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MISSOURI PUBLIC SERVICE COMMISSION

File No. EO-2012-0142

(MEEIA Cycle 1 Performance Incentive)

REBUTTAL TESTIMONY

OF

WILLIAM R. DAVIS

ON

BEHALF OF

UNION ELECTRIC COMPANY
d/b/a Ameren Missouri

St. Louis, Missouri
October 2016

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DIRECT TESTIMONY

OF

WILLIAM R. DAVIS

FILE NO. EO-2012-0142

I. INTRODUCTION

Q. Please state your name and business address.

A. My name is William ("Bill") R. Davis. My business address is One Ameren Plaza, 1901 Chouteau Avenue, St. Louis, Missouri 63103.

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

A. I am the Director of Energy Efficiency and Renewables for Union Electric Company, d/b/a Ameren Missouri ("Ameren Missouri" or "Company").

Q. Are you the same Bill Davis who filed direct testimony in this case on October 4, 2016?

A. Yes, I am.

II. PURPOSE AND SUMMARY OF TESTIMONY

Q. What is the purpose of your rebuttal testimony in this proceeding?

A. The purpose of my testimony is to respond to the position taken by the Office of the Public Counsel ("OPC") in this case, which is reflected in the direct testimony of its witness Geoff Marke. In addition, I will also briefly address the rebuttal testimony of the Commission's Staff, sponsored by John Rogers, regarding the *Non-Unanimous Stipulation and Agreement Addressing Ameren Missouri's Performance Incentive Award* filed on September 2, 2016.

Q. Please summarize your testimony.

A. Certainly. What OPC is doing in this case is asking the Commission to disregard the MEEIA Cycle 1 Plan it approved, and to violate its own rules, in order to artificially reduce Ameren Missouri's performance incentive. What is particularly disappointing is that OPC makes this request after having *agreed to* the terms that govern the performance incentive. The 2012 and 2015 Stipulations[1] specifically included terms that provided for calculation of the performance incentive in the manner agreed upon by the Company and the Staff in the 2016 Stipulation filed in this docket a few weeks ago.[2] Not only is OPC's position in direct conflict with its prior agreements and the Commission's rules, but OPC's position is fundamentally unfair. In effect, OPC asks this Commission to change the rules after the Cycle 1 programs have been completed.

In order to correct any misconceptions OPC may have created in this proceeding, this testimony will:

1. Outline and explain the terms of the MEEIA Cycle 1 Plan that require use of the utility cost test to determine net benefits;
2. Outline and explain the Commission's MEEIA rules that require use of the utility cost test to determine net benefits;
3. Outline and explain the Company's energy efficiency cost recovery rider that requires the use of the utility cost test to determine net benefits;
4. Establish that workpapers underlying the 2012 Stipulation confirm that the MEEIA Cycle 1 Plan dictates the use of the utility cost test;

[1] I am using the phrases "2012 Stipulation" and "2015 Stipulation" in the same manner in which I used those phrases in my direct testimony.
[2] I am also using the phrase "2016 Stipulation" in the same manner in which I used the phrase in my direct testimony.

5. Demonstrate that OPC's current position regarding use of the utility cost test reflects a change from its past position;
6. Show that OPC is ignoring and acting contrary to the terms of the 2012 and 2015 Stipulations, to which it agreed; and
7. Address other miscellaneous points made by OPC witness Geoff Marke.

III. THE PERFORMANCE INCENTIVE

Q. What is the primary issue in this proceeding?

A. The overall question is what performance incentive has Ameren Missouri earned from the successful operation of its MEEIA Cycle 1 energy efficiency programs. The answer to that question must be found in the Commission-approved MEEIA Cycle 1 Plan, the terms of which are set forth in the MEEIA Report, as it may have been modified by the 2012 Stipulation, all as discussed in my direct testimony.[3] Included in the MEEIA Cycle 1 Plan is an approved demand-side investment mechanism ("DSIM"), which includes a utility incentive (performance incentive) component, as discussed further below.

The more specific question for decision at this time deals with the calculation of the net benefits of the MEEIA Cycle 1 programs, which is a calculation that must be performed in order to determine the performance incentive. This is because under the approved MEEIA Cycle 1 Plan, the performance incentive award is a percentage of the net benefits. Notably, only OPC disputes the calculation of those net benefits as the

[3] As also discussed in my direct testimony, the MEEIA Cycle 1 Plan's terms are set by the MEEIA Report, as modified by the 2012 Stipulation (and by one additional modification involving net-to-gross ("NTG") ratios as provided for by the 2015 Stipulation). As used herein, the "MEEIA Cycle 1 Plan" or the "Plan" has the same definition as does the term "Plan" in the 2012 Stipulation (except for the one additional modification in the 2015 Stipulation), and the "MEEIA Report" referred to herein is the same as the "MEEIA Report" that is also defined in the 2012 Stipulation.

Company and the Staff have agreed on the net benefits and resulting performance incentive that is due. That agreement is reflected in the 2016 Stipulation.

Q. Earlier you indicated that the utility cost test ("UCT") must be used to determine the net benefits and that OPC disagrees. What is OPC's position?

A. OPC argues that the total resource cost test ("TRC") should be used instead.

Q. Why does use of one cost-effetiveness test versus the other matter when determining net benefits?

A. The UCT accounts for the *utility's* costs of operating the energy efficiency programs, while the TRC accounts for both the utility's costs *and* the customers' costs of participating in the programs. For example, if a rebate of $500 is paid to a customer to replace the customer's old, inefficient air conditioner with an efficient air conditioner, and if the customer paid an extra $2,000 for a new unit, the customer incurs a net incremental cost of $1,500. The TRC counts, as a participant cost, that extra $1,500 for a more efficient unit, and counts, as a utility cost, the $500 rebate. The UCT only counts the $500 utility cost (plus other program administration costs). Because the TRC captures both utility and participant costs, the costs captured in the TRC will always be higher than those captured in the UCT. Since net benefits are gross benefits less costs, if the TRC is used the costs subtracted from gross benefits will be greater, resulting in less net benefits. Simple math then tells us that the performance incentive will be smaller if the net benefits are lower since the performance incentive is expressed as a percentage of net benefits.

Q. Please elaborate on the performance incentive at issue in this proceeding.

A. After the MEEIA statute was passed by the legislature, the Commission adopted extensive rules that govern MEEIA programs. Included in those rules is a specific definition of a DSIM and also a specific definition of one of the components of a DSIM - the "utility incentive component," which I referred to above. Those definitions are found at 4 CSR 240-20.093(1)(M) and (EE), respectively. The utility incentive component and the performance incentive are the same thing and are used synomously in my testimony. A DSIM is essentially the mechanism that allows the utility to recover program costs (which are also defined by the MEEIA rules and the MEEIA Cycle 1 Plan), lost revenues (throughput disincentive) and an incentive based on performance of the programs; i.e., the performance incentive. Only that last piece is at issue here.

Q. Is the utility incentive component (performance incentive) of the DSIM set or "fixed" for the entire term of a MEEIA program cycle?

A. Yes. 4 CSR 240-20.093(2)(J) provides that once the Commission has approved a utility incentive component, as it did when it approved the 2012 Stipulation, it is "binding on the commission for the entire term of the DSIM, [and is also] binding on the electric utility for the entire term of the DSIM . . .."

IV. EVIDENCE THAT REFUTES OPC'S POSITION

A. <u>The MEEIA Report and the 2012 Stipulation</u>

Q. Please outline the terms of the approved MEEIA Cycle 1 Plan, including the approved utility incentive component of the DSIM, that dictate use of the UCT to determine net benefits.

A. As indicated in my direct testimony, the terms of the DSIM are set forth in the MEEIA Report, modified only by the 2012 Stipulation.[4] There are several places in the MEEIA Report that clearly define the calculation of the utility incentive component of the DSIM (i.e., the performance incentive).

First, page 25 of the MEEIA Report (in the Demand-Side Investment Mechanism section and, more specifically, in a sub-section titled "Shared Net Benefits") is very clear: "For sharing purposes the net benefits *are based on the utility cost perspective*, which is consistent with the MEEIA rules and synonymous with the UCT equation" (emphasis added). The Report continues:

> For sharing purposes the net benefits are based on the utility cost perspective, which is consistent with the MEEIA rules and synonymous with the UCT equation. In addition, this perspective sends the economic signal to minimize both administrative costs and customer rebates. Figure 2.4 shows the calculation of Net Benefits used as the amount to be shared, which is based on the present value of the lifetime effects of the proposed three-year plan. Again, these figures are consistent with the UCT analysis which is described in Chapter 3 of this report.

Figure 2.4 Net Benefits Calculation

Avoided Energy Costs	$370.3M
Avoided Capacity Costs	$91.2M
Avoided T&D Costs	$37.1M
Total Avoided Costs	**$498.6M**
Utility Program Costs	**$134.3M**
Net Benefits	**$364.3M**

These provisions of the MEEIA Report, which themselves set the terms of the approved Plan, leave no doubt: the UCT must be used.

[4] Davis Direct, p. 4, l. 13 to p. 5, l. 16 (plus the one additional modification made in the 2015 Stipulation, to which I referred earlier).

Page 26, of the MEEIA Report outlines in more detail the calculation of the sharing percent:[5]

> The overall Performance Mechanism must both offset the financial disincentive and provide equivalent earning opportunities to supply-side alternatives. In doing so, this combination must be translated into a portion of net benefits. The present value of the negative net income impact is $56 million, which represents the financial throughput disincentive associated with implementing energy efficiency. The present value of three years of $10 million annual incentive results in an after-tax net income effect of $17 million.
>
> Still, the Performance Mechanism needs to be expressed in terms of a share of net benefits. The sum of the net income impacts of both the incentive and throughput disincentive is $73 million. Dividing this amount by the net benefit, $364 million, results in a target sharing percentage of 20.2% at the 100% performance level. Translating the sliding performance incentive into a sharing percentage incorporates the fact that the net benefits are higher or lower at different performance levels and it assumes those are reached at the same cost per MWh saved as the initial plan. Figure 2.6 shows the final Performance Mechanism sharing scale.

Q. Did the 2012 Stipulation, or anything else, change the net benefits calculation as compared to the calculation required by the MEEIA Report?

A. No. The 2012 Stipulation made only two basic changes to the performance incentive.[6] The first change was the dollar value of the performance incentive used to determine the sharing percentages, and the second change was to subject the performance incentive to retrospective evaluation, measurement and verification ("EM&V"). Those two changes had no impact on the mechanics of the utility incentive component of the DSIM itself, and more specifically, did not disturb the MEEIA Report's prescription for how the net benefits must be calculated.

[5] In the MEEIA Report, the sharing percentages were calculated excluding the effects of income tax and revenue requirement calculations would then later be grossed up for income taxes. This was later modified in the 2012 Stipulation and was clearly documented in the MEEIA Report (see page 33) and also documented in the 2012 Stipulation.

[6] The 2012 Stipulation also slightly changed the cost allocation of the performance incentive to the various customer classes.

Q. How do we know the performance incentive calculations reflected in the 2012 Stipulation used net benefits calculated using the UCT?

A. We know this because the MEEIA Report, together with the 2012 Stipulation, reflect the use of net benefits calculated using the UCT.

Q. Please explain.

A. To begin, I will discuss Appendix B to the 2012 Stipulation, which provides details of the performance incentive. The first page of Appendix B includes the table below:

Percent of % MWh Target	3-Year Total ($MM)	Percent of Net Benefits*
<70	$0.00	0.00%
70	$12.00	4.60%
80	$14.25	4.78%
90	$16.50	4.92%
100	$18.75	5.03%
110	$22.50	5.49%
120	$26.25	5.87%
130	$30.00	6.19%
>130		6.19%

*Includes income taxes (i.e. results in revenue requirement without adding income taxes). Dollar figures shown in the above-table are for initial design purposes only. The performance incentive awarded will be based upon percent of net benefits. The percentages are interpolated linearly between the performance levels.

This table shows the agreed-upon dollar performance awards (in nominal dollars), as well as the corresponding share of net benefits. It indicates that the performance award is $18.75 million if the Company achieves exactly 100% of its megawatt-hour (“MWh”) target, with the corresponding share of net benefits at that level being equal to 5.03%.

The next page of Appendix B contains an example that builds on the table above, which I have reproduced below. This example shows that the net benefits to be shared at 100% of target performance level are approximately $361 million ($360.78 million). We know this table corresponds to performance at 100% of target because the table from the first page of Appendix B tells us that the share of net benefits at 100% of target is 5.03%, and the 5.03% figure appears in the second row of the example. As the example shows, a 5.03% share of $361 million of net benefits equals $18.14 million, but that figure (as indicated by the "(PV)" next to it) is the present value of the nominal amount of $18.75 million, which appears both in the table above and at the bottom of the example ($9.375 million + $9.375 million). This is the same $18.75 million found in the table on the first page of Appendix B.

Example No. 1 - Performance Incentive Calculation (millions of dollars)

Net Benefit (PV)	$360.78			
Sharing Percent	5.03%			
Initial Sharing Amount (PV)	$18.14			
Class	RES	BUS	Low Inc.	
MWh (3-Year Cum.)	491,803	287,633	13,666	
MWh Allocation	62.0%	36.3%	1.7%	
Before-Tax Rev. Req. (PV)	$11.25	$6.58	$0.31	
Revenue Requirement* (2-Year Annuity)	$5.81	$3.40	$0.16	= $9.375†

*Excludes rate base treatment as specified in the stipulation
†This amount will be revovered over 2 years (i.e. $9.375 + $9.375 = $18.75)

Q. How do we know the net benefits figures in the example from page 2 of Appendix B were determined using the UCT?

A. Recall that page 25 of the MEEIA Report, portions of which I reproduced at page 6 of this testimony, calculated a net benefit $364.3 million, or $3.5 million more than the $360.78 million used in the example found on page 2 of Appendix B (which, as I just noted, corresponds to the 100% of target performance level). Recall also that page 25 of the MEEIA Report makes clear that the $364.3 million of net benefits were determined using the UCT.

Again, just as is true of the MEEIA Report's provisions, these provisions of the 2012 Stipulation leave no doubt about the fact that the UCT must be used.

Q. If that's true, why does the example in Appendix B show $360.8 million of net benefits while the MEEIA Report showed $364.3 million of net benefits?

A. There are two reasons why there is a $3.5 million difference between the two net benefit figures.

First, in response to Staff's rebuttal testimony regarding the original MEEIA 1 proposal,[7] the Stipulation removes about $1.6 million of natural gas benefits that the Company had previously included as benefits from the proposed MEEIA programs. This lowered the $364.3 million to $362.7 million.

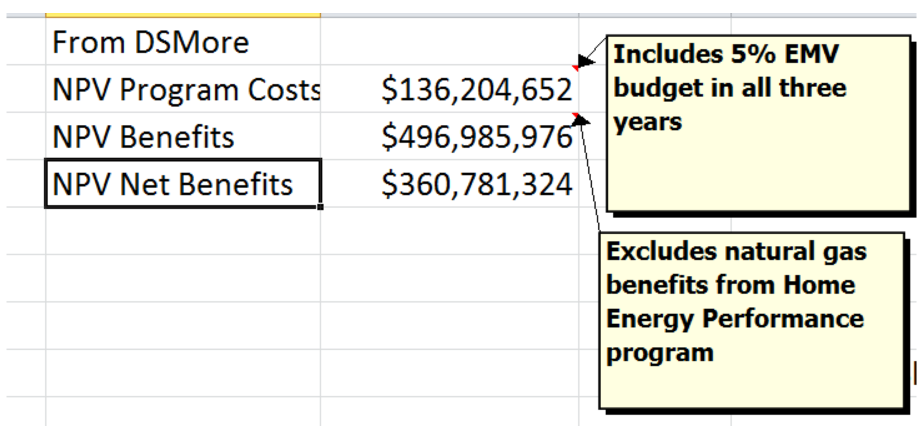
Second, the Company's program costs used in the calculations in the MEEIA Report (which were used to calculate the original $364.3 million net benefit figure) had assumed an EM&V budget of 3% of program costs for 2013 and 2014. This is because Ameren Missouri initially proposed that EM&V *not* be applied retrospectively to the performance incentive. However, the Company compromised on this point for the purposes of the 2012 Stipulation, agreeing that full retrospective EM&V shall be applied to the performance incentive. This concession required an increase in the EM&V budget to 5% in 2013 and 2014, or an additional $1.9 million. This reduced the original $364.3 million further to $360.8 million.

[7] File No. EO-2014-0142, Rebuttal of Hojong Kang, page 12 lines 20-21 and page 13 lines 1-10

Those two changes together ($364.3M – $1.6M - $1.9M = $360.8M) explain the $3.5 million reduction in net benefits between the MEEIA Report ($364.3) and Appendix B to the the 2012 Stipulation ($360.8).

My workpapers that underlie the figures in the 2012 Stipulation, including the net benefit figures I just addressed (and which were provided to all of the 2012 Stipulation signatories before it was finalized, including to OPC), confirm that the UCT is the basis for the net benefits in the performance incentive. Those workpapers also verify the net benefit changes between the MEEIA Report and Appendix B were driven solely by these two items, and unequivocally show that both net benefit figures were determined using the UCT. The below screenshot is from those workpapers – please note the cell comments in the workpaper:

<u>Figure 1 – Screenshot from 2012 Workpapers</u>



From DSMore	
NPV Program Costs	$136,204,652
NPV Benefits	$496,985,976
NPV Net Benefits	$360,781,324

Includes 5% EMV budget in all three years

Excludes natural gas benefits from Home Energy Performance program

Q. Again, how can we be sure that the net benefits being used are based on the UCT?

A. Table 1.3 on page 11 of the MEEIA Report (reproduced below) shows the $364 million of net benefits discussed above.[8] It starts with gross benefits (which are $499 million whether using the UCT or TRC) and subtracts the costs that must be subtracted to determine net benefits. Two costs are subtracted to calculate net benefits using the UCT – program administration costs and customer rebate costs (totaling $134 million), resulting in the $364 million of net benefits. To determine net benefits using the TRC, additional costs must be subtracted; i.e., the net participant costs of $106 million. However, as already established, the net benefits corresponding to the performance incentive levels in the 2012 Stipulation ($360.8 million at 100% of target) are net benefits determined *using the UCT*, which means they do *not* include any participant costs.

Figure 2 – Summary Table from MEEIA Report

Table 1.3 Portfolio Summary – Cost-Effectiveness Analysis ($MM)

	Total		Residential		Business	
	UCT	TRC	UCT	TRC	UCT	TRC
Avoided Cost Benefits	**$499**	**$499**	**$307**	**$307**	**$192**	**$192**
Program Admin. Cost	$79	$79	$45	$45	$34	$34
Customer Rebates	$55	$55	$31	$31	$24	$24
Net Participant Cost		$106		$60		$46
Total Cost	**$134**	**$241**	**$77**	**$137**	**$58**	**$104**
Net Benefits	**$364**	**$258**	**$230**	**$170**	**$134**	**$88**
Benefit/Cost Ratio	**3.71**	**2.07**	**4.00**	**2.24**	**3.33**	**1.85**

Q. Do the $134 million[9] of program administration costs and rebate costs in the table above correspond to the $49,108,352 of program costs specified in the 2012 Stipulation?

[8] The actual figure is $364.3 million – it was rounded in this table to $364 million.
[9] The $134 million is the net present value in 2013 dollars

A. Yes, and as the next table below shows, the $49,108,352 is actually the average needed to fully collect the total *nominal* program costs of $147 million. The present value of the nominal program costs of $147 million is $136.2 million and if we remove the $1.9 million associated with the previously discussed increase in EM&V costs, then we can reconcile back to the original reported present value of $134.2 million of program costs.

Table 1 – Program Cost Comparison

	MEEIA Report	2012 Stipulation Workpapers[10]
2013	$35,239,613	$36,116,713
2014	$45,965,915	$47,120,659
2015	$64,087,685	$64,087,685
Present Value	**$134,247,848**	**$136,204,652**
Sum	$145,239,213	$147,325,056
Average	$48,431,071	**$49,108,352**

These figures, like my workpapers, unequivocally show that the UCT must be used.

Q. How does the 2012 Stipulation define program costs?

A. Paragraph 5.a of the 2012 Stipulation provides that program costs were initially to be included in the Company's base rates ($49,108,352) (later program costs were recovered through Rider EEIC, as discussed below). Footnote 2 in paragraph 5.a of the 2012 Stipulation, which I have reproduced below, specifically defines "program costs" to include both "incentive payments" and "end-use measures." As I discuss later in my testimony, "incentive payments" and "end-use measures" are *utility* costs of administering its energy efficiency programs.

[10] See Schedule WRD-R1.

2012 Stipulation Definition of Program Costs

[2] MEEIA Programs' costs include expenditures on items such 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.

Q. Would the program costs in the approved MEEIA Cycle 1 Plan be $49,108,352 if they included participant costs, as OPC argues they should?

A. No, the program costs would have been much higher. If the description of program costs embedded in the rules' definition of "annual net shared benefits (4 CSR 240-3.163(1)(A)) included these participant costs, as OPC contends,[11] the $49,108,352 annual average value would have to be far higher to account for the non-utility participant costs of $106 million.[12] In fact, I calculated how high it would have to be, which is about $88 million. The fact that the approved Plan includes the $49,108,352 figure, which includes no participant costs whatsoever, shows that OPC's claim that "program costs" include *participant* costs is plainly incorrect.

Q. You noted that OPC claims the terms "incentives" and "end-use measures" in the description of program costs embedded in the definition of net shared benefits in the MEEIA rules would include participant costs. But you also just showed that the 2012 Stipulation signatories, including OPC, obviously did not include such participant costs in program costs. So what makes up those program costs?

[11] Marke Direct, p. 13.
[12] MEEIA Report, Table 1.3.

A. As already explained, the program costs subtracted from the gross benefits totaled (originally) $134 million, and consisted solely of the Company's costs, i.e., program administration costs and rebates the Company paid to participants.[13]

Q. So what does the term "incentives" mean when it is used in the program costs portion of the MEEIA rules' net shared benefits definition?

A. The term "incentives" contained in the definition refer to the rebate payments a utility pays to customers to give the customers an *incentive* to deploy the energy efficiency measure, e.g., $500 to install a more efficient air conditioning unit. This is consistent with the understanding of the term "incentives" as used in the industry, which is often used interchangeably with the term "rebates" or other means to encourage usage reductions.

In fact, the definition included in the Company's energy efficiency programs explicitly use the term "incentive" in the way I am describing:

> Incentive - Any consideration provided by the Company, through the Program Administrator and Program Partners, including buydowns, markdowns, rebates, bill credits, payments to third parties, direct installation, giveaways, and education, which encourages the adoption of Measures.[14]

Put another way, "incentives" and "rebates" in this context refer to the financial benefit a *participant receives* from participating in an energy efficiency program. Clearly these participant incentives are a cost to the utility of administering the program. Later in my testimony I will respond to Dr. Marke's contention that "incentives" means the performance incentive paid to the utility.

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[13] The final program costs were higher by approximately $1.9 million for the additional EM&V costs, addressed earlier.

[14] See, e.g., Appendix C to the 2012 Stipulation, which consists of the program tariffs approved as part of the Plan, e.g., 5th Revised Sheet No. 225, where this definition of "incentive" appears.

Q. Dr. Marke also highlights the term "end-use measures." To what does “end-use measures" refer?

A. In the context of the Commission's MEEIA rules that Dr. Marke cites,[15] the “end-use measures” included in program costs are the cost of energy efficiency measures *paid for by the utility*. For example, the Company has certain programs where it buys end-use measures, such as Energy Efficiency School Kits, and gives those end-use measures to customers free of cost. The Energy Efficiency School Kits program provides a package of end-use measures (e.g., light bulbs, a low flow sink aerator, etc.) to local students so they can be installed in their homes. Again, it is clear that the costs of these kits, which include the cost of end-use measures, are a cost *to the utility* of operating the program; i.e, a program cost.

OPC argues that "end-use measures" include energy efficiency measures paid for by the participant. For example, in the air conditioning example I used earlier, OPC would consider the $1,500 net cost paid by the program participant, after rebate, an end-use measure cost. But for “end-use measures” to include those *participant* costs, the term “program costs” would have to mean something totally different than that term means in the approved MEEIA Cycle 1 Plan which, as I have already demonstrated, plainly includes only *utility* costs. As I discuss later in this testimony, such a different meaning would result in illogical operation of the Company’s energy efficiency rider.

OPC agreed to the meaning of “program costs” in the MEEIA 1 Plan when it agreed to the 2012 Stipulation. OPC should not be allowed to choose a differing definition now just because it wants to lower the Company's performance incentive.

[15] Marke Direct, p. 13.

Q. Please summarize how the MEEIA Report and the 2012 Stipulation demonstrate that the UCT must be used to determine net benefits for the performance incentive.

A. Below is a brief summary of the documents the Company has relied on when determining the proper inputs, specifically which cost test to use, when calculating the net shared benefits:

1. The MEEIA Report expressly says to use the UCT.
2. The 2012 Stipulation only modified portions of the MEEIA Report, and nowhere did the 2012 Stipulation call for the abandonment of the UCT as the basis for the utility incentive component of the DSIM.
3. The net benefits figures in Appendix B to the Stipulation were determined using the UCT, as they had to be given the terms of the DSIM.[16]
4. The program costs in the 2012 Stipulation clearly exclude any participant costs.
5. As discussed below, the workpapers underlying the 2012 Stipulation also prove the UCT must be used.
6. The references to "incentives" and "end-use measures" in the definition of "program costs" cannot logically refer to participant costs, which were not included in the calculations of program costs that underlie the approved Plan.

[16] As I explained earlier in my testimony, this is borne out by the MEEIA Report's original $364.3 million in net benefits being easily reconciled against Appendix B's $360.8 million of net benefits, since the difference between them can be easily shown as resulting from two modifications that had nothing to do with using the TRC versus the UCT.

B. Energy Efficiency Investment Charge Rider

Q. You have established above that the 2012 Stipulation and the MEEIA Report, which define the terms of the DSIM (and its utility incentive component) provide for determination of net benefits using the UCT. Are there other documents that prescribe how the net benefits used in the performance incentive should be calculated?

A. Yes there is - the Company's Rider EEIC, which itself was approved by the Commission. Tariffs set terms that the Commission, the utility, and its customers must abide by, so if the tariff establishes a method to perform a calculation (as it does here), we have to follow that method.

Q. Please explain how the tariff addresses the calculation of net benefits.

A. There are three definitions in Rider EEIC that work together to require the use of UCT instead of TRC to determine the net benefits used in the performance incentive calculation. The three relevant definitions in Rider EEIC are: 1) Performance Incentive Award; 2) Evaluation, Measurement, and Verification – Net Shared Benefits ("EM&V-NSB"); and 3) Program Costs. I have reproduced those definitions below.

Definition of Performance Incentive Award:

"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.

Definition of EM&V-NSB:

"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.

Definition of Program Costs:

"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).

The definition of "Performance Incentive Award," explicitly frames this award as a "***percentage of EM&V-NSB.***" The definition of EM&V-NSB specifically explains that it is the "***…[lifetime avoided costs] less the 2013 present value of Program Costs.***" Defining EM&V-NSB in this manner directly contradicts OPC's position that customer costs should be included in net shared benefits calculation, since the Rider EEIC goes on to define "Program Costs" as:

> …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).

Q. Couldn't Program Costs be interpreted as total costs - both utilty costs and participant costs?

A. No, implementing Rider EEIC's other provisions don't allow for this interpretation. Please look at the formula below for the "Energy Efficiency Investment Rate" from Rider EEIC. There are four components that are added together, with the first being Net Program Costs ("NPC"). Net Program Costs in Rider EEIC are limited to the Company's costs of administering its energy efficiency programs. The NPC term is the summation of Projected Program Costs ("PPC") and Program Cost Reconciliation ("PCR"). The Projected Program Costs are defined as "an amount equal to ***Program Costs*** projected by the Company to be *incurred* during the applicable EP," (emphasis added), which again points to the definition of "Program Costs" that I discussed above. After all, the Company does not "incur" participant costs. Further, the Program Cost Reconciliation is defined as "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… ." In other words, Net Program Costs equals the future expected utility costs of administering the energy efficiency programs plus any over/under-recovery of those *utility* costs from historical periods. The Company does not bill any participant costs as part of program costs. Consequently, there is simply no plausible explanation as to how or why customer out-of-pocket costs would factor into the Company's rate calculation (which would also double those costs since those costs would be incurred both outside and inside Rider EEIC); indeed, there have been two prior Rider EEIC rate filings, neither of which included any non-utility costs in the Net

Program Costs used to determine the Energy Efficiency Investment Rate that has been charged to customers.

<u>Net Program Costs Calculation from Rider EEIC:</u>

```
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.
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Q. Did any party, including OPC, claim the Energy Efficiency Investment Rate was incorrectly calculated for failing to include non-utility costs? In other words, did anyone claim "program costs" included participant costs?

A. No such argument was raised when the rate filings were made, and no such argument was raised in the first prudence review of the Company's MEEIA Cycle 1 Plan.

Q. Please summarize how the explicit terms of Rider EEIC support the 2016 Stipulation.

A. An understanding of a few key definitions and a basic understanding of the rate calculation show that the performance incentive calculation in the 2016 Stipulation has been performed correctly and in accordance with the terms of Rider EEIC. Perhaps more importantly, if the Rider EEIC calculations were to be done in the manner argued for by OPC, they would conflict with the terms of the MEEIA Cycle 1 Plan, as reflected in the Commission-approved 2012 Stipulation and the MEEIA Report.

C. <u>Commission Rules</u>

Q. Is there any other evidence demonstrating that net benefits must be determined using UCT for purposes of determining the performance incentive?

A. Yes, the Commission's MEEIA rules provide for use of the UCT.

Q. Please explain.

A. The Commission's MEEIA rules define net shared benefits as:

> …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.* (Emphasis added)

For convenience I *italicized* the second portion of the definition because there is no dispute about the first portion which represents the "gross benefits." To determine net benefits, something must be subtracted from the "gross benefits." This Commission rule clearly states that the programs' costs are to be subtracted. The definition goes on to describe the types of things that are included in program costs.

Q. How does the Commission's definition of net shared benefits relate to the Company's MEEIA Report, 2012 Stipulation, and Rider EEIC?

A. As I previously discussed, the Company's MEEIA Report clearly requires net benefits to be determined using the UCT. The 2012 Stipulation and Rider EEIC also includes a definition of utility program costs that is virtually identical to the Commission's definition of net shared benefits. It is clear from the table below that the

Company's performance incentive calculation is entirely consistent with the Commission's rules.

Comparison of Program Cost Definitions

Commission MEEIA Rules (net shared benefits)	Rider EEIC	2012 Stipulation
…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.	"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).	MEEIA Programs' costs include expenditures on items such 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.

Q. Is there any credible argument that the Commission rules were designed to calculate the net shared benefits using an approach other than the UCT?

A. No. The Commission's rules are plain just as are the Company's Rider EEIC, the MEEIA Report, and the 2012 Stipulation.

D. <u>OPC's Testimony and Workpapers</u>

Q. Did OPC sponsor testimony in this docket in response to the MEEIA Cycle 1 Plan that was filed, and otherwise actively participate in the development of the 2012 Stipulation?

A. Yes. Former longtime Chief Economist for OPC, Ryan Kind, sponsored testimony, including testimony that specifically addressed the original performance incentive proposal. As noted, two changes were made to the original DSIM proposal found in the MEEIA Report, but the remaining terms of the original DSIM proposal were not changed by the 2012 Stipulation, and were approved by the Commission.

Q. Did Mr. Kind, on OPC's behalf, file testimony relevant to the calculation of the net benefits issue?

A. Yes, he did. In Mr. Kind's rebuttal testimony (EFIS Item No. 55 in this docket), Mr. Kind expressed several concerns about the Company's original performance incentive proposal (although OPC later agreed to the vast majority of the MEEIA Cycle 1 Plan by signing the 2012 Stipulation). Indeed, Mr. Kind developed an alternative performance incentive proposal, which he introduces starting at line 22, page 25 of his rebuttal testimony. Mr. Kind outlines the specifics of his alternative performance incentive starting at line 8, page 29 of his rebuttal testimony, and actually developed a sharing grid that specified performance incentive awards (in dollars) depending upon the level of net benefits achieved (shown in Table 5 at page 30 of Mr. Kind's rebuttal testimony, which I have reproduced below). Both Mr. Kind's discussion of Table 5 and his workpapers confirm, based on the figures he used, that *even he, on OPC's behalf,* used the UCT to develop the net benefits for his alternative proposal. His testimony in this regard states as follows (both Table 4 and 5 below are from Mr. Kind's rebuttal testimony):

Table 4: OPC's Proposed Incentive Mechanism

	Annual Net Benefit Targets (percent of planned)	Annual Incentive Earned (percent of budget)
Threshold	50 percent	5 percent
Planned	100 percent	10 percent
Exemplary Cap	150 percent	15 percent

Q. Please explain how this performance incentive would be applied in the context of the Company's current DSM plan.

A. The results of applying this proposal to the Company's current DSM plan are presented in Table 5. For the three-year plan the planned net benefits are $364 million, which means that the threshold level would be $182 million and the cap would be $546 million.[3] Once the Company reaches the threshold level of net benefits it would earn $6.3 million of incentives, and this amount would increase linearly reaching $13.4 million at the planned level and potentially reaching $20.1 million at the cap. Table 5 also presents the annual outcomes for the three levels of performance.[4] Figure 1 presents the results for the three-year total.

Table 5: Performance Incentive Based on the Company's Proposed DSM Plan (million$)

	2012	2013	2014	Total
Net Benefits				
Threshold (50%)	44.2	57.6	80.3	182.1
Planned (100%)	88.4	115.3	160.7	364.3
Exemplary Cap (150%)	132.5	172.9	241.0	546.4
Incentive Earned				
Threshold (50%)	1.8	2.1	2.8	6.7
Planned (100%)	3.5	4.3	5.6	13.4
Exemplary Cap (150%)	5.3	6.4	8.4	20.1

Recall that the $364 million figure (the above-highlighting was added to the table from Mr. Kind's rebuttal testimony) is a net benefits figure determined using the UCT, as explained in detail above.

Q. You indicated that Mr. Kind's workpapers confirm that he used the UCT in preparing testimony on behalf of OPC. Please elaborate.

A. As is typical, OPC provided Mr. Kind's workpapers that underlie his rebuttal testimony. Those workpapers include the calculations to support his alternative proposal. Mr. Kind's workpapers included costs needed to calculate net benefits from both the UCT and the TRC. However, both his testimony and his alternate proposal *only utilized the net benefits calculated using the UCT.* This isn't surprising, and I certainly am not criticizing Mr. Kind for the use of the UCT. What I am instead pointing out is this demonstrates OPC understood from the beginning that the Company's proposal was based on net benefits determined using the UCT, and that net benefits under the Commission's rules were to be determined using the UCT. Otherwise, OPC would have objected to use of the UCT at that stage and used the TRC-based net benefits instead.

The relevant portion of Mr. Kind's workpaper is attached to this testimony as Schedule WRD-R1.

Q. Why do you think OPC now argues for use of the TRC?

A. It appears that OPC's primary motivation is to find a way to lower the amount Ameren Missouri receives as a performance incentive, regardless of its prior agreement that the calculation method was apprորpiate. Even though OPC agreed to this method of calculation over four years ago, it appears to be unhappy with the actual results that calculation produces today. In my opinion, OPC is hoping the Commission will somehow relieve OPC from living up to its agreement, as reflected in the 2012 Stipulation and will otherwise attempt to disregard its own approval of the performance incentive.

That this is OPC's apparent strategy is laid bare by Dr. Marke's prominent quote from the Commission's initial order in the Company's MEEIA 2 case where the

Commission declined to approve the original MEEIA 2 proposal (File No. EO-2015-0055), indicating its concerns with "over-compensation" through the throughput disincentive mechanism in place for the MEEIA Cycle 1 programs.[17]

Q. Does the quote from the initial order in the MEEIA 2 case have anything to do with the issue in this case?

A. No. First, I respectfully disagree with the Commission's conclusion about "over-compensation." One cannot say what the "right" level of costs that energy efficiency measures with long lives will actually allow the utility to avoid until those measures have lived their lives, which for most of them has not yet occurred. Moreover, the current dispute involves the calculation of the performance incentive. The Commission has addressed avoided cost estimates and their utilization in the performance incentive in its order in File No. EC-2015-0315, and the courts will either agree with the Commission or they won't. But most importantly, OPC agreed to the manner in which the net benefits were to be determined for the performance incentive when it signed the 2012 Stipulation, and it was ordered to abide by those agreements. Notably, the Staff, which itself shares the Commission's view about the alleged over-compensation through the throughput disincentive, disagrees with OPC here. The Staff, unlike OPC, is abiding by the 2012 Stipulation it signed and the Commission's order requiring that it live up to its agreement. Moreover, as noted above, Rider EEIC and the Commission's rules bind everyone, the Commission included, to the performance mechanism the Commission approved.

[17] Marke Direct, p. 3, l. 17-20.

V. NET-TO-GROSS FOR 2014 AND 2015

Q. OPC has expressed other concerns with the performance incentive aside from utilization of the UCT. Please describe these additional objections.

A. OPC proposes to cut an additional $785,953.32[18] from Ameren Missouri's performance incentive arising from OPC's arguments regarding which net-to-gross ratios should be used to determine net benefits. OPC also expressed concerns about a $1 difference that I will address later in my testimony.

Q. Why does OPC propose this additional $785,953.32 cut?

A. Ameren Missouri and Staff calculated the net benefits for the 2014 and 2015 program years in accordance with the Commission-approved 2015 Stipulation, which provided for a NTG of 1.0 if the portfolio-wide average NTG landed within a certain stipulated range. OPC wants to disregard the stipulated NTG and instead use the NTG (and accompanying net benefits) reported in the EM&V reports.

Q. How did the 2015 Stipulation modify the DSIM?

A. First, it is important to understand that the 2015 Stipulation arose because of significant disagreements arising from the EM&V results from the first program year (2013). More specifically, when the 2013 EM&V results were reported (in the Spring of 2014), both by the Company's EM&V contractors and by the Commission's auditor, there were significant and contentious disagreements regarding the NTG estimates in the contractor's and auditor's reports. The NTG results can have a significant impact on the calculated net benefits, and they are estimates that are not objectively determinable.

[18] This is a net present value amount in 2013 dollars, not the nominal amount of performance incentive.

These disagreements were litigated for many months, with dueling testimonies among the Staff, OPC and the Company, as well as depositions and other discovery, etc.

Eventually, the parties reached agreement on two things, which they included in the 2015 Stipulation. First, they agreed that the net benefits for 2013 would be set at $123,646,681. Second, they agreed to modify the utility incentive component of the DSIM that would be applied for the 2014 and 2015 program years, a modification I outlined in detail on page 8 of my direct testimony. In a nutshell, the utility incentive component of the DSIM for 2014 and 2015 would be determined just as it had been agreed upon and approved in the 2012 Stipulation, except that we were to take the Commission auditor's NTG estimates and average them with the Company's EM&V contractors' NTG estimates before calculating net benefits for each of those two years. If the average was between 0.9 and 1.1, the NTG value used to determine net benefits would be 1.0. The average was between 0.9 and 1.1 for each of the 2014 and 2015 program years, so when Ameren Missouri and Staff calculated the net benefits reflected in the 2016 Stipulation, they used a net-to-gross value of 1.0 as required by the 2015 Stipulation.

OPC's position is also illogical. Under OPC's argument, if the Company's contractor had a NTG estimate of 0.88 and the Commission's auditor an estimate of 0.93 (an average of 0.905), the NTG would be 1.0 even though the average is 0.095 away from 1.0. However, where both the contractor and the auditor have an estimate of 0.99, then 0.99 would be used, even though 0.99 is a mere 0.01 away from 1.0. That makes no sense.

Q. Given the language of the 2015 Stipulation, which is clear on its face, what is OPC's argument?

A. That's a good question, but I believe the answer to it is found starting with the word "[i]mportantly" on line 19 at page 6 of Dr. Marke's direct testimony. What Dr. Marke seems to be saying is that the provisions of the 2015 Stipulation are inoperative *unless* the Commission's Auditor and the Company's EM&V contractors fail to agree on a point estimate of NTG. The 2015 Stipulation says no such thing and it appears as though OPC is attempting to add qualifications into the 2015 Stipulation that are simply not there.

Q. Please explain.

A. The 2015 Stipulation reads, at paragraph 12:

> Process change to avoid dispute with respect to EM&V annual energy savings and annual net shared benefits for PY 2014 and PY 2015:
>
> (a) In each individual year (PY 2014 and PY 2015), the final evaluator and auditor portfolio-wide energy savings Net-To-Gross ratios ("NTG") shall be averaged for the respective program year. If the portfolio-wide averaged energy savings NTG is between 0.9 and 1.1, then the agreed to NTG will be deemed to 1.0...
>
> (b) If the final evaluator and auditor averaged savings calculations result in portfolio-wide average energy savings NTG lower than 0.9 or higher than 1.1, the parties are free to file change requests, initiate litigation or otherwise contest the program year EM&V results…

The 2015 Stipulation provides that this process change is being made "to avoid dispute," and goes so far as to mandate averaging the Commission's Auditor's and Company contractors' net-to-gross estimates: "(a) In each individual year (PY 2014 and PY 2015), the final evaluator [Company contractor] and [Commission] auditor portfolio-wide Net-to-Gross ratios ("NTG") *shall be averaged* for the respective program year." (emphasis added.) If the OPC's position was correct, then the averaging would only be required if the Commission's auditor and the Company's contractors disagreed, and the 2015 Stipulation would have stated as such. It says no such thing.

VI. OPC'S REMAINING POINTS

Q. What other points did OPC raise?

A. OPC raised three other topics through Dr. Marke's direct testimony: 1) a one dollar ($1) difference in the 2013 net benefits used in the performance incentive calculation; 2) contentions about the TRC as a preferred test for assessing cost effectiveness; and 3) contentions about about how the performance incentive relates (in OPC's view) to the economics of energy efficiency.

A. <u>Rounding of 2013 Stipulation Net Benefits</u>

Q. Dr. Marke testified that the Company used the incorrect net benefit amount for the 2013 program year. Please respond.

A. I concede that the number listed in the stipulated performance incentive calculation in the 2016 Stipulation was not the same rounded number listed in the 2015 Stipulation. While this is attributable to a simple rounding of the numbers, I understand why OPC would see this as a "typo" or other kind of error. Pragmatically, though, there is no real benefit for customers in revising it.

Q. Why is there a difference between the 2013 net benefits used in the performance incentive calculation in the 2016 Stipulation as compared to the amount specified in the 2015 Stipulation?

A. As I said, this is simply due to rounding numbers. In the 2015 Stipulation, the net benefits number included in the text of the agreement was rounded to the nearest dollar. The calculation for the Company's performance incentive in the 2016 Stipulation was inadvertently not rounded to the same level of rounding as the 2015 Stipulation. Both I and the Staff missed this minor rounding difference. OPC also made a mistake by reporting the difference as exactly $1.00 (an error caused by rounding) because in the calculation of the performance incentive the difference is really $0.82.

Q. Please explain why there is no practical impact to customers whether or not the 2013 net benefit number is updated to correct this rounding error.

A. The amount of performance incentive Ameren Missouri actually receives is 6.19% of that $0.82, or about 5 cents. That 5 cents would be spread across 23 months in Rider EEIC. Let's assume that 3 cents of the 5 cent difference was included in the first Rider EEIC filing. The billing units in the Company's most recent Rider EEIC filing was 29,337,659,181 kWh; meaning the overall rate difference to pick up the 3 cent difference would be ~$0.000000000001/kWh. The Rider EEIC rates are rounded to 6 decimal places in the tariff, but the price change associated with fixing the rounding in the 2013 net benefits is at the 12th decimal place. This means that the rate customers see will be the same regardless of whether the $.082 is backed out of the calculation.

Q. Please summarize your conclusions about the rounding of the 2013 net benefits.

A. I very much understand the desire to be exact in the calculation, and my intent is to honor a previous agreement; however, even if I made the correction there would be no impact to customer rates.

B. Total Resource Cost Test as a Preferred Cost Test

Q. Is there any relationship between the TRC being specified in the MEEIA statute and the calculation of the Company's performance incentive four years after it was approved?

A. No.

Q. What does the MEEIA statute provide for regarding the TRC?

A. The MEEIA statute provides that "The commission shall consider the total resource cost test *a* preferred cost-effectiveness test." (Emphasis added). It does not provide that it is *the* preferred test for any purpose, and certainly not for calculating net shared benefits for the purposes of a performance incentive.

Q. What does the MEEIA statute provide for regarding shared net benefits?

A. The MEEIA statute provides that the Commission:

> …"may develop cost recovery mechanisms to further encourage investments in demand-side programs including, in combination and without limitation: capitalization of investments in and expenditures for demand-side programs, rate design modifications, accelerated depreciation on demand-side investments, and *allowing the utility to retain a portion of the net benefits of a demand-side program for its shareholders.*"

(Emphasis added.)

Q. Does the MEEIA statute specify that the Commission must use any particular perspective or test when designing a shared net benefit mechanism?

A. No, as I stated previously, it does not. The Commission has the discretion to approve mechanisms it determines are appropriate. In fact, as outlined earlier, the Commission adopted MEEIA rules specifying that shared net benefits are determined using the UCT, since only utility costs are subtracted from the gross benefits to determine net shared benefits. OPC did not challenge this aspect of the MEEIA rules when they were adopted.

C. Performance Incentive as a Cost

Q. Is the performance incentive a cost to customers?

A. Yes. In fact, the Company demonstrated the net revenue requirement impact to customers in its MEEIA Report which factored in the performance incentive.

Q. Is OPC recommending the Commission factor in the cost of the performance incentive as part of the determination of net benefits to determine the performance incentive?

A. No, although OPC does provide testimony on the subject, OPC is not recommending the Commission take any action on Dr. Marke's related testimony on the subject.

Q. Does it make sense to include the performance incentive as an input to the calculation of the performance incentive?

A. No, such a circular calculation process makes no sense, as Dr. Marke himself acknowledges. Furthermore, the performance incentive mechanism calculation is defined in the MEEIA Report, the 2012 Stipulation, the Commission rules, and Rider EEIC and none of those documents even come close to making such a circular calculation.

VII. CONCLUSION

Q. Given the foregoing evidence, what result must the Commission reach in this proceeding?

A. The DSIM, and more specifically, the utility incentive component (performance incentive) of the DSIM, requires the use of the UCT in determining net benefits. All parties, and the Commission, are bound by the DSIM, per the Commission's rules. Rider EEIC, the Commission's rules, and all of the other evidence (as compared to OPC's new arguments) also dictate use of the UCT to determine net benefits. The Staff recognizes this, and Mr. Rogers has affirmed it in his testimony, and even OPC agreed when it signed the 2012 Stipulation. Consequently, the performance incentive of $$29,065,869.38 contained in the agreement between Ameren Missouri and Staff is both correct and appropriate.[19]

Q. Does this conclude your direct testimony?

A. Yes, it does.

[19] If the Commission prefers to set the performance incentive award at $29,065,869.33 by backing out the $0.82 rounding error that would also be correct. As noted, doing so will not impact customer rates.

BEFORE THE PUBLIC SERVICE COMMISSION
OF THE STATE OF MISSOURI

In the Matter of Union Electric Company d/b/a Ameren	)	
Missouri's Filing to Implement Regulatory Changes	)	File No. EO-2012-0142
Furtherance of Energy Efficiency as allowed by MEEIA.	)	

AFFIDAVIT OF WILLIAM R. DAVIS

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

William R. Davis, being first duly sworn on his oath, states:

1. My name is William R. Davis. I am Director of Energy Efficiency and Renewables for Union Electric Company d/b/a Ameren Missouri ("Ameren Missouri" or "Company").

2. Attached hereto and made a part hereof for all purposes is my Rebuttal Testimony on behalf of Union Electric Company d/b/a Ameren Missouri consisting of 35 pages and Schedule(s) WRD-R1, all of which have been prepared in written form for introduction into evidence in the above-referenced docket.

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

William R Davis
William R. Davis

Subscribed and sworn to before me this 12th day of October, 2016.

Beckie J. Eaves
Notary Public

My commission expires:

BECKIE J. EAVES
Notary Public - Notary Seal
State of Missouri
Commissioned for St. Louis City
My Commission Expires: February 21, 2018
Commission Number: 14938572

MO OPC
UE EO-2012-0142

Program Information									
Year	Program Costs - UTC	% of Total	Program Costs - UTC (NPV)	Program Costs - TRC	Benefits (Lifetimes vary)				Net Benefits
					Energy	Capacity	Avoided T&D	Total	
2013	35,239,613	24%	35,239,613						
2014	45,965,915	32%	42,978,883						
2015	64,087,685	44%	56,029,017						
Total	**145,293,213**	**100%**	**134,247,513**						
Average	48,431,071								
NPV (6.95%)	134,247,848			240,658,032	$370,368,221	$91,089,421	$37,084,395	$498,542,037	364,294,189