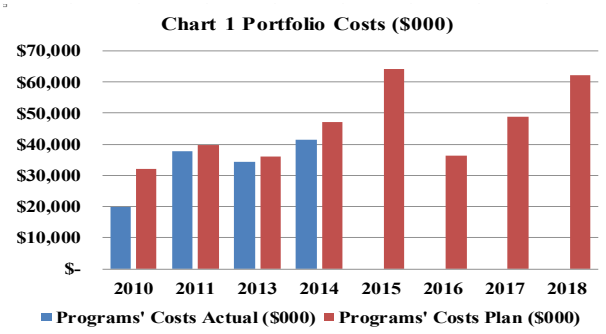


Chart 1 Portfolio Costs ($000)
$70,000
$60,000
$50,000
$40,000
$30,000
$20,000
$10,000
$-
2010 2011 2013 2014 2015 2016 2017 2018
Programs' Costs Actual ($000)
Programs' Costs Plan ($000)

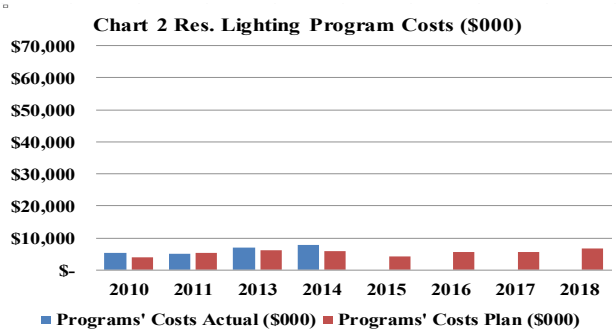


Chart 2 Res. Lighting Program Costs ($000)
$70,000
$60,000
$50,000
$40,000
$30,000
$20,000
$10,000
$-
2010 2011 2013 2014 2015 2016 2017 2018
Programs' Costs Actual ($000)
Programs' Costs Plan ($000)

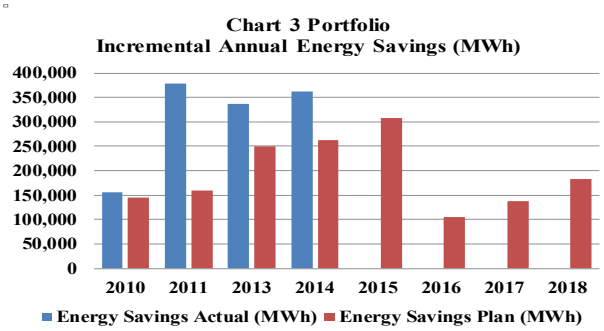


Chart 3 Portfolio
Incremental Annual Energy Savings (MWh)
400,000
350,000
300,000
250,000
200,000
150,000
100,000
50,000
0
2010 2011 2013 2014 2015 2016 2017 2018
Energy Savings Actual (MWh)
Energy Savings Plan (MWh)

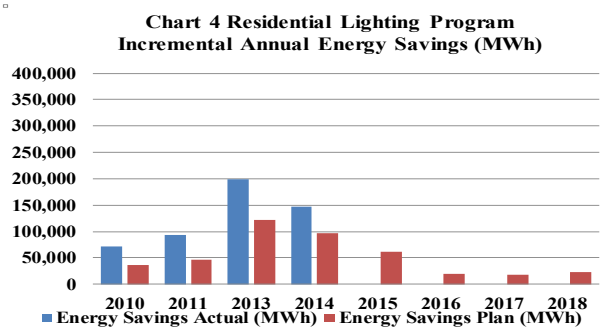


Chart 4 Residential Lighting Program
Incremental Annual Energy Savings (MWh)
400,000
350,000
300,000
250,000
200,000
150,000
100,000
50,000
0
2010 2011 2013 2014 2015 2016 2017 2018
Energy Savings Actual (MWh)
Energy Savings Plan (MWh)

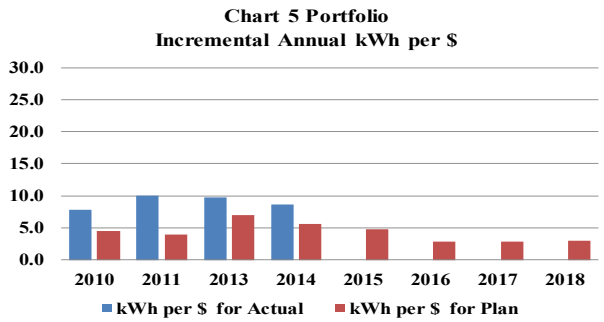


Chart 5 Portfolio
Incremental Annual kWh per $
30.0
25.0
20.0
15.0
10.0
5.0
0.0
2010 2011 2013 2014 2015 2016 2017 2018
kWh per $ for Actual
kWh per $ for Plan

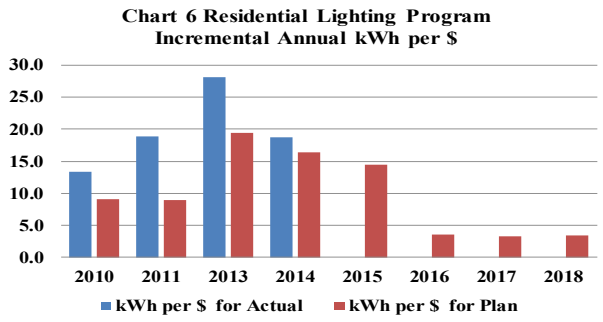


Chart 6 Residential Lighting Program
Incremental Annual kWh per $
30.0
25.0
20.0
15.0
10.0
5.0
0.0
2010 2011 2013 2014 2015 2016 2017 2018
kWh per $ for Actual
kWh per $ for Plan

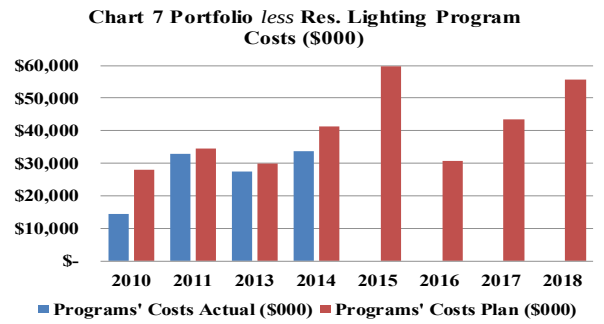


Chart 7 Portfolio less Res. Lighting Program
Costs ($000)
$60,000
$50,000
$40,000
$30,000
$20,000
$10,000
$-
2010 2011 2013 2014 2015 2016 2017 2018
Programs' Costs Actual ($000)
Programs' Costs Plan ($000)

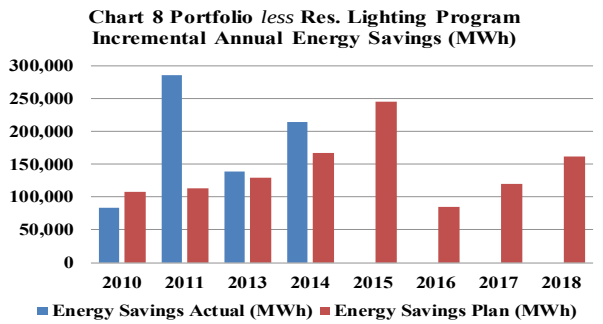


Chart 8 Portfolio less Res. Lighting Program
Incremental Annual Energy Savings (MWh)
300,000
250,000
200,000
150,000
100,000
50,000
0
2010 2011 2013 2014 2015 2016 2017 2018
Energy Savings Actual (MWh)
Energy Savings Plan (MWh)

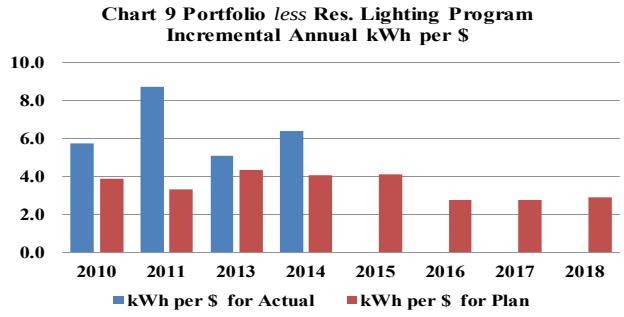


Chart 9 Portfolio less Res. Lighting Program
Incremental Annual kWh per $
10.0
8.0
6.0
4.0
2.0
0.0
2010 2011 2013 2014 2015 2016 2017 2018
kWh per $ for Actual
kWh per $ for Plan

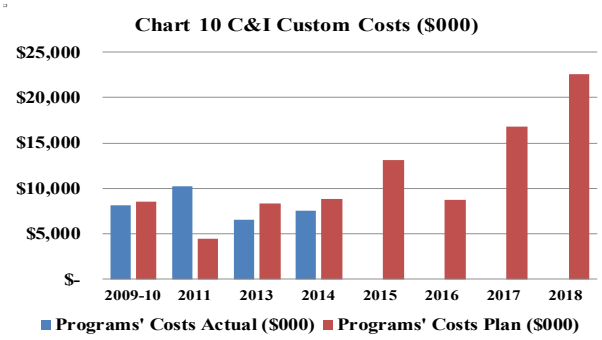


Chart 10 C&I Custom Costs ($000)
$25,000
$20,000
$15,000
$10,000
$5,000
$-
2009-10 2011 2013 2014 2015 2016 2017 2018
Programs' Costs Actual ($000)
Programs' Costs Plan ($000)

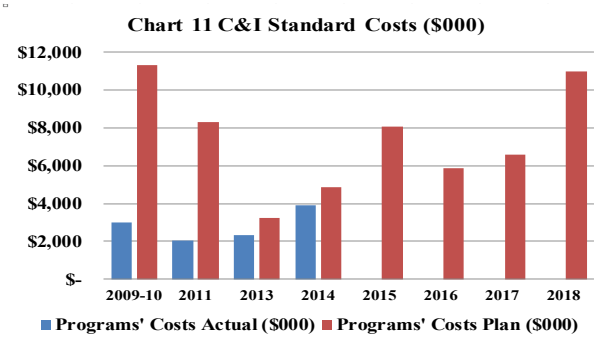


Chart 11 C&I Standard Costs ($000)
$12,000
$10,000
$8,000
$6,000
$4,000
$2,000
$-
2009-10 2011 2013 2014 2015 2016 2017 2018
Programs' Costs Actual ($000)
Programs' Costs Plan ($000)

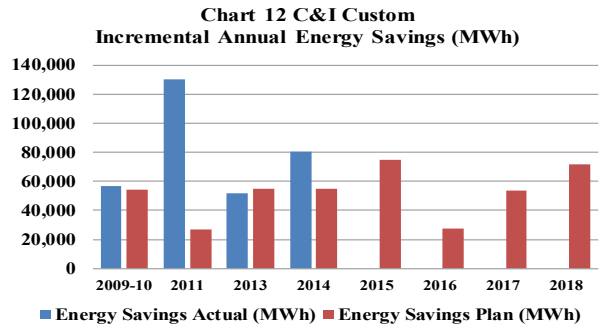


Chart 12 C&I Custom
Incremental Annual Energy Savings (MWh)
140,000
120,000
100,000
80,000
60,000
40,000
20,000
0
2009-10 2011 2013 2014 2015 2016 2017 2018
Energy Savings Actual (MWh)
Energy Savings Plan (MWh)

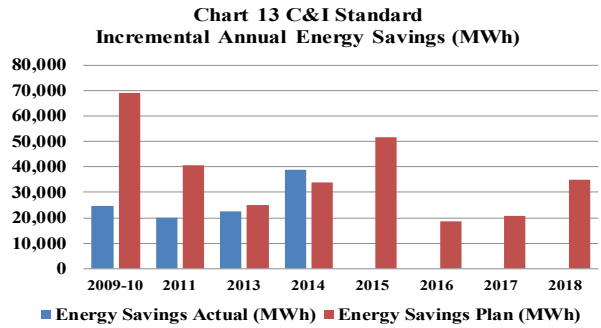


Chart 13 C&I Standard
Incremental Annual Energy Savings (MWh)
80,000
70,000
60,000
50,000
40,000
30,000
20,000
10,000
0
2009-10 2011 2013 2014 2015 2016 2017 2018
Energy Savings Actual (MWh)
Energy Savings Plan (MWh)

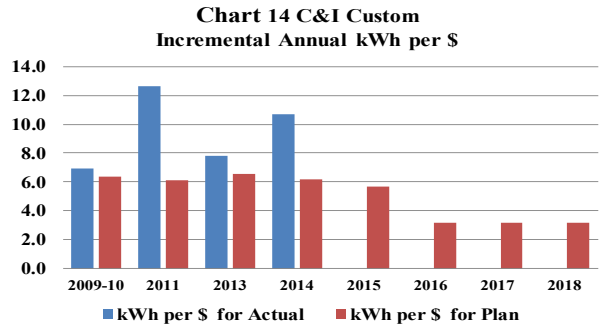


Chart 14 C&I Custom
Incremental Annual kWh per $
14.0
12.0
10.0
8.0
6.0
4.0
2.0
0.0
2009-10 2011 2013 2014 2015 2016 2017 2018
kWh per $ for Actual
kWh per $ for Plan

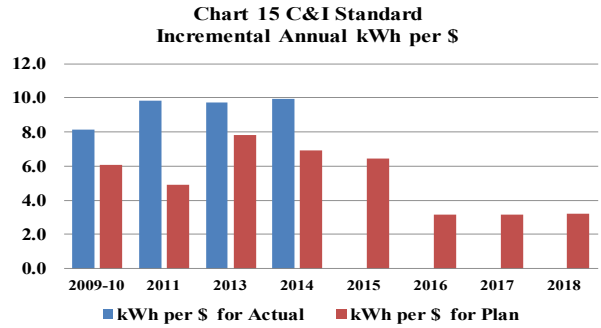


Chart 15 C&I Standard
Incremental Annual kWh per $
12.0
10.0
8.0
6.0
4.0
2.0
0.0
2009-10 2011 2013 2014 2015 2016 2017 2018
kWh per $ for Actual
kWh per $ for Plan

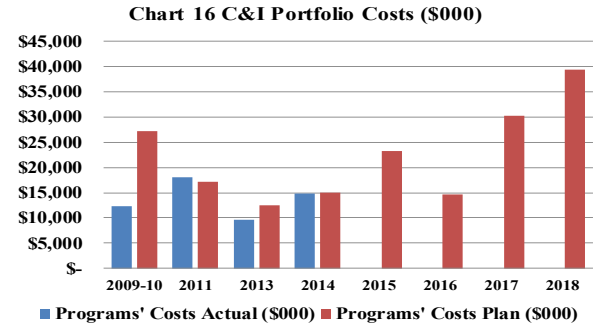


Chart 16 C&I Portfolio Costs ($000)
$45,000
$40,000
$35,000
$30,000
$25,000
$20,000
$15,000
$10,000
$5,000
$-
2009-10 2011 2013 2014 2015 2016 2017 2018
Programs' Costs Actual ($000)
Programs' Costs Plan ($000)

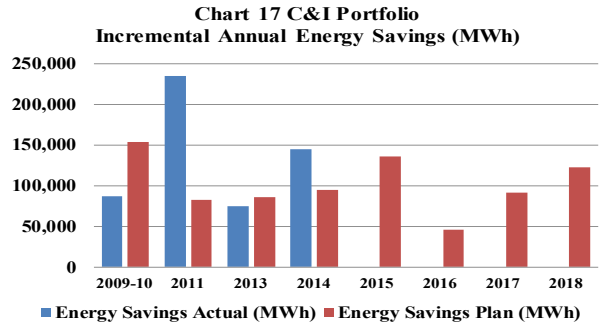


Chart 17 C&I Portfolio
Incremental Annual Energy Savings (MWh)
250,000
200,000
150,000
100,000
50,000
0
2009-10 2011 2013 2014 2015 2016 2017 2018
Energy Savings Actual (MWh)
Energy Savings Plan (MWh)

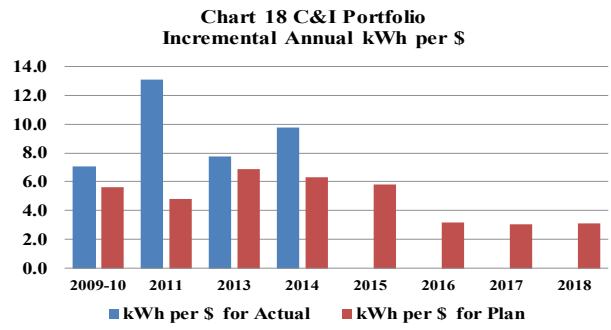
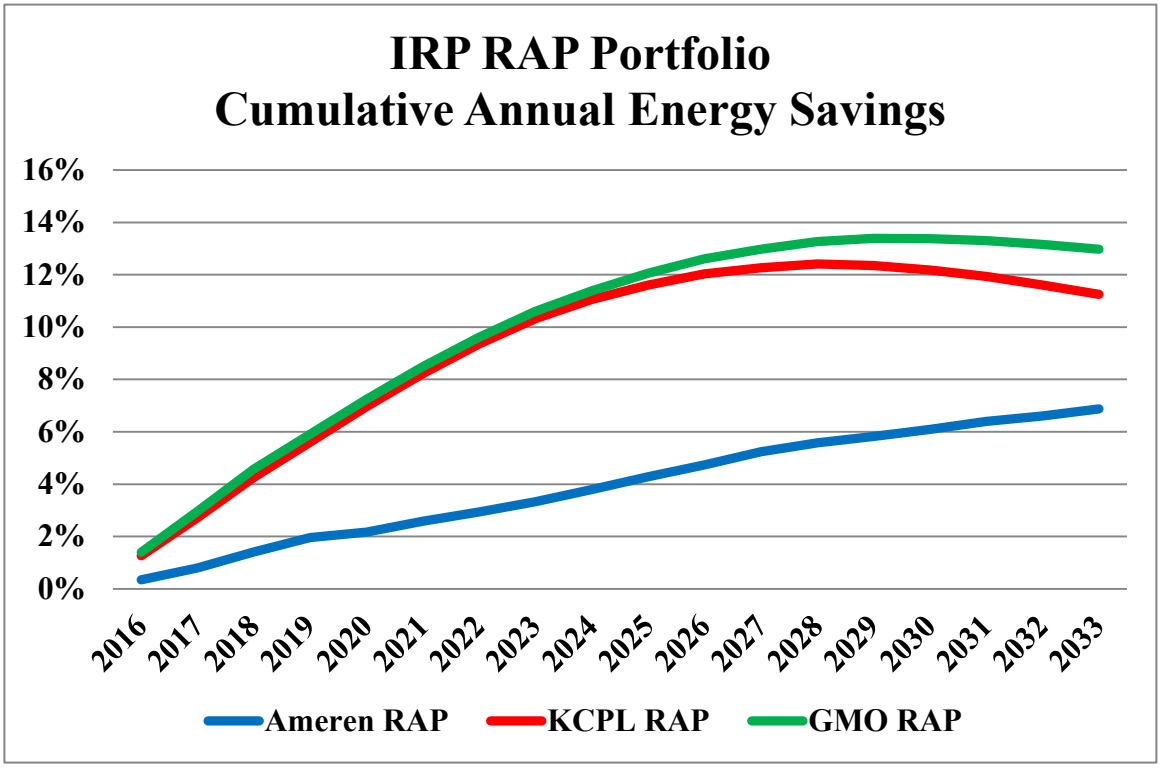
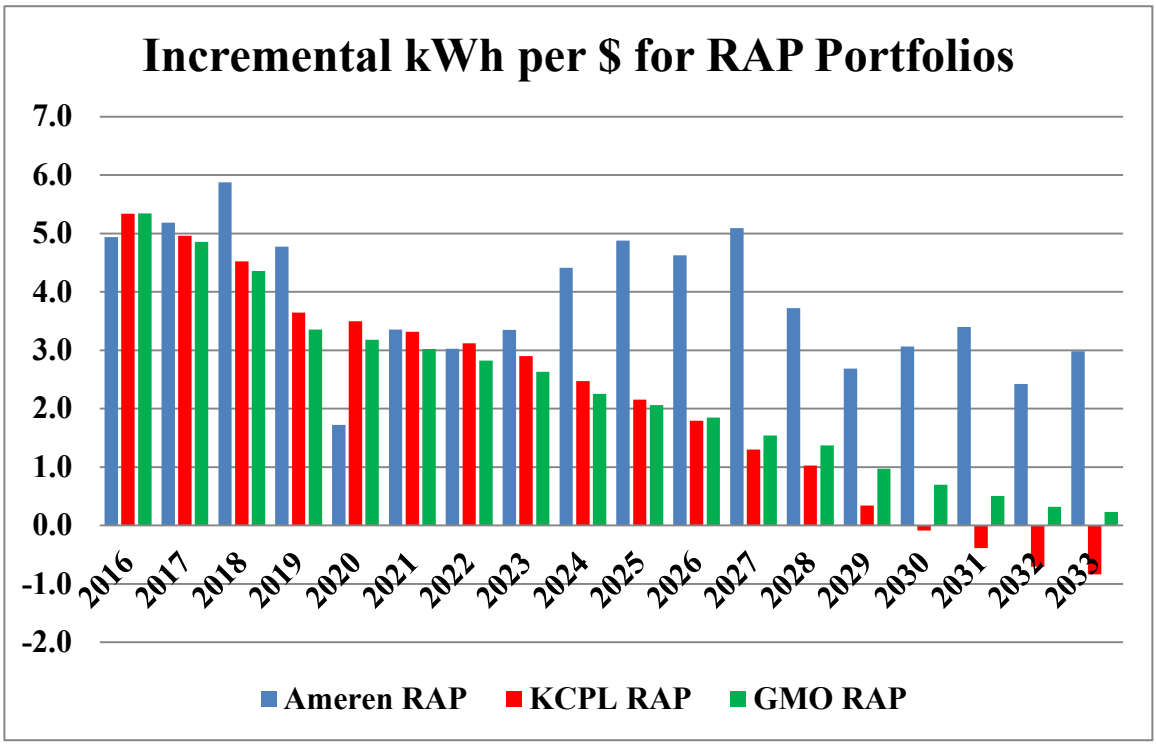


Chart 18 C&I Portfolio
Incremental Annual kWh per $
14.0
12.0
10.0
8.0
6.0
4.0
2.0
0.0
2009-10 2011 2013 2014 2015 2016 2017 2018
kWh per $ for Actual
kWh per $ for Plan


IRP RAP Portfolio
Cumulative Annual Energy Savings
16%
14%
12%
10%
8%
6%
4%
2%
0%
2016
2017
2018
2019
2020
2021
2022
2023
2024
2025
2026
2027
2028
2029
2030
2031
2032
2033
Ameren RAP
KCPL RAP
GMO RAP

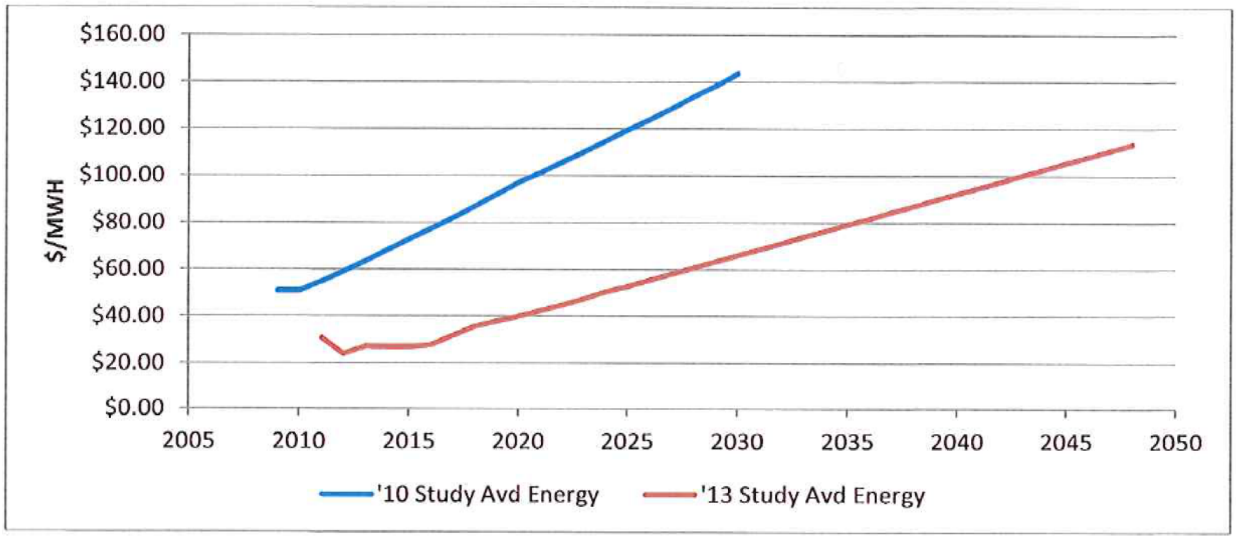

Incremental kWh per $ for RAP Portfolios
7.0
6.0
5.0
4.0
3.0
2.0
1.0
0.0
-1.0
-2.0
2016
2017
2018
2019
2020
2021
2022
2023
2024
2025
2026
2027
2028
2029
2030
2031
2032
2033
Ameren RAP
KCPL RAP
GMO RAP

One measure that was a central part of the Company's portfolio plan was impacted so severely that it is no longer cost effective. That measure is programmable thermostats. 2013 EM&V found that, while programmable thermostats can generate meaningful savings, the majority of customers that have them installed override the settings and operate their thermostat in a manual mode. Of course, that means for such customers it saves nothing since the previous thermostat operated similarly. This is one of the more extreme examples, but there were many measures with similar declines in savings that resulted from EM&V.

**Lower Avoided Costs**

The market values of energy and capacity utilized to estimate Ameren Missouri's avoided costs were reported previously in this section of the report. What is not evident from Table 2.7 is how those avoided costs compare to those utilized for the MEEIA 2013-15 programs. In short, they are markedly lower. In fact, they are close to half of the former avoided cost curves. The 2013-15 and 2016-18 avoided energy cost curves are shown in Figure 2.3 below.

**Figure 2.3: Avoided Energy Cost Comparison – 2013-15 vs. 2016-18**




The decline is impossible to miss. There are two primary causes of the energy market price decline. First, lower load growth has been observed over the last few years due to the combination of a less robust than expected recovery from the severe recession of 2007-2009 and increasing customer energy efficiency induced both by utility programs as well as codes and standards. Secondly, and even more significantly, a marked decrease in the market price of natural gas, which is frequently the fuel that fires marginal generators that establish wholesale electricity market clearing prices, has significantly depressed peak power prices. The natural gas prices used in the 2010

study were based on 2009-2010 data, which was prior to the boom in production of gas from shale formations that has caused precipitous declines in observed market prices and expectations of future gas prices. The confluence of these two factors caused the marked decrease in the avoided costs illustrated above.

The impact of lower avoided costs on energy efficiency is that the benefits of energy efficient measures have become smaller. Lower avoided costs can cause marginally cost-effective measures to become no longer cost effective, reducing potential; or can cause cost-effective measures to simply be less cost effective. Either result reduces the total benefits realized by customers. As is relevant to the discussion of the comparison of 2013-15 planned savings to the 2016-18 planned savings, the important piece is the measures which are no longer cost effective. For MEEIA 2013-15, 47 residential, 104 commercial, and 43 industrial measures, representing a total of 194 measures, passed the economic screen for cost effectiveness. With the lower avoided costs described above, MEEIA 2016-18 programs include 43 residential, 100 commercial, and 39 industrial measures, for a total of 182 measures that were screened as cost effective. That is a net loss of 12 measures, representing 6% of the number that were previously cost effective.

An additional note, the 182 measures that are cost effective for MEEIA 2016-18 are less cost effective than they were in MEEIA 2013-2015. This is the majority of the reason that the cost effectiveness tests for MEEIA 2016-18 are roughly half of MEEIA 2013-15. The 2016-18 TRC of 1.53 compares to the 2013-15 TRC metric of 2.07. This will have significant ramifications on the levels of shared net benefits calculated for purposes of the DSIM in Chapter 3 of this report.

In summary, the savings Ameren Missouri is targeting for the 2016-18 program years is significantly less than its MEEIA 2013-15 plan at a similar budget. That should not in any way be viewed as a reduction in Ameren Missouri's commitment and effort toward delivering all cost-effective energy efficiency to its customers. It is in fact an outcome of circumstances outside of the Company's control. With approval of the MEEIA 2016-2018 plan, Ameren Missouri will continue to vigorously pursue cost-effective opportunities to generate savings for its customers as they are possible within the environment in which it is delivering programs.

*Ameren Missouri Expert/Witness: Richard A. Voytas*

**Highly Confidential**

**Plan K: CC - Balanced - MEEIA Cycle 1 Only- Sioux Retire 12/31/2033 - Meramec Retire 12/31/2022**

| | | 2015 | 2016 | 2017 | 2018 | 2019 | 2020 | 2021 | 2022 | 2023 | 2024 | 2025 | 2026 | 2027 | 2028 | 2029 | 2030 | 2031 | 2032 | 2033 | 2034 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | Existing Capacity Position | [redacted] | | | | | | | | | | | | | | | | | | | |
| + | Total plant upgrades | | | | | | | | | | | | | | | | | | | | |
| + | Meramec retirement | | | | | | | | | | | | | | | | | | | | |
| + | Sioux retirement | | | | | | | | | | | | | | | | | | | | |
| + | CTG Retirements | | | | | | | | | | | | | | | | | | | | |
| + | Renewables | | | | | | | | | | | | | | | | | | | | |
| - | Energy Efficiency | | | | | | | | | | | | | | | | | | | | |
| - | Demand Response | | | | | | | | | | | | | | | | | | | | |
| + | New Primary Supply Side (CC) | | | | | | | | | | | | | | | | | | | | |
| + | New Secondary Supply Side (CC) | | | | | | | | | | | | | | | | | | | | |
| = | Capacity position after adjustment | | | | | | | | | | | | | | | | | | | | |
| | Purchases (+) or sales (-) | | | | | | | | | | | | | | | | | | | | |

**Plan I: CC - Balanced - RAP - Sioux Retire 12/31/2033 - Meramec Retire 12/31/2022**

| | | 2015 | 2016 | 2017 | 2018 | 2019 | 2020 | 2021 | 2022 | 2023 | 2024 | 2025 | 2026 | 2027 | 2028 | 2029 | 2030 | 2031 | 2032 | 2033 | 2034 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | Existing Capacity Position | [redacted] | | | | | | | | | | | | | | | | | | | |
| + | Total plant upgrades | | | | | | | | | | | | | | | | | | | | |
| + | Meramec retirement | | | | | | | | | | | | | | | | | | | | |
| + | Sioux retirement | | | | | | | | | | | | | | | | | | | | |
| + | CTG Retirements | | | | | | | | | | | | | | | | | | | | |
| + | Renewables | | | | | | | | | | | | | | | | | | | | |
| - | Energy Efficiency | | | | | | | | | | | | | | | | | | | | |
| - | Demand Response | | | | | | | | | | | | | | | | | | | | |
| + | New Primary Supply Side (Nuke) | | | | | | | | | | | | | | | | | | | | |
| + | New Secondary Supply Side (CC) | | | | | | | | | | | | | | | | | | | | |
| = | Capacity position after adjustment | | | | | | | | | | | | | | | | | | | | |
| | Purchases (+) or sales (-) | | | | | | | | | | | | | | | | | | | | |

**Plan R: CC - Balanced - MAP - Sioux Retire 12/31/2033 - Meramec Retire 12/31/2022**

| | | 2015 | 2016 | 2017 | 2018 | 2019 | 2020 | 2021 | 2022 | 2023 | 2024 | 2025 | 2026 | 2027 | 2028 | 2029 | 2030 | 2031 | 2032 | 2033 | 2034 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | Existing Capacity Position | [redacted] | | | | | | | | | | | | | | | | | | | |
| + | Total plant upgrades | | | | | | | | | | | | | | | | | | | | |
| + | Meramec retirement | | | | | | | | | | | | | | | | | | | | |
| + | Sioux retirement | | | | | | | | | | | | | | | | | | | | |
| + | CTG Retirements | | | | | | | | | | | | | | | | | | | | |
| + | Renewables | | | | | | | | | | | | | | | | | | | | |
| - | Energy Efficiency | | | | | | | | | | | | | | | | | | | | |
| - | Demand Response | | | | | | | | | | | | | | | | | | | | |
| + | New Primary Supply Side (CC) | | | | | | | | | | | | | | | | | | | | |
| + | New Secondary Supply Side | | | | | | | | | | | | | | | | | | | | |
| = | Capacity position after adjustment | | | | | | | | | | | | | | | | | | | | |
| | Purchases (+) or sales (-) | | | | | | | | | | | | | | | | | | | | |

NP

Schedule JAR-8