

New Jersey Energy Efficiency Triennium 2 Evaluation Framework – Straw Proposal

Introduction - Energy Efficiency Evaluation

Evaluation, measurement and verification (“EM&V”) is a vital step in the delivery of effective EE and demand response (“DR”) programs and improves the efficiency and cost-effectiveness of those programs. EM&V provides:

- Useful guidance and feedback to ensure that programs improve over time;
- Parameter values for TRM savings algorithms to reflect attributable behaviors and market conditions that are closest to actual conditions;
- Greater confidence toward achieving EE savings goals; and
- A defensible basis for evaluating the cost-effectiveness of the State’s expenditures of public funds on EE.

To be effective, evaluation activities and methods need to be consistent. Additionally, results need to be applied in an independent and rigorous manner. This Evaluation Framework describes the roles and responsibilities of the entities with responsibility for EM&V of Triennium 2 programs. It outlines the overall framework and minimum requirements for the development and execution of evaluation processes, activities, inputs, and products in New Jersey.

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Glossary

CEA = Clean Energy Act

DR = Demand Response

EE = Energy Efficiency

EM&V = Evaluation, Measurement and Verification

EST = Evaluation Study Team

IE = Independent Evaluator

NJCT = New Jersey Cost Test

NTG = Net to Gross

PA = Program Administrator

PDR = Peak Demand Reduction

PIM = Performance Incentive Mechanism

Realization Rate = Adjustment to net savings to reflect in-service rates and differences between deemed and verified savings

QPI = Quantitative Performance Indicator

RCGB = Rutgers Center for Green Building

RFQ = Request for Quotation

SIE = State Independent Evaluator

Statewide Study = An evaluation study not specific to the evaluation of an individual EE program

SWE = Statewide Evaluator

TRM = Technical Reference Manual

UCE = Utility Contracted Evaluator

UIE = Utility Independent Evaluator

Organization, Roles, and Responsibilities

Many stakeholders collaborate to achieve effective EM&V for EE and DR programs. Stakeholders' roles and responsibilities are described below.

Board and Board Staff – Statewide Evaluation Oversight

Board Staff (“Staff”) oversees the statewide evaluation process with support and advice from SWE. The Board is the ultimate arbiter of policies pertaining to CEA EE & DR evaluations and cost-effectiveness analyses, while routine oversight is tasked to Staff. Staff works with the Utilities, SWE, and other stakeholders to obtain consensus agreement on evaluation policies where possible. If any of the parties disagree with each other, Staff conveys the parties' various positions and provides recommendations for resolution to the Board.

Statewide Evaluator – Evaluation Management and Technical Guidance

The SWE team is an independent third party that develops the EM&V framework, manages the EM&V processes, and provides technical guidance on evaluation studies. SWE consults and reports to Staff, which directs SWE activities and ensures the timely delivery of quality work products. SWE facilitates the EM&V Working Group (“EM&V WG”), TRM Committee, and NJCT Committee. Key responsibilities and deliverables by SWE are:

- Lead master evaluation work plan
- Develop statewide evaluation studies list, including State and Utility evaluation studies
- Develop evaluation study guidelines covering State and Utility study standards and content (“Evaluation Guidelines”)
- Oversee State and Utility evaluation study progress, methods, and results
- Oversee and participate in updates of the TRM and NJCT
- Review and finalize an annual report of ex-post evaluation studies covering Utility and State evaluation work
- Develop, provide recommendations on, and refine the evaluation framework
- Oversee evaluation and verification of the results of the State and Utility programs

Utilities – Program Development and Delivery

The New Jersey public Utilities are responsible for the design, implementation, and evaluation of their programs, as well as reporting on compliance to the Board. The Utilities contract directly with their own utility independent evaluators (UIEs), which provide evaluation services and support to the Utilities in fulfilling their EM&V obligations. When possible, Utilities are encouraged to conduct evaluations jointly. The Utilities ensure that their IEs comply with the evaluation studies list priorities and principles and assure that UIEs scope and carry out studies that comply with the policies, processes, and schedules in the Study Guidelines. The Utilities, with support from program implementers, as applicable, are responsible for reporting Utility savings and tracking progress toward compliance goals. Tracking systems may accurately calculate and record savings according to the guidance provided by the Board and relevant evaluation documents and processes. The Utilities are also responsible for providing data to

analysts who conduct evaluation studies. The Utilities facilitate and promote participant cooperation with evaluation site visits and surveys, as well as work with contractors and other trade allies who are active in their programs.

Utility Independent Evaluators (UIEs) – Utility Program Evaluation

UIEs under contract with the New Jersey Utilities conduct impact and process evaluations, address other priority Utility evaluations, and assess the cost effectiveness of EE programs. UIEs are responsible for developing and implementing evaluation scopes of work that meet the policies, processes, and schedules in the Study Guidelines and are responsive to the varied needs of the Utilities. They support EM&V efforts for Utility participation in PJM markets, track progress toward compliance goals, and inform program and portfolio design. UIEs also provide regular updates on evaluation project progress to the Utilities, SWE, and the EM&V WG.

State Program Administrator – Program Development and Delivery

The State PA serves in a similar capacity to the Utilities in developing, implementing, and tracking New Jersey’s Clean Energy Program offerings and co-managed programs under direction from Staff. The State PA is responsible for ensuring that State-reported savings used to track progress toward compliance goals are accurately reflected and calculated. Additionally, the State PA must record savings according to guidance provided by the Board and provide any relevant evaluation documents and processes. The EST and RCGB evaluate State programs.

State Independent Evaluators (SIEs) – State Program Evaluation

The Board issues a RFQ prior to the start of a Triennium to select one or more qualified consultants to serve as the State’s primary EE Evaluation Study Team (“EST”) for the duration of the Triennium. The State also contracts with the Rutgers Center for Green Building (RCGB) to provide technical support and advice to BPU; they also serve as a resource for SWE. The EST and the RCGB, based on relevant areas of expertise, conduct or manage, as appropriate, a variety of evaluation studies of the State and co-managed programs: impact, process, cost-effectiveness, and statewide evaluation studies. Staff works with SWE to:

- Develop an evaluation study list and plan to prioritize and assign studies for the EST and RCGB to execute; and
- Ensure that the EST and RCGB comply with Evaluation Guidelines.

The EST and RCGB are responsible for:

- Executing evaluation studies that meet the Evaluation Study Guidelines;
- Supporting tracking progress toward compliance goals;
- Informing program and portfolio design; and
- Providing regular updates on evaluation project progress.

EM&V Working Group – EM&V Oversight

The EM&V WG is led and facilitated by SWE and includes Staff, Rate Counsel, the Utilities, SWE, RCGB, and other stakeholders subject to invitation. The EM&V WG establishes committees as needed on targeted issues. The current committees are the TRM, NJCT, and Guidelines Committees. Committee members include interested EM&V WG members and may be

expanded to include technical evaluation contractors, program implementation contractors, and representatives from the other EE working groups as appropriate to provide guidance and input on the relevant issues subject to invitation. The EM&V WG is responsible for:

- Overseeing the evaluation framework and processes;
- Providing input on the evaluation studies list and plans;
- Reviewing policy and technical issues related to evaluation, including issues identified in the committees;
- Providing recommendations to the Board on the development of a standard, transparent, and replicable evaluation framework;
- Sharing associated data and tracking best practices from other jurisdictions; and
- Facilitating the necessary stakeholder processes related to the State’s EM&V policies

The EM&V WG is highly deliberative regarding key EM&V plans and recommendations. Additionally, they make recommendations to Staff. The Board retains the ultimate decision-making authority.

The EM&V WG members may propose changes to the Evaluation Framework and Evaluation Studies List and Plan. EM&V WG shall work toward a consensus for changes for either of these two items. Staff shall approve the changes to the Evaluation Studies List and Plan. Significant changes to the Evaluation Framework shall be approved through the standard Board Order process.

Evaluation Activities, Products, and Processes

This section describes the activities, products, and processes that guide the EM&V of New Jersey’s EE and DR programs. Table 2 provides a summary of the products, uses, and timelines for items described in this section. Table 3 provides the issuance dates for the products. Table 4 provides the calendar for ongoing activities associated with the Evaluation Processes.

Evaluation Studies

Evaluation Studies List and Plan

Description

SWE develops the Evaluation Studies List and Plan. The list comprises evaluation studies for Utility-led programs, State-led programs, and statewide studies (i.e., non-program specific studies) for the Triennium. SWE coordinates with the EM&V WG, NJCT Committee, and TRM Committee to identify and prioritize the studies. The plan includes priorities, budgets, and frequency for each study. SWE works with input from stakeholders to determine the final timeline of each study. SWE also reviews and approves the proposed utility evaluation plans covering all of the utility evaluations based on interpretation of the schedules outlined in the Evaluation Guidelines. Each Utility and UIE coordinates on and conducts the studies in the Evaluation Studies List.

Update Process

The Evaluation Studies List and Plan is developed prior to the start of the triennium and sets the initial evaluation expected in the three-year period. This document is used to inform the Triennium EM&V budgets for the Utilities and State program evaluators. This document is approved by Staff. SWE, with input from the EM&V WG, updates the plan annually to reflect changing priorities and needs. This update occurs before prior to the start of each program year and is approved by Staff. The updated budgets are expected to remain consistent with the Triennium EM&V budgets for the Utilities and State program evaluators.

Evaluation Guidelines

Evaluation Guidelines outline the minimum standards, activities, methods, products, and timing for evaluation studies for State-run, Utility-run, and statewide programs. They are used extensively in the development of the evaluation studies' scopes of work.

SWE oversees State and Utility program evaluators to assure the studies meet or exceed the requirements of the guidelines. SWE develops the guidelines. The Guidelines Committee, comprised of EM&V WG members and Utility and State IEs, reviews the draft guidelines. Staff completes the final review and approval of the guidelines. The EM&V WG develops and updates the guidelines on an as-needed basis through the following process: SWE drafts the updated guideline; Utilities, UIEs, State program administrator, and SIEs comment; SWE revises the guideline and facilitates up to two meetings to discuss before SWE finalizes the guideline.

Statewide Studies

EST and RCGB conduct statewide studies. These studies support the TRM and NJCT and overall program planning. Examples include goal-setting study, TRM updates, baseline, industry standard practice, net-to-gross ("NTG"), non-energy benefits, incremental measure cost, and avoided cost. SWE meets with them to determine which studies to conduct from the Evaluation Studies List and to oversee the studies. SWE also reviews the evaluation studies for compliance with Evaluation Guidelines. EST and RCGB conduct studies in a process identical to how UCEs conduct an evaluation study of Utility-run programs.

Evaluation of Utility-Run Programs

UIEs conduct evaluation studies of Utility-run programs, such as impact and process studies. SWE meets periodically with the Utilities and UIEs to review the Evaluation Studies List and confirms which studies to conduct. To begin an evaluation study, a UIE prepares a draft scope of work according to the Evaluation Guideline specific to the type of study. SWE reviews the scope and refines the study plan for conformance, best practices, and efficiencies. SWE also reviews the draft and completed evaluation studies for compliance with Evaluation Guidelines. The UIEs provide a monthly tracking report to the SWE, which presents the information to the EM&V WG through a Gantt chart. SWE, Utilities, and UIEs meet regularly to monitor progress per the evaluation studies plan. Additionally, they discuss methods, analyses, and results of the evaluation studies. Once the studies are completed, the EM&V WG schedules presentations of key results. The UIEs provide final study reports to post publicly on the Board's website.

Evaluation of State-Run Programs

EST and RCGB conduct and manage, as appropriate, evaluation studies of State-run programs, such as impact and process studies. SWE meets with them to determine which studies to conduct from the evaluation studies list and to oversee the studies. SWE also reviews the draft and final evaluation studies for compliance with Evaluation Guidelines. EST and RCGB conduct studies in a process identical to how UIEs conduct an evaluation study of Utility-run programs.

Evaluation Use Memo

The annual Evaluation Use Memo provides a transparent tracking mechanism to ensure that evaluation study recommendations and results are applied to relevant EE programs and updates of the TRM and NJCT. The memo includes a table in which one column lists the recommendations or results from each of the studies in turn, in a numbered format. Another column includes the Utility's justification of the recommendations and results and if or how they will be utilized or implemented. The annual memo includes all the studies completed by December 1 of each year.

The process to develop and use the memo is as follows:

- 1) The Utility PAs draft the Evaluation Use Memo by the end of the third week of December and submit it to the EM&V WG.
- 2) The EM&V WG forwards the memo to the TRM and NJCT Committees for review and provides specific recommendations or updates on those included recommendations that are related to the TRM and NJCT, and to SWE to review all recommendations.
- 3) SWE provide comments regarding the draft Evaluation Use Memos in a memo to Staff within three weeks. SWE presents this memo to the EM&V WG.
- 4) Once the memo is presented, the PAs have two weeks to respond with comments.
- 5) Staff makes the final decisions on how the recommendations and results will be utilized in the TRM and NJCT.
- 6) Staff provides recommendations for fundamental EE program design changes for Board action for the subsequent triennium.

Goal-Setting Process

The Evaluation Studies List includes one or more studies designed to provide input on the setting of new goals for each triennium. The studies support development of goals at the measure, sector, and Utility level. The studies also provide general information through several scenarios for savings and costs. As guided by SWE and Staff, the consultants conducting the studies provide updates to the EM&V WG on study design, progress, and results. Based on the results and through discussion with the EM&V WG, SWE and Staff develop proposals for statewide goals – including for Utility and State programs – and suggest possible changes to the EE program framework. Staff develops recommendations for goals and the EE program framework through the Board's standard stakeholder process and for ultimate consideration by the Board through the Triennium Framework Board Order.

Technical Reference Manual

Description

The TRM is the compendium of algorithms and parameter assumptions to estimate gross and net savings from EE measures. The TRM includes appendices for NTG, realization rates, in-service rates, and other topics. The TRM is used to estimate energy savings in EE program filings, evaluate compliance in meeting the energy savings goals in the CEA, and determine achievement of performance targets for the triennium. The TRM is updated annually. A comprehensive triennial TRM update is completed prior to the start of a Triennium in preparation for Utility filings. All measures are reviewed and model equations and parameters are updated to reflect market changes and study results. An Annual TRM Update is completed for the intervening years.

Update Process

The TRM Committee, led by SWE, oversees the TRM updates. The TRM development and approval process for the Triennial TRM is as follows:

1. The TRM Committee recommends primary studies to improve the TRM and recommends review of studies conducted in other jurisdictions that may provide relevant information for New Jersey. Committee members may recommend revising specific measures, updating parameters or algorithms, adding new measures, or removing dated measures.
2. In time for each Triennium, the EST, as guided by the SWE, reviews all measures in the TRM and produces a prioritization memo, tracking spreadsheet, and redline draft of revisions.
3. The TRM Committee reviews the above documents and works with the EST and SWE to finalize a draft that is presented to the EM&V WG for review.
4. Staff makes final recommendations, noting points of disagreement, for stakeholder feedback and subsequent Board approval in approximately April before Utility Triennium filings are due.

The TRM Committee, led by SWE, reviews and addresses a subset of priority measures or values for inclusion in the Annual TRM Update.

Use of the TRM for Tracking, Quantitative Performance Indicators, and Performance Incentive Mechanism

Table 1 shows how the revisions to the TRM are used.

TABLE 1 - USE OF TRM REVISIONS.

	Triennium 2 – Yr 1 Triennial TRM	Triennium 2 – Yr 2 Annual TRM Update		Triennium 2 – Yr 3 Annual TRM Update	
		Category 1 Changes	Category 2 Changes	Category 1 Changes	Category 2 Changes
CEA savings compliance	✓	✓		✓	
QPI and PIM	✓	✓		✓	
NJCT	✓	✓	✓	✓	✓
Tracking reports	✓	✓	✓	✓	✓

Category 1 and 2 changes are defined as follows:

Category 1 Changes include, but are not limited to: in-service rates, algorithm errors, non-conformance with the TRM, codes and standards, new measures, and deleted measures.

Category 2 Changes include: algorithmic, baseline or industry standard practice, measure performance, usage characteristics, realization rates, estimation methods, addition of appendices, and all other changes expected as part of a comprehensive .

Table 1 shows that, for the first year of the triennium, the Triennial TRM applies for all the uses. In subsequent years, when the Annual TRM Update is applied, the calculation of savings for the key uses of CEA savings compliance and QPI/PIM calculations are only updated for Category 1 changes. For all other uses, including specifically the calculation of savings for the NJCT and tracking reports, the computations are updated for and reflect all changes in the latest Annual TRM Update, per Category 2 changes.

The rationale for this approach is to provide a balance between a TRM that is stable for the Utilities to plan around while the EE programs are evolving and a TRM that reflects changing market conditions. Staff recommends re-considering the approach to use a fully-updated annual TRM for all of these uses in Triennium 3.

Tracking reports use the Annual TRM Update to provide primary metrics and the Triennial TRM to provide secondary metrics.

New Jersey Cost Test

Description

The NJCT is used to perform benefit-cost analysis of EE program measures, programs, and portfolios. The NJCT is a New Jersey-specific version of the Social Cost Test as defined in the

California Standard Practice Manual.¹ Program administrators use the NJCT to calculate benefit-cost estimates for proposed programs, as well as to provide benefit-cost results in annual progress reports.

Update Process

The NJCT Committee, led by SWE, oversees updates to the NJCT prior to each triennium. The committee helps identify primary studies to support improvements in priority elements of the NJCT. The SWE oversees the design and conduct of the studies, facilitates discussions with the NJCT about updates to the test's structure and values, and presents potential changes to the NJCT Committee and EM&V WG for discussion. Staff provides recommendations about updates to the NJCT to the Board, noting points of disagreement as applicable. The NJCT is approved through the standard Board stakeholder input and approval processes, with Board action on the NJCT Memo occurring in approximately April of the year prior to Utility program proposals for the next triennium. For Triennium 2, the NJCT Memo remains in effect for the duration of the triennium.

¹ National Efficiency Screening Project, "National Standard Practice Manual for Assessing Cost-Effectiveness of Energy Efficiency Resources," *available at* https://nationalefficiencyscreening.org/wpcontent/uploads/2017/05/NSPM_May-2017_final.pdf.

Timelines

TABLE 2 - EM&V PRODUCTS AND THEIR USES.

EM&V Product	Completion Date	Used for Quarterly/Annual Report	Applies to TRM	Applies to NJCT	Used in Filings & Program Design	Other Uses
Triennial TRM	3/2023	Quarterly & Annual	Yes	Yes	Yes	Metrics, progress / performance / incentives indicators, refinements in programs as indicated and prudent
Annual TRM Update	3/2024, 3/2025	Quarterly & Annual	Yes	Yes	Yes in interim filings	Metrics, progress / performance / incentives indicators, refinements in programs as indicated and prudent
Triennial NJCT	3/2023	Annual	If overlap in value or input needs	Yes	Used for cost-effectiveness estimates in filings	Used in Triennial TRM if completed early enough. Feeds into "Evaluation Use" memo 2026; feeds into 11/2026 filings for 2027-2030 Plan.
Triennial Evaluation Studies List and Plan	3/2023	No	Yes	Yes	Yes	Prioritize evaluation studies and help identify evaluation budgets for State & Utilities. Utility evaluation study plan tables included in filings.

EM&V Product	Completion Date	Used for Quarterly/Annual Report	Applies to TRM	Applies to NJCT	Used in Filings & Program Design	Other Uses
Annual Evaluation Studies List and Plan Update	3/2024, 3/2025	No	Yes	Yes	No	Refine/develop/organize and budget priority evaluation studies (State & Utilities).
Evaluation Guidelines – ALL	As needed	N/A	N/A	N/A	N/A	Clarify methods & output expectations for Utility & State impact and process evaluation studies. Also embedded in studies used in TRM & NJCT.
Statewide Evaluation Studies	As scheduled	No	For 2024, 2025, 2026 updates	For 2026 NJCT	Yes, design & savings	Used in Triennial TRM or Annual TRM Update and Evaluation Use Memo if completed by 12/1. Studies completed by April may be used in design and savings for program refinements.
Evaluation of Utility-Run Programs	As scheduled	No	For 2024, 2025, 2026 updates	For 2026 NJCT	Yes, design & savings	Used in Triennial TRM or Annual TRM Update and Evaluation Use Memo if completed by 12/1. Studies completed by April may be used in design and savings for program refinements.

EM&V Product	Completion Date	Used for Quarterly/Annual Report	Applies to TRM	Applies to NJCT	Used in Filings & Program Design	Other Uses
Evaluation of State-Run Programs	As scheduled	No	For 2024, 2025, 2026 updates	For 2026 NJCT	Yes, design & savings	Used in Triennial TRM or Annual TRM Update and Evaluation Use Memo if completed by 12/1. Studies completed by April may be used in design and savings for program refinements
Annual Evaluation Use Memo	1/2024, 1/2025, 1/2026	No	Yes	Yes	Yes	Used in interim program refinements & Annual TRM Updates (2024-2027). Used in planning and filings for 11/2026 for Triennium 3.

TABLE 3 - DOCUMENT ISSUANCE DATES.

	PY2 = FY23 7/2022-6/2023 Triennium 1	PY3 = FY24 7/2023-6/2024 Triennium 1	PY4 = FY25 7/2024-6/2025 Triennium 2	PY5 = FY26 7/2025-6/2026 Triennium 2	PY6 = FY27 7/2026-6/2027 Triennium 2
Evaluation Studies List and Plan	<i>Triennium 2 Evaluation Plan - 4/2023</i>	<i>Triennium 2 Evaluation Plan - Annual Update 3/2024</i>	<i>Triennium 2 Evaluation Plan - Annual Update 3/2025</i>	<i>Triennium 3 Evaluation Plan – 3/2026</i>	<i>Triennium 3 Evaluation Plan - Annual Update 3/2027</i>
TRM	<i>2023 Triennial TRM (4/2023) for Utility filings, QPI and PIM throughout Triennium 2.</i>	<i>2024 Annual TRM Update (3/2024) - Used for secondary metric in PY4</i>	<i>2025 Annual TRM Update (3/2025) - Used for secondary metric in PY5</i>	<i>2026 Triennial TRM (3/2026) for Triennium 3 Utility filings, QPI and PIM throughout Triennium 3</i>	<i>2027 Annual TRM Update (3/2027) - Used for sole metric in PY 6</i>
NJCT	<i>2023 NJCT (4/2023) for filing & annual reporting</i>			<i>2026 NJCT (4/2026) for filing & annual reporting</i>	
Annual Evaluation Use Memo	Annual Memo 6/2023	Annual Memo 1/2024	Annual Memo 1/2025	Annual Memo 1/2026	Annual Memo 1/2027

TABLE 4 - CALENDAR OF EM&V WG ACTIVITIES.

Task	July	August	September	October	November	December	January	February	March	April	May	June	July
Calendar													
Annual Reports			■										
Evaluation Studies List & Plan			■			■							
Evaluation Use Memo						■							
Draft TRM and Avoided Cost Memo Compiled							■						
Annual & Comprehensive TRM Update/Approval Process								■					
NJCT Update/Approval Process								■					
Ongoing Activities													
Quarterly Tracking Reports					■			■			■		
Statewide Studies and Evaluation of Utility- and State-Run Programs	Year-round												
Utility/SWE/ UCE Meetings	Every other week												
TRM Committee, NCT Committee, EM&V WG	Every other week												
Guidelines Committee	Periodically/As needed												