

## Appendix 8.4

### EM&V Plan and Timeline

KCP&L strives to provide useful, impactful and cost effective MEEIA programs. Ongoing analysis of program performance through Evaluation, Measurement & Verification (EM&V) is an important tool to support that goal. Approximately but not more than five percent (5%) of the three-year MEEIA Programs' costs budget will be spent for EM&V. We'll work with the stakeholder group to develop an evaluation plan to determine how best to allocate and utilize the EM&V budget. The plan will address three main areas: process evaluation, impact evaluation and cost effectiveness.

#### Continuous Improvement of EM&V Approaches

Our EM&V plan will continue to follow MEEIA Rules, requirements from the Missouri Code of State Regulations 4 CSR 240-22.070 (8), EM&V best practices and guidance from the US DOE's Uniform Methods Project (UPM), the International Performance Measurement & Verification Protocol (IPMVP) and other applicable organizations. The evaluator will also refer to Missouri Statewide Evaluation Measurement and Verification Protocols<sup>1</sup> for guidance. We'll also continue to utilize emerging methods that offer better information or certainty around EM&V impacts, net savings estimates and process evaluation findings.

Two good examples of this in MEEIA Cycle 2 include:

- The use of newly developed **customer journey mapping techniques** that document each program's processes, customer engagement points, and key performance indicators, as well as document the experience from the customer's viewpoint.
- The use of **hourly HVAC runtime data** from thermostat data to derive impacts for the programmable thermostat demand response program.

To maximize the value of EM&V resources, we plan to continue to utilize emerging methods and best practices in MEEIA Cycle 3. In particular, we will consider:

- *Fast Feedback Surveys*: These surveys are increasingly used by the industry. The concept is to survey participating customers on a consistent, rolling basis immediately after they participate. By conducting these surveys on an ongoing basis, we receive more timely and accurate feedback — and can use this information to guide program operations and potential adjustments. Fast feedback surveys evaluate topics such as customer satisfaction with the program, the quality of information provided, baseline assumptions and the impact of rebates on customer decision making, including free ridership

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<sup>1</sup> <https://energy.mo.gov/about/trm>

- *Impact Evaluations with AMI Data:* The industry has preferred to measure impacts using actual customer consumption data. This data reflects the combination of technologies and behavior, as it is part of billing systems already being collected. However, use of billing analysis techniques as a whole has been limited due to the traditional periodicity of billing data, generally in the form of just 12 observations annually. We began deploying AMI/interval meters in 2015 and are now in position to utilize this data in EM&V impact evaluations during MEEIA Cycle 3. We'll be asking the selected evaluation contractor to consider impact methods that utilize this data, particularly where there can be significant data collection cost savings or accuracy improvements.
- *Significant Research.* Historically, the EM&V contractor has performed detailed impact and process evaluations. We'll work with the EM&V contractor — and the stakeholder group as needed — to identify opportunities to conduct innovative, targeted research to enhance evaluation and improve overall portfolio — and specific program — design and processes. This may include the EM&V contractor:
  - identifying opportunities to improve tracking of data, energy modeling and secondary research of other applicable evaluations or studies completed.
  - conducting supplemental research to identify best performance by comparable utilities. The EM&V contractor's research may include identifying best performing program or portfolios, along with providing its experience and understanding of best practices obtained from other portfolio evaluations if/as available.
  - identifying opportunities to enhance estimates of free ridership and spillover, and/or adjust methods and algorithms for savings calculations.

Requests for additional research throughout the program year can be identified and made by the KCP&L, the stakeholder group and/or the EM&V contractor. Reallocation of some funds from standard verification work may be necessary to support this effort.

### **EM&V Reports and Timeline**

EM&V reports will be completed for each year of the MEEIA program cycle. As required by the Commission's MEEIA regulations, the evaluators will provide the stakeholder participants with a copy of the draft and the final EM&V report at the same time as they are provided to us.

The annual report will provide the energy savings and demand reductions for each of our MEEIA programs. The report will include the results of analyses conducted and methods used to evaluate, measure and verify the energy and demand savings achieved, along with the approaches used for savings analyses. The report will include a summary of process evaluation and will provide details regarding the impact methodologies and results as well as significant process findings and recommendations.

## **Early Evaluation Results and Feedback**

To assist in continuous improvement of programs, the EM&V contractor will provide us with interim process and impact evaluations as appropriate. This interim feedback will enable us to make timely, in-cycle changes to maximize customer satisfaction and energy impacts. This interim reporting would include early results and/or feedback, and would be provided to us in a manner and timeframe that allows for corrections, as needed. This interim feedback could be in the form of periodic ad-hoc reports, memorandums, dashboards, presentations, and/or conference calls.

The EM&V Contractor will work with us, the stakeholder group, and the Commission's independent EM&V Auditor (Auditor) to establish a schedule of monthly or regular meetings whereby program results can be provided and completely discussed before the EM&V draft is issued. This reporting will likely be conducted via conference calls, skype meetings, etc. in a format in which specific results can be readily viewed, discussed and open issues resolved. The stakeholder group is encouraged to provide comments during this process, as providing comments and recommendations earlier to the EM&V contractor will allow more time for research of open items as well the incorporation of comments and changes to the draft and final report.

Sixty days after the end of each program year, the EM&V contractor will circulate a draft EM&V report to all stakeholders participating in the stakeholder group and the Auditor. Sixty days after circulation of the draft EM&V report, the Auditor and each stakeholder group participant will provide any comments and recommendations for report changes to the EM&V contractor, to all other stakeholder group participants and to the Auditor.

Prior to issuing the Final EM&V Report, the EM&V contractor will host at least one meeting with the Auditor and the stakeholder group participants to discuss the comments and recommendations for report changes. The EM&V contractor will determine what comments and/or changes are incorporated into the Final EM&V Report. Thirty days after the deadline for comments and recommendations for report changes, a Final EM&V report will be provided to all stakeholder group participants and the EM&V Auditor by the EM&V contractor. Fourteen days following the Final EM&V report, the Auditor will issue its final report.

Any stakeholder group participant who wants a change to the impact evaluation portion of the Final EM&V Report will have 28 days from the issuance of the Final EM&V Report to file a request with the Commission to make such a change (Change Request). Any stakeholder group participant filing a Change Request will set forth all reasons and provide support for the requested change in its initial Change Request filing. Responses to a Change Request may be filed by any stakeholder group participant and are due twenty-five days after the Change Request is filed. The response should set forth all reasons and provide support for opposing or agreeing with the Change Request. Within five business days after the deadline for filing a Change Request (if a Change Request is filed), the stakeholder group participants will hold a conference call/meeting to agree upon a proposed procedural schedule that results in any evidentiary hearing that is necessary to resolve the Change Request to be completed within sixty-five

days of the filing, and which will recommend to the Commission that the Commission issue its Report and Order resolving the Change Request within thirty days after the conclusion of such a hearing.

The Signatories anticipate a hearing with live testimony may be required to resolve a Change Request, but if a hearing is not required, they agree to cooperate in good faith to obtain Commission resolution of a Change Request as soon as possible. The Signatories will be parties to a Change Request resolution proceeding without the necessity of applying to intervene. The procedural schedule for such a Change Request proceeding will provide that data request objections must be lodged within seven days and responses will be due within 10 days (notifications that additional time is required to respond will also be due within seven days).

All signatories agree to accept the impact evaluation energy and demand savings (kWh and kW) estimates of the Final EM&V Report, as it may be modified by the Commission's resolution of issues in a non-appealable Order related to the impact evaluation portion of the Final EM&V Report, for purposes of calculating achievements towards targeted net energy and demand savings earnings opportunities.

**Table 1: Annual EM&V Timeline (MEEIA Cycle 3 Program Year 1 Example)**

# of Days	Projected Date	Description
	03/01/2019	Identify Priorities for Supplemental Program Research
	05/01/2019	Complete Supplemental Research and Incorporate as needed program design changes
	07/01/2019	EM&V Analysis Starts
	TBD	Conduct Results Update Meetings
	03/31/2020	Program Year Ends
60	05/31/2020	EM&V Draft Completed
	6/01/2019-6/30/2020	Conduct Results Update Meetings
60	07/31/2020	Stakeholder comments due
	TBD	Stakeholder meeting (either prior to comments due or shortly after)
30	08/31/2020	Final EM&V Report due
14	09/14/2020	Final PSC Auditor Report due
14	09/28/2020	Grace period to file with Commission to request impact change, if no requests, then Commission can order within 30 days.
5	10/3/2020	Conference call if needed
20	10/23/2020	Stakeholder group responses to impact change requests to
	10/27/2020	If no impact changes from 8/31/2020 report, then Commission Order
40	12/2/2020	Evidentiary hearings complete
30	1/1/2021	Commission Order resolving change requests
365	1/1/2021	EM&V Results Final

### EM&V Impact Findings

The calculation of our Throughput Disincentive(TD) Adjustment and Earnings Opportunity (EO) will be tied directly to the reporting and application of EM&V impact findings. The impact evaluation plan will be designed to enable us to continuously improve its tracking of program energy and demand savings and to minimize adjustments from EM&V findings. This will be accomplished through annual updates to its Technical Resource Manual (TRM) for “prescriptive” measures and analysis methods and assumptions for “custom” measures. Updates and recommendations will be based on:

- Analysis of hourly or sub-hourly customer load data collected from our AMI deployment, program participant devices (i.e. thermostats) and direct on-site measurement of equipment performance metrics (i.e. operation hours, efficiencies, unit sizes, load profiles).

- Parallel-path evaluation for non-prescriptive measures and programs, such as Custom, Strategic Energy Management, Home Energy Reports and Block Bidding
- Customer surveys and trade ally interviews to understand influences of the program on purchase decisions and behavioral modifications

### **EM&V Use in the Throughput Disincentive Adjustment Calculation**

EM&V will be used for the calculation of the true-up of the TD (both Ex Post Gross and Net to Gross adjustments subject to a floor and a cap) for the purposes of determining Net (kWh and kW) savings attributed to the programs during the three-year cycle. For more details on the detailed mechanics of the TD true-up calculation, refer to (Stipulation Paragraph 9).

Each year the EM&V contractor will calculate the Ex Post Gross program impacts (kW and kWh) and provide recommendations to update the TRM on a prospective basis only.

Also, for the purposes of calculating the TD, any measure installed after a shift in baseline conditions will reflect the baseline shift in the gross and net kWh and kW savings attributable to that measure. The baseline shift will not apply to gross and net kWh and kW savings attributable to any measure installed prior to the baseline shift. For example, if the baseline conditions for LED bulbs change in 2020, we would continue to calculate gross and net kWh and kW savings over the entire life of the LED bulbs installed in 2019 at the original baseline conditions. However, any LED bulbs installed in 2020 or later would use the new baseline for gross and net kWh and kW savings for the purposes of calculating the TD.

### **EM&V Use in the Earnings Opportunity Calculation**

EM&V will be used for the calculation of EO for the purposes of determining the Net (kWh and kW) savings attributed to the programs during the three-year cycle. For more details on the detailed mechanics of the EO calculation refer to Appendix Section 8.7.

Each year the EM&V contractor will review the gross and net program impacts and provide recommendations regarding the adjustment of gross and net energy and demand savings. This review will help us improve the design and delivery of the energy efficiency programs. At the end of each year of the three-year MEEIA cycle, the EM&V contractor will determine the net energy and demand savings we will use to calculate the EO.

Also, for the purposes of calculating the Earnings Opportunity, any measure installed after a shift in baseline conditions will reflect the baseline shift in the gross and net kWh and kW savings attributable to that measure. The baseline shift will not apply to gross and net kWh and kW savings attributable to any measure installed prior to the baseline shift. For example, if the baseline conditions for LED bulbs change in 2020, the Company would continue to calculate gross and net kWh and kW savings over the entire life of the LED bulbs installed in 2019 at the original baseline conditions. However, any LED bulbs

installed in 2020 or later would use the new baseline for gross net kWh and kW savings for the purposes of calculating the Earnings Opportunity.

**Table 2: Evaluation, Measurement & Verification Update Status of Inputs to Establish Earnings Opportunity and Throughput Disincentive Adjustment**

Earnings Opportunity and Throughput Disincentive Inputs Status			
Category	When is it updated?	Who updates?	Description
Net kWh/kW Savings	Ex Post Gross evaluated savings calculated after program years –  Net to Gross Ratio savings calculated after each year of the program cycle	Initially developed by EM&V Contractor subject to feedback from parties in case and approval from commission	Ex Post Gross Energy and demand savings per measure.  Net Savings = NTG Ratio * Ex Post Gross Savings
Net To Gross (“NTG”) Ratio	Annually by program	Initially developed by EM&V Contractor subject to feedback from parties in case and approval from commission	NTG Ratio = 1 - Free ridership rate + participant spillover rate + non- participant spillover rate
Technical Resource Manual (TRM)	Annually on prospective basis only	Company based on data provided by EM&V contractor	Listing of annual kWh/kW measure savings and incremental costs
Earnings Opportunity Award	Annually after post EM&V finalization	Company including data (Net kWh/kW savings) provided from EM&V contractor	See Appendix Section 8.7
Throughput Disincentive Ex Post Gross Adjustment	Annually after post EM&V finalization	Company	TD recalculation using the normalized savings for each measure at customer meter per measure determined through EM&V ex-post gross analysis for each program year less TD calculation using TRM
Throughput Disincentive Net to Gross Adjustment	Annually after post EM&V finalization	Company	TD recalculation using the NTG determined through EM&V for each program year less TD calculation using the NTG Factor of 0.85