

EM&V Committee Guidance Document

Summary of the EM&V Committee

The EM&V Committee (Committee) is a permanent subcommittee of the full Energy Efficiency Advisory Council (“EEAC”). The Committee will prepare recommendations for the EEAC related to planning, managing, directing, overseeing, and reporting of all Evaluation, Measurement, & Verification (“EM&V”) activities in Delaware.¹ The EEAC retains ultimate oversight of EM&V in Delaware as authorized by 29 Delaware Code § 8059(h). The Committee will report to the full EEAC and seek approval for its conclusions and recommended actions.

The Delaware Department of Natural Resources and Environmental Control (“DNREC”) will serve as the facilitator of the Committee. In this role, it will manage the Committee and EM&V process as described in the Regulations Governing Evaluation, Measurement, and Verification Procedures and Standards promulgated pursuant to 29 Delaware Code § 8059(h) (“EM&V Regulations”), develop agendas and convene meetings, coordinate distribution of all documents, establish and manage to tasks and deadlines as appropriate, and lead Committee meetings. The facilitator shall attempt to reach consensus within the Committee whenever possible. In the event that the Committee cannot reach consensus on an issue, the majority and dissenting position(s) will be brought to the entire EEAC for resolution.

This Guidance Document is intended to provide additional detail and discussion to help Committee members, Council members, and the Program Administrators (PAs) carry out these functions. Information contained herein does not have the force of the regulations promulgated as described above. For reference, the applicable section of the regulations is noted in square brackets ([]) in each topic heading. In the event of any discrepancies between this document and the regulations, the regulations will prevail.

In cases where any aspect of this guidance or the regulations is not applicable to a particular activity or report, the entity responsible for the activity or report should identify and explain the omission or deviation.

Membership

The voting membership of the Committee is composed of the following nine individuals, as per the document approved by the EEAC at its February 2017 meeting.

- A representative of DNREC
- A representative of Delmarva Power
- A representative of Chesapeake Utilities
- A representative of the Delaware Sustainable Energy Utility
- A representative of the Delaware Municipal Electric Corporation
- A representative of the Delaware Electric Cooperative
- One At-Large Member, who is also a member of the EEAC
- Two At-Large Members who are not members of the EEAC

Meetings

Meetings of the Committee will be held monthly, although a particular meeting may be cancelled by agreement of the Committee. Tentative proposed meeting dates for the current year are posted on the DNREC/EEAC website.

¹ As a general rule, the term “evaluation” refers to research and analysis with the objective of reducing the uncertainty in the values used for “measurement and verification (M&V)” of the energy savings and other impacts of energy efficiency.

A quorum of voting members or their designees must be in attendance in person to hold a vote of the Committee.

As a public body, anyone may attend meetings of the Committee and participate in discussion.

Process for Making Recommendations to the EEAC

- Identify objective and purpose
- Receive information, data, or guidance from experts, as necessary
- Discuss
- Develop draft recommendation and allow for additional consideration time as appropriate
- Vote on recommendation

EM&V Committee Activities and Responsibilities

The EM&V Regulations provide specific detail on the roles and obligations of the EEAC. Broadly, the Committee will address all aspects of planning, managing, overseeing, and reporting on all EM&V activities in Delaware.

The sections below describe the major components of EM&V for efficiency programs implemented by the PAs and the responsibilities of the parties involved, including the EEAC. A table summarizing this information appears at the end of this section. Where the EEAC is described as a responsible party, the assumption is that the majority of discussion will occur within the EM&V Committee, with recommendations made to the EEAC for approval. In addition to the EEAC, the two other parties engaged in EM&V are:

Program Administrators (PAs): any affected energy providers, as defined by 29 Delaware Code §8059(h), and any other entity who delivers energy efficiency programs and wants the resulting energy savings to count towards the statewide energy reduction goals.

Independent Evaluation Contractor(s) (IECs): a contractor or contractors hired by one or more Program Administrators to perform evaluation activities and products.

Evaluation Activities

Three-Year EM&V Plan [Section X.X.X]

Purpose and Need

The Three-Year EM&V Plan (“Evaluation Plan”) will ensure advance planning for EM&V activities and ensure coverage of programs and measures over a multi-year cycle in a prioritized manner. It will also facilitate coordination between evaluations where possible and accommodate evaluations that require more than one calendar/program year to conduct, or that span two calendar/program years.

Contents

- Outlines evaluation approach for all programs and the reasoning behind prioritization in schedule and budget
- Identifies each program or other efficiency issue to be evaluated, the type of each evaluation (i.e., process vs. impact), and estimated budget
- Where feasible, clearly articulates the data, methodologies, and expected outcomes of each study, to ensure that resources are spent effectively and with a high likelihood of producing useful, actionable results. This may include:
 - Target markets, measures, and customers for inclusion
 - Data to be collected
 - Methods to be employed in analyzing the data
 - Proposed outputs
 - Proposed schedule

Responsibilities

- Each PA develops their own Evaluation Plan, with the assistance of IECs if desired.
- Evaluation Plans should provide as much specificity as possible given the contents of the energy efficiency program plans (“Program Plans”), but this does not imply that additional or different EM&V activities cannot be pursued later in the three-year planning cycle based on changes in evaluation needs.
- The EM&V Committee will provide guidance and assistance in coordinating evaluation activities over time, and across markets and PAs.

Timeline

- Evaluation Plans should be submitted at the same time as the PA’s Program Plans, but the Evaluation Plan will only become “final” and “accepted” once the Program Plans themselves are accepted. Deliberations and revisions to the Evaluation Plan should not hold up acceptance of any Program Plan. The initial three-year Program Plans might not include the Three-Year Evaluation Plan until after the approval of such Program Plans by the appropriate regulatory body. After such approval the Three-Year Evaluation Plan should be submitted to the EEAC within 6 months for acceptance and subsequently to the appropriate regulatory body.
- EEAC accepts Evaluation Plan – September of the year preceding each three-year planning cycle
- PAs contract with IECs to implement evaluations – at such time as the relevant regulatory authority approves EM&V expenditures, ideally by December of that year

Evaluation Study Final Report [Section X.X.X]

Purpose and Need

Present the result(s) of studies in a clear, concise manner to facilitate quick understanding of key findings, while also providing detail to support critical review of assumptions, data, and methodologies.

Contents

As specified in Section X.X.X of the EM&V Regulations, Evaluation Study Reports should contain the following

- Cover
- Title Page
- Abstract
- Table of Contents
- Executive Summary (including impact findings and process recommendations as specified further in Section 6.1.4 of the EM&V Regulations)
- Introduction and Purpose of the Study
- Description of Programs Covered in Study (markets, measures, and customers included)
- Study Methodology
- Assessment of the Reliability of Study Findings (including confidence intervals where appropriate)
- Detailed Study Findings (for impact and process evaluations)
- Recommendations for Program Changes and Future Studies
- For impact studies, *ex-post* cost-effectiveness results

Responsibilities

- IECs - perform all evaluation activities as described in Evaluation Plan, provide draft report to PAs and Committee for review and comment

- Committee – review draft report to ensure study provides reliable, actionable information and conclusions; request refinements as necessary
- IECs – complete final report
- Committee – review final report and, if any voting member has an objection to any of the findings, provide comments for the record; elevate final report to the EEAC for its approval and acceptance
- Committee – determine whether any updates to the Technical Reference Manual (TRM) or net-to-gross ratios are needed as a result of the evaluation; elevate such need to the EEAC for its consideration
- Committee – decides if any study recommendations warrant action with respect to other programs, whether other programs delivered by the same PA or similar programs delivered by different PAs, and elevates such recommended actions to the EEAC for its consideration.

Timeline

The timeline for each study will be unique, described in the Evaluation Plan, and be subject to change consistent with the work plan of the IEC(s) engaged for each particular activity. Therefore, no timeline for individual evaluation reports is specified here.

Annual Summary of Evaluation Results [Section X.X.X]

Purpose and Need

Summarize the key findings of all studies conducted in a program or calendar year, in order to provide the EEAC with a consolidated list of findings and recommendations to facilitate discussions of program refinements, evolution, and the next three-year program cycle.²

Contents

- Table summarizing all completed studies, including date completed, PAs/programs covered, any key quantitative results (e.g., NTG values) and associated confidence intervals
- One page summaries for each completed study, highlighting conclusions/findings and any recommendations for program changes
- Table of ongoing studies and schedule for completion
- Suggestions for any needed changes to future years' evaluation plans or the three-year EM&V plan that result from the findings

Responsibilities and Timeline

- DNREC/EEAC consultants – develop template for report summaries and share with PAs - December
- PAs/IECs – populate template with information and data on relevant studies - February
- DNREC/EEAC Consultants – consolidate information and release draft summary report – March
- PAs/IECs – review draft and ensure accuracy of reporting – April
- DNREC/EEAC Consultants – release final summary report – May

² The EM&V Regulations also require the PAs to provide quarterly EM&V progress reports that include updates on progress towards EM&V goals and expenditures (Section 5.4.5). These progress reports can be informal presentations or verbal reports delivered during EEAC Council meetings. No requirements or guidelines are given here.

Annual Accounting of Savings

Biannual Program Snapshots [Section X.X.X]

Purpose and Need

Provide the EEAC with information regarding the progress of the PAs' efficiency programs in a timely fashion, enabling early consideration of program refinements.

Contents

The Biannual Snapshot should include data tables presenting key information regarding the progress of efficiency programs as compared to planned savings and budgeted expenditures. For each program a clearly labeled table should present the following data points, both the projected annual value or budget and the actual year-to-date value, on an *ex-ante* basis:

- Number of projects
- Electric energy savings (kWh)
- Electric peak demand savings (kW)
- Natural gas savings (therms)
- Program expenditures

In addition, the Biannual Snapshot should include a discussion of progress towards any important program milestones and an explanation for any significant variance from projections

Responsibilities and Timeline

- DNREC/EEAC Consultants – develop template for reporting table(s) and share with PAs – December
- PAs – prepare program snapshots for presentation to EEAC – August and February EEAC meetings, covering the first and second half of the calendar year, respectively

Annual Program Reconciliation Report [Section X.X.X]

Purpose and Need

The Annual Program Reconciliation Report (“Reconciliation Report”) is a critical output of the EM&V process. It links together all information and accounting for each efficiency program, demonstrates that savings are accurately reported, and presents the results of cost-effectiveness analysis.

Contents

The Reconciliation Report should present a finalized account of program performance for the completed year, presented in the same format as in the Biannual Snapshot, but using final accounting that matches expenditures to completed projects. Accounting must first identify those projects that were officially closed in the reporting year. Projects begun in year, but not finished should not be included. Only expenditures associated with completed projects should be included.

For each program a clearly labeled table should present the following data points, both the projected annual value or budget and the final realized value.

- Number of projects completed
- Gross and net electric energy savings (kWh)
- Electric energy savings realization rate (net kWh achieved/kWh projected)
- Gross and net natural gas savings (therms)

- Natural gas savings realization rate (net therms achieved/therms projected)
- Program yearly expenditures, with incentives and other costs reported separately
- Cost-effectiveness using the Total Resource Cost test as specified in the EM&V Regulations: benefits, costs, net benefits, and benefit-cost ratio (BCR)

The Report should also include an explanation of values and assumptions used preparing the program data, including the following.

- Explanation of any deviation in savings calculation methods or values from those used during program planning,
- Verification approaches and adjustments – Because verification approaches will vary according to program type and scale, not all of the following components will be relevant for any given program
 - For programs with many participants verified using population sampling, data on the sample frame, relevant statistics, and confidence intervals should be reported. Verification may involve assessment of records/receipts and/or phone/on-site verification.
 - For programs with projects with large savings, sampling should include on-site verification.
- For programs not undergoing impact evaluations in that year, the report should provide the tracked and claimed gross and net savings consistent with prior agreements, deemed savings and the TRM, and indicate that these are unevaluated results

Responsibilities

- PAs – For programs being evaluated, contract with IEC(s) to perform annual reconciliation and verification of savings estimates and other program data; provide IEC(s) with all relevant program data to support reconciliation and verification; upload final, accepted program data to the Statewide Energy Efficiency Database
- IEC(s) – Review all PA program data and verify savings estimates.
- EEAC – Review, suggest revisions/refinements/corrections, and ultimately accept reconciliation reports as the program results “of record” for use in reporting to the legislature and the public.

Timeline

- PAs submit draft reconciliation reports to EEAC for review – no later than April 1 of each year
- Comments from EEAC to PAs – no later than May 15th
- PAs submit final reconciliation reports to EEAC – June 15th
- EEAC accepts final reconciliation reports – July EEAC meeting

Summary of EM&V activities and responsibilities, as per the EM&V regulations

Phase	Action	Timing	Responsible Parties
Three-Year Evaluation Plans	Develop Plans outlining evaluation of all programs; identifies programs to be evaluated, type of each evaluation (i.e., process vs. impact), and estimated budget		PAs and IECs, with support from EM&V Committee
	Accept Plans		EEAC
	Contract with IECs to implement their 3-year EM&V Plan		PAs
Evaluations	Perform all evaluation work as dictated by Three-Year Plans		IECs
	Provide draft Evaluation Study reports to Committee		IECs and PAs
	Review draft reports to ensure requirements are met		Committee
	Update draft evaluation reports as necessary		IECs
	Determine if any changes to TRM or NTG ratios are warranted as a result of the evaluation		Committee
	Review findings and recommendations of the Committee and, if appropriate, accept		EEAC
	Post final EM&V results to website		DNREC
Annual Evaluation Summary	Prepare summary information for inclusion in report		IECs/PAs
	Prepare annual summary report of all EM&V activities conducted in a given year		DNREC/EEAC consultants
	Post final EM&V results to website		DNREC
Savings Accounting	Prepare bi-annual program snapshots		PAs
	Prepare draft annual reconciliation report		PAs
	Review draft reconciliation reports and verify savings estimates		IECs
	Review draft reconciliation reports and IEC review findings and suggest revisions or corrections		Committee
	Review findings and recommendations and, if appropriate, accept savings towards statewide energy efficiency goal		EEAC

Attachment A – Example Reporting Tables (provided in Excel workbook)

Biannual Program Snapshots

Program	Program Budget		# of participants/units		Annual Energy Savings (kWh/therms)		Lifetime Energy Savings (kWh/therms)		Peak Demand Reduction (kW)	
	Projected	YTD	Projected	YTD	Projected	YTD	Projected	YTD	Projected	YTD
Residential Programs										
Program										
Program										
subprogram										
subprogram										
Program										
Subtotal - Residential										
Commercial Programs										
Program										
Program										
Program										
Subtotal - Commercial										
Total - All Programs										

Annual Program Reconciliation Report (four tables)

Summary of Verified/Evaluated Annual Savings

Program	Annual Energy Savings (kWh/therms)				
	Planned (Gross)	Verified (Gross)	NTG Ratio	Planned (Net)	Verified (Net)
Residential Programs					
Program					
Program					
subprogram					
subprogram					
Program					
Subtotal - Residential					
Commercial Programs					
Program					
Program					
Program					
Subtotal - Commercial					
Total - All Programs					

- Planned (gross) is the quantity in accepted program plans.
- Verified (gross) is the actual result of program activity, based on tracked quantities of measures and customers, correct application of the TRM, accurate data tracking, etc. The verified results do not affect the measurement of savings in subsequent years.
- NTG is the previously-approved net-to-gross ratio for the relevant program.
- Planned (net) and verified (net) are as above, after the application of the NTG ratio. Verified (net) savings are what "counts" for energy savings towards the goals

Savings Summary – Planned vs. Actual

Program	# of participants/units		Annual Energy Savings (kWh/therms)		Lifetime Energy Savings (kWh/therms)		Peak Demand Reduction (kW)	
	Planned	Actual	Planned	Actual	Planned	Actual	Planned	Actual
Residential Programs								
Program								
Program								
subprogram								
subprogram								
Program								
Subtotal - Residential								
Commercial Programs								
Program								
Program								
Program								
Subtotal - Commercial								
Total - All Programs								

Program Costs

Program	Spending											
	Program Planning & Administration		Marketing		Rebates and Other Customer Incentives		Sales, Technical Assistance & Training		Evaluation & Market Research		Total Spending	
	Planned	Actual	Planned	Actual	Planned	Actual	Planned	Actual	Planned	Actual	Planned	Actual
Residential Programs												
Program												
Program												
subprogram												
subprogram												
Program												
Subtotal - Residential												
Commercial Programs												
Program												
Program												
Program												
Subtotal - Commercial												
Total - All Programs												

Program Cost-Effectiveness

Program	Total Resource Cost																		
	Benefit-Cost Ratio (BCR)		Total Benefits				Energy				Capacity		Non-Energy Benefits		Costs		Net Benefits		
	Planned	Actual	Planned	Actual	Planned	Actual	Planned	Actual	Planned	Actual	Planned	Actual	Planned	Actual	Planned	Actual	Planned	Actual	
Residential Programs																			
Program																			
Program																			
subprogram																			
subprogram																			
Program																			
Subtotal - Residential																			
Commercial Programs																			
Program																			
Program																			
Program																			
Subtotal - Commercial																			
Total - All Programs																			