Straw Proposal for New Jersey's Energy Efficiency and Peak Demand Reduction Programs

For Public Comment
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New Jersey Board of Public Utilities
Division of Clean Energy
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Abbreviations

AMI	Advanced Metering Infrastructure
BCT	Benefit Cost Test
BPI	Building Performance Institute
BPU	Board of Public Utilities (NJ)
CEA	Clean Energy Act (N.J.S.A. 48:3-87.9)
CP WG	Comfort Partners Working Group
CHP	Combined Heat and Power
CIP	Conservation Incentive Program
C&I	Commercial and Industrial
DCA	Division of Community Affairs (NJ)
DCE	Division of Clean Energy (NJ, within BPU)
DEP	Department of Environmental Protection (NJ)
DER	Distributed Energy Resources
DOE	Department of Energy (US)
DPMC	Division of Property Management and Construction (NJ, within Department of Treasury)
EE	Energy Efficiency
EEAG	Energy Efficiency Advisory Group
EET	Energy Efficiency Transition
EEC	Energy Capital Committee
EMP	Energy Master Plan
EM&V	Evaluation, Measurement, and Verification
EM&V WG	EM&V Working Group
EPA	Environmental Protection Agency (US)
EV	Electric Vehicle
HMFA	Housing and Mortgage Finance Agency (NJ)
HPwES	Home Performance with ENERGY STAR
HVAC	Heating, Ventilation, and Air Conditioning
LEUP	Large Energy Users Program
LWD	Department of Labor and Workforce Development (NJ)
MC WG	Marketing & Communications Working Group
MWG	Multifamily Working Group
NEB	Non-Energy Benefits
NSPM	National Standard Practice Manual
NJCEP	New Jersey's Clean Energy Program
NJDOE	New Jersey Department of Education
NTG	Net to Gross
NPV	Net Present Value
PA	Program Administrator
PDR	Peak Demand Reduction
PI	Performance Incentive
PMR WG	Products Marketplace and Recycling Working Group
QPI	Quantitative Performance Indicator
RNC	Residential New Construction
ROE	Return on Equity
RVF	Resource Value Framework
SBC	Societal Benefits Charge

SEM	Strategic Energy Management
SEO	State Energy Office (NJ, within BPU)
TRM	Technical Resource Manual
UCC	Uniform Construction Code
UCT	Utility Cost Test

Introduction

On May 23, 2018, Governor Murphy signed into law the Clean Energy Act of 2018 (CEA or the Act),[1] which calls for a significant overhaul of New Jersey's energy systems while growing the economy, building sustainable infrastructure, creating well-paying local jobs, reducing carbon emissions, and improving public health to ensure a cleaner environment for current and future residents. The CEA plays a key role in achieving the State's goal of 100% clean energy by 2050 by establishing aggressive energy reduction requirements, among other clean energy strategies. This action by the Governor came at a critical time in our global fight against climate change and set New Jersey on a path to once again be a leader in charting a course towards a greener future.

The CEA emphasizes the importance of energy efficiency and calls upon New Jersey's public utilities to play an increased role in delivering energy efficiency and peak demand reduction programs to customers. The Act requires each public utility in the state to reduce the use of electricity and natural gas in its service territory. Specifically, the CEA directs the Board of Public Utilities (Board or BPU) to require (a) each electric public utility to achieve, within its territory by its customers, annual reductions of at least two percent of the average annual electricity usage in the prior three years within five years of implementation of its electric energy efficiency program; and (b) each natural gas public utility to achieve, within its territory by its customers, annual reductions in the use of natural gas of at least 0.75 percent of the average annual natural gas usage in the prior three years within five years of implementation of its gas energy efficiency program.[2]

On a broader scale, energy efficiency will play an essential role in meeting the State's clean energy goals. Moreover, energy efficiency initiatives are one of the easiest and cheapest resources in our fight against the global climate crisis. Energy efficiency programs are available for all sectors and offer a variety of targeted incentives for residents and businesses with varying needs throughout the state. Energy efficiency programs also create tens of thousands of green jobs and have long term benefits for participants, such as reducing utility bills and improving health, comfort, and safety. The energy efficiency framework expressed in this straw proposal aims to chart a course towards achieving some of the highest energy efficiency savings in the country.

While some New Jersey utilities and the New Jersey's Clean Energy Program (NJCEP) currently offer energy efficiency programs to ratepayers throughout the State, the CEA puts increased emphasis on meeting enhanced energy efficiency goals. As a result, staff of the Board of Public Utilities (Staff) has developed an energy efficiency transition process in order to fully engage stakeholders, seek input from experts, and, ultimately, to establish a framework for delivering best-in-class energy efficiency and peak demand reduction programs in New Jersey.

In particular, the Board developed the energy efficiency process so that all residents with a vested interest in the success of this energy efficiency transition are able to voice their opinions and interests related to the future of energy efficiency and peak demand reduction programs in New Jersey. To ensure that interested parties were able to fully and meaningfully engage, Staff undertook a robust stakeholder process as part of the energy efficiency transition in order to develop this proposal. The stakeholder process solicited input on all aspects of the State's next generation of energy efficiency and peak demand reduction programs. The stakeholder process included discussions and Staff draft proposals on topics such as market needs related to energy efficiency; program administration, programs, and oversight; cost recovery; performance incentives and penalties; application of utility targets and utility-specific quantitative performance indicators (QPIs); benefit-cost analysis

[1] P.L. 2018, c. 17 (N.J.S.A. 48:3-87.8 et al.)
[2] N.J.S.A. 48:3- 87.9(a).

and evaluation, measurement, and verification (EM&V) methods; and filing and reporting requirements. Staff's understanding of these issues and the interests of the public also benefitted from multiple meetings with the statutorily-mandated, Board-appointed Energy Efficiency Advisory Group (EEAG), a group of five members, representative of various critical interests, as well as from meetings with working groups and other interested parties throughout the energy efficiency transition

In addition to setting New Jersey on a path to 100% clean energy by 2050 as laid out in the Energy Master Plan (EMP),[3] New Jersey must meet targets set forth in the CEA in a way that is consistent with the principles expressed in both documents and several relevant Executive Orders. To this end, the energy efficiency transition and this straw proposal have been designed with the following primary proposed objectives:

- Access to energy efficiency programs for all market segments and for all New Jersey residents and businesses, regardless of geographic location;
- Decreased energy burdens for all ratepayers, with a specific focus on lower income customers and environmental justice communities;
- Increased access to energy efficiency opportunities through promoting and expanding energy efficiency for customers and communities with low and moderate income levels;
- Increased accountability and reporting of spending and savings related to energy efficiency and peak demand reduction;
- Reduced costs for energy saved through reliable and consistent program delivery;
- Reduced administrative costs passed through to ratepayers; and
- Expanded job opportunities and increased economic benefits of energy efficiency for New Jersey.

[3] https://www.nj.gov/emp/docs/pdf/2020_NJBPU_EMP.pdf.

Executive Summary

This straw proposal includes recommendations related to program design and administration, mechanisms for the recovery of costs associated with energy efficiency and peak demand reduction programs, establishing performance targets and metrics, reviewing program performance, the EM&V of programs and program impacts, and the capture and review of utility proposals and related program information through filing and reporting. A summary of each of these five proposals is available below.

A hallmark of successful programs in other states is planning for and implementing opportunities for continuous improvement, feedback, and adaptive response. As New Jersey boldly embraces energy efficiency goals, Staff has integrated concepts for ongoing feedback and modification throughout the energy efficiency transition proposal and looks forward to both formal and informal future processes for the review and modification of programs, administration structures, evaluation and measurement methods, performance targets, performance review methods, cost recovery mechanisms, and filing and reporting requirements as needed.

Critical to the success of the transition will be the close coordination between the State and the utilities, aided by regular meetings and facilitated through formal and informal working groups and stakeholder processes, which are outlined in this straw. Staff notes, expects, and welcomes the need for future revision as New Jersey continues to grow in experience related to energy efficiency delivery and looks forward to stakeholder input on this draft proposal.

Program Administration and Programs

The administrative structure for energy efficiency and peak demand reduction program delivery plays a critical role in achieving energy savings and the energy policy goals set in the CEA. The CEA emphasizes that the State's energy goals should be achieved in a way that benefits all residents in a cost-effective manner. The CEA also envisions utilities playing a more central role in the delivery of EE programs, as has been successful in other states. Because of that, Staff proposes to transfer a significant portion of programs currently administered by the State to the utilities or, in several instances, to be co-managed by the State and utilities.

Throughout review of the administrative and program options, Staff was guided by the belief that there should be equitable access to energy efficiency for all customers throughout New Jersey regardless of address, housing type and tenure, socio-economic status, or utility territory. The recommendations within this proposal for administration either by the State or utilities or for co-managed administration reflect the priority of equitable access in addition to other energy efficiency best practices.

At the same time, Staff also acknowledges the need for flexibility in program design and delivery to provide space for innovation. These priorities, combined with the need for simplicity in customer and contractor participation, ultimately guided Staff's recommendations regarding the administration of programs. While prior approaches to administration might suggest that programs which are best implemented statewide must also be State run (and would therefore foreclose the opportunity for utility administration), Staff believes that the goals of consistency can be met through coordination among utilities in designing programs for key sectors. To this end, Staff recommends that the utilities work together to design consistent core programs. While flexibility will be afforded through additional initiatives and "adders" to core programs, Staff believes that chief among the policy goals of the State should be ensuring a uniform base set of programs among all utilities for the benefit of residents.

In order to most effectively reach populations and serve all markets while maintaining a watchful eye on policy objectives, particularly as it relates to delivery to low-income communities, the State and utilities will co-manage several programs. Co-management will allow day-to-day management and delivery of programs unfettered by many overly burdensome State administrative constraints while ensuring that the State plays an enhanced oversight role and collaborates regularly to make certain that critical policies are met.

Cost Recovery

Energy efficiency will play a critical role in meeting our clean energy targets. The CEA, recognizing this key role, sets forward requirements to ensure that utilities are incentivized to meet the ambitious targets. Staff believes that, while required by statute, energy efficiency programs will not ultimately be successful if the proposed mechanism negatively impacts a utility's economic bottom-line or if such programs are considered a less attractive investment than traditional infrastructure. As such, Staff seeks to carefully balance aspects of cost recovery to ensure utilities are appropriately incentivized for playing a key role in energy efficiency delivery while, at the same time, costs are controlled to protect ratepayers.

Traditionally, utilities are able to earn higher profits by increasing sales or building more infrastructure. Energy efficiency may reduce the ability of the utilities to sell gas or electricity. This creates a clear conflict between utility financial objectives and energy efficiency goals. Generally, Staff has been guided by the concept that there are three crucial regulatory tools needed to align the utility business model with energy efficiency. The three tools include the recovery of program costs, the recovery of lost revenues due to efficiency programs, and earnings opportunities for efficiency investments through performance incentives. The proposed cost recovery framework incorporates each aspect in order to align the State's utility business model with the aggressive energy saving targets set forth in the CEA.

Staff recommends a cost recovery mechanism for New Jersey's energy efficiency transition which incorporates recovery of the energy efficiency expenditures, amortization for program investments, a lost revenue mechanism, and a performance incentive and penalty structure tied to the achievement of targets. Utilities will be able to have recovery "of and on" their costs, assuming they meet performance targets. The proposed recovery "on" the energy efficiency spend is modified compared to Staff's most recent cost recovery proposal (ROE minus 100 basis points weighted against the average cost of debt versus the prior proposed basis point reduction of 200 basis points) to reflect the reduced risk associated with guaranteed, contemporaneous recovery of program investments; the ability to earn that return over the amortization period; and the addition of the lost revenue mechanism. As the State embarks on a transformational shift toward clean energy and electrification, Staff's recommendation attempts to balance the goals of the CEA and EMP with both the proposed utility cost recovery mechanisms and the rate impacts on customers. Staff expects the detailed proposals set forth in this document to be the subject of ongoing review, dialogue and revision as all stakeholders work together to achieve the Clean Energy future envisioned for the State.

Staff heard from stakeholders that the Conservation Incentive Program (CIP) currently in place for two gas companies successfully addresses the need for utility energy efficiency incentive and noted concern that this current program might be suspended. This straw proposal clarifies that staff does not recommend eliminating the CIP. Staff specifically seeks input on the proposed method of lost revenue adjustment compared to or combined with a CIP and further seeks input on CIP design for EDCs.

Application of Utility Targets

Within this straw, Staff recommends a process to incentivize utilities to meet the CEA-required targets while achieving key policy priorities by setting performance targets and establishing a performance review process. This performance review sets utility specific targets in key areas which will incentivize certain types of energy savings by weighting them, and sets up specific targets (in MWh or therms) for each utility so that targets are transparent and performance can be measured for the purposes of incentives and penalties.

In order to support the energy use reduction goals outlined in the CEA, the BPU is tasked with developing utility-specific, energy-use reductions targets and associated QPIs for each metric to review utility performance. Staff has proposed multi-factor metrics to ensure that utilities are incentivized to achieve certain types of savings (i.e., low income, cost effective programs, small business, etc.,). This will ensure that utilities do not focus solely on achieving the greatest amount of savings without also appropriately prioritizing other, harder-to-reach, but very important, types of savings. The utilities will file programs directly in response to the established targets and metrics and will work with Staff to develop the QPI values associated with their program portfolio based on equations developed by Staff and stakeholders. In addition to programs run by utilities and co-managed programs, utilities will be able to count savings achieved by programs administered by NJCEP towards compliance with their overall energy use target; however, the performance incentives or penalties will not be based on savings achieved by NJCEP.

Notably, as with other sections in the straw, Staff recognizes the need for additional studies (including an updated market potential study) and information gathering and proposes to set in place an adaptive evaluation plan to ensure that targets set and performance measures utilized are regularly revisited and modified as necessary. This will be done primarily through a triennial review. The triennial review will facilitate long-term achievement of all cost-effective energy efficiency in each utility territory, and the process will allow stakeholders to further engage in order to modify the metrics, review the QPIs, and ensure that the program continues to evolve and improve.

Over the first few program years, Staff recommends consistent targets for electric utilities and gas utilities, separately, that allow ample time to ramp up to the benchmark minimums of 2% annual electric use reductions and 0.75% annual gas use reductions by program year five. The “Energy Efficiency Potential Study” demonstrated that there is ample opportunity throughout New Jersey for the utilities to achieve or exceed these initial savings targets. Following additional utility territory-specific research, studies, and data collection, the energy use reduction targets may differ significantly by utility territory, based on demonstrated sector-specific potential.

Evaluation, Measurement, and Verification

Central to the long-term success of the program is the evaluation, measurement, and verification of the energy savings and outcomes of the energy efficiency programs. The straw proposal recommends program administration structures and methods for EM&V of the next generation of energy efficiency and peak demand reduction programs called for by the CEA. EM&V protocols currently in use will need to be greatly strengthened and enhanced. Staff suggests an initial approach to expanding existing EM&V methods to be uniform, consistent, and transparent, and capable of evolving with the implementation requirements of the CEA and advancements in EM&V best practices.

The task of EM&V under the CEA is constructing a framework to ensure that energy efficiency and peak demand reduction programs approved by the Board effectively serve the goals of the CEA and that energy savings from energy efficiency activities can be reliably documented and reported. Staff recognizes the need to use a common set of protocols for measuring energy savings and allowing stakeholder input in the process for developing key EM&V assumptions related to energy efficiency investments and outcomes throughout New Jersey, whether administered by the State or by utilities. This approach will ensure consistent measurement of outcomes, reporting, and evaluation standards. Effective EM&V processes will be bolstered by establishment of an ongoing working group to update and improve analyses and recommend program improvements or changes that are essential to meeting New Jersey's long-term energy efficiency and clean energy goals.

The CEA also requires that, in each utility territory, all cost-effective energy efficiency is achieved in the long run and notes that program cost-effectiveness must be evaluated during initial program filings at the portfolio level. To that end, Staff recommends that the State follow the lead of other states which are moving towards developing a primary test, to ensure that the programs designed and implemented by the State and utilities are both cost-effective and supportive of key policy goals. The use of a Resource Value Test (RVT) or other primary test will provide a single test that meets the needs of New Jersey, is transparent and replicable, and prioritizes the policy objectives of the State. While Staff intends that the State will continue to utilize the five existing tests in the interim and also as a "check" after the RVT or primary test is initially developed, the State will commence a process to gather stakeholder input to discuss whether to pursue development of this test and all policy inputs in the spring of 2020.

Filing and Reporting

The submission, collection, and review of information from both the utilities and the State on the plans, implementation, and performance of all energy efficiency programs will play a critical role in ensuring utilities are meeting the objectives of the CEA. This information must be consistent across all utilities and the State to ensure appropriate evaluation and comparisons. The information must be provided in an accurate and timely manner. Much of the information must also be publicly available to ensure awareness of the critical role energy efficiency plays in meeting clean energy goals while protecting that information which, by law or policy, must be protected from release. These components will be critical in ensuring that ratepayer dollars are wisely spent, in helping to evaluate programs, as well as to modify and continuously improve New Jersey's delivery of energy efficiency.

Staff recognizes the need to collect sufficient information to be able to evaluate the efficacy of the programs while only collecting information which will be useful in that evaluation. Staff also aims to ensure that the same types of information can be consistently collected across utilities and that the information can be easily and readily shared with the State. Due to current technology/software limitations, the State will look to the existing databases and systems that can be used for this purpose in the interim while considering other data collection processes in the future. Given existing filing and reporting requirements, Staff recommends an approach to transitioning from the existing reporting and filing structures and expects that additional changes may be warranted.

Next Steps

Staff provides this straw proposal which incorporates, modifies, expands on, and supersedes all prior straw proposals and comprises the entirety of Staff's current recommendations for the energy efficiency transition. Comments on this straw will help to shape final recommendations by Staff to the BPU, with action anticipated in May 2020. Staff requests comments from stakeholders on the entirety of the Energy Efficiency Transition Straw Proposal, even if duplicative of previously submitted comments.

Stakeholders interested in submitting written comments may file them electronically to **EnergyEfficiency@bpu.nj.gov** in PDF or Word format. Please include an email subject line of "EE Transition Straw." **Written comments must be received on or before 5 p.m. on Monday, April 13, 2020.**

Staff will welcome feedback and oral comments on the straw proposal on March 27, 2020 from 10:00am-1:00pm by webinar.

Background

In December 2018, in order to fulfill the CEA's requirements, the Board authorized the Division of Clean Energy (DCE) to enter into a contract with Optimal Energy, Inc. (Optimal) to complete a market potential study in order to determine the potential for energy efficiency in New Jersey and to develop recommendations consistent with implemented law. In developing the study, Optimal solicited data inputs from the state's electric and gas public utilities. The State also hosted four stakeholder meetings to solicit input throughout the development of the "Energy Efficiency Potential in New Jersey" study, which was issued as a draft for public comment on May 9, 2019. The Board accepted public comments on the draft potential study through May 16, 2019. All public comments[1] and the final "Energy Efficiency Potential in New Jersey"[2] study are available on the NJCEP website.

The Board solicited input related to the implementation of the energy efficiency and peak demand program requirements outlined in the CEA at a public meeting on February 1, 2019 and accepted written comments through February 15, 2019. [3] The public notice invited stakeholders to respond to a series of questions related to New Jersey's energy efficiency and peak demand reduction programs and provide recommendations regarding the future of these programs.

On May 28, 2019, following public input and feedback specific to the "Energy Efficiency Potential in New Jersey" study, the Board preliminarily adopted the energy savings targets for both electric and gas public utilities and the framework provided in the study, pending a final Staff recommendation. The Board also established the Energy Efficiency Advisory Group as an advisor to Staff. The Board further directed Staff to initiate a stakeholder proceeding to receive comments and recommendations from interested parties related to the framework recommendations in the "Energy Efficiency Potential in New Jersey" study and the establishment of energy efficiency and peak demand reduction programs to meet the targets outlined in the CEA.

During the summer of 2019, BPU President Joseph Fiordaliso, with input from other BPU Commissioners, appointed members of the Energy Efficiency Advisory Group in order to provide additional guidance to Staff, with particular emphasis on ensuring that Staff heard concerns and received recommendations from representatives of the utilities, the New Jersey Division of Rate Counsel, environmental advocates, and consumer organizations, including those representing both residential and commercial/industrial customers.

Following input from the Energy Efficiency Advisory Group, Staff initiated the next phase of stakeholder engagement and technical meetings in order to engage the public broadly on critical topics related to the next generation of energy efficiency and peak demand reduction programs.

Stakeholder Process

During the energy efficiency transition, Staff provided multiple opportunities for stakeholder input on a range of topics related to New Jersey's next generation of energy efficiency and peak demand reduction programs. Staff solicited input related to energy efficiency and peak demand program administration at a public meeting on

[1] Energy Efficiency Public Comments: https://www.njcleanenergy.com/files/file/public_comments/FY19/CombinedCommentsRev2.pdf.
[2] Energy Efficiency Market Potential Study, May 24, 2019: https://s3.amazonaws.com/CandI/NJ+EE+Potential+Report+-+FINAL+with+App+A-H+-+5.24.19.pdf.
[3] Public Notice: https://njcleanenergy.com/files/file/program_updates/Energy%20Efficiency%20public%20notice%201-22-19.pdf.

September 25, 2019 and invited stakeholders to provide written comments on that topic by October 4, 2019.[4] The Board solicited further input related to energy efficiency and peak demand programs, specifically regarding market needs and barriers to adoption, at a public meeting on October 30, 2019 and invited stakeholders to provide written comments on that topic by November 6, 2019.[5] The Board solicited input related to the evaluation, measurement, and verification of these programs and associated energy savings, as well as about filing and reporting requirements, at two public meetings on December 18, 2019 and invited stakeholders to provide written comments on either one or both topics by January 17, 2020.[6] Additionally, the Board hosted two technical working group meetings on cost recovery, on October 31, 2019 and December 13, 2019, and invited stakeholders to provide written comments on the topic by November 14, 2019 and January 3, 2020, respectively.[7] Staff also hosted a public meeting on the topic of Cost Recovery on January 23, 2020, with the comment period open through February 6, 2020.[8] Staff hosted a public meeting related to the application of utility targets on February 4, 2020.[9]

The extensive public input received throughout the energy efficiency transition process was of great value to Staff in understanding stakeholder perspectives and priorities; that input was instrumental in the formulation of three draft proposals which were also released for public comment. Staff released the draft "Energy Efficiency and Peak Demand Program Administration Straw Proposal" (Program Administration Straw) on December 20, 2019 and accepted comments through January 17, 2020. Two more draft proposals were subsequently released: the "Energy Efficiency Transition Cost Recovery Mechanism Draft" on January 22, 2020, which was discussed at the January 23, 2020 public meeting, with comments accepted through February 6, 2020, and the "Energy Efficiency Transition Application of Utility Targets Proposed Target, Metric, and QPI Structure Draft for Public Comment" on January 30, 2020. Staff solicited public input on the latter draft proposal at a public stakeholder meeting on February 4, 2020 and accepted comments through February 11, 2020.

Stakeholder Meetings and Feedback

Through the energy efficiency transition stakeholder process, Staff solicited public input on a range of topics related to the future of energy efficiency and peak demand reduction programs in New Jersey. In particular, Staff invited experts, as well as New Jersey program participants and service providers, to discuss how best to administer programs and what programs are critical to meeting New Jersey's energy savings goals while satisfying the State's policy objectives. These discussions have allowed Staff to better understand stakeholder priorities and perspectives in the context of energy efficiency and peak demand reduction best practices.

The first two stakeholder meetings in the energy efficiency transition focused on the subject of program administration and design. The first public meeting on September 25, 2019 engaged stakeholders on key program administration questions, and included discussion among panelists representing various stakeholder perspectives. The next public meeting on October 30, 2019 continued the conversation regarding program administration but focused on the programs themselves. Industry experts provided presentations and recommendations related to best practices and market barriers. Additionally, program service providers, including implementation contractors delivering both state and utility administered programs, provided diverse

[4] Public Notice: https://nj.gov/bpu/pdf/publicnotice/Energy%20Efficiency%20Stakeholder%20Meeting.pdf.
[5] Public Notice: https://njcleanenergy.com/files/file/public_comments/103019.pdf.
[6] Public Notice: https://www.nj.gov/bpu/pdf/publicnotice/EE%20Stakeholder%20Mtg%20Notice%20.pdf.
[7] Public Notice: https://njcleanenergy.com/files/file/103119.pdf; Public Notice: https://www.nj.gov/bpu/pdf/publicnotice/12.13.19%20EE%20Cost%20Recovery-%20Technical%20Meeting%20Public%20Notice%20.pdf.
[8] Public Notice: https://njcleanenergy.com/files/file/public_comments/Cost%20Recovery%20Mechanism%20Proposal.pdf.
[9] Public Notice: https://nj.gov/bpu/pdf/publicnotice/EE%20Utility%20Targets%20Stakeholder%20Notice%20Feb%204_updated%20Notice.pdf

perspectives on energy efficiency and peak demand program strengths and opportunities to improve programs and program access.

Two technical meetings in the stakeholder process focused on the subject of cost recovery, lost revenues, and performance incentives and penalties. The first technical meeting introduced the pillars of cost recovery and posed a range of related questions to stakeholders. The second technical meeting on December 13, 2019 continued the cost recovery conversation but focused the dialogue on hypothetical cost recovery scenarios related to: asset/investment treatment, recovery period, lost revenues, incentives/penalties, carrying costs on over/under recovery, carrying costs on program investment, and potential rate caps and asked stakeholders for recommendations on the best combination of these elements. On December 19, 2019, Staff invited comments on additional hypothetical scenarios related to the same topics. On January 22, 2020, Staff released a draft proposal related to a potential cost recovery mechanism that was based on stakeholder input from the previous meetings and allowed Staff to further the discussion and solicit additional feedback. This proposal was discussed at a stakeholder meeting on January 23, 2020, with opportunity for stakeholders to ask questions and make recommendations related to the draft proposal.

On December 18, 2019, the Board held a public stakeholder meeting with an expert panel to discuss key elements of EM&V and solicited stakeholder comments. The panel presentations included information on how utilities implement EM&V in other jurisdictions, best practices for EM&V from a national perspective, and an overview of the National Standard Practice Manual (NSPM) and how it could be used to develop a primary cost test. The stakeholder discussion also addressed the need for consistency in measuring energy efficiency savings flowing from utility- and State-administered programs, whether through the use of deemed savings or project specific measurement techniques to achieve the requirements of the CEA. On the same day, the Board held a public stakeholder meeting focused on the subject of filing and reporting requirements. The stakeholder discussion focused on current and best practices regarding minimum filing requirements, reporting requirements, and potential tracking system(s). Stakeholders offered a range of helpful suggestions and recommendations based on their own experiences with reporting and tracking requirements.

The Board held a public stakeholder meeting on February 4, 2020 to solicit stakeholder input on the Utility Targets. The discussion focused on the development and implementation of utility energy use reduction targets, the use of multifactor metrics and performance review. Stakeholders provided feedback and asked questions regarding the proposal and the review of utility performance related to energy efficiency and peak demand reduction programs.

Staff reviewed and considered all stakeholder comments received throughout this process and stakeholder input was used to modify and mature recommendations. Based on Staff's review of recommendations from stakeholders and the Advisory Group, Staff herein proposes a framework for an energy efficiency and peak demand reduction program.

Advisory Groups, Working Groups, and Future Engagement

The Energy Efficiency Advisory Group and the Utility Working Group met with Staff multiple times throughout the energy efficiency transition to provide input and recommendations to Staff. Staff solicited input from these groups on each of the topics outlined in this proposal. Staff envisions that, moving forward, additional advisory groups and technical working groups will be developed in order to provide guidance and assistance in the implementation of the next generation of energy efficiency and peak demand reduction programs. The working

groups described in the "Proposed Additional Advisory and Working Groups" section below are described in further detail in their respective sections throughout this proposal.

Energy Efficiency Advisory Group (EEAG)

The Board established the EEAG in May 2019 pursuant to N.J.S.A. 48:3-87.9(f)(1), which called upon this group "to study the evaluation, measurement, and verification process for the reduction programs and provide recommendations to the Board for improvements to the programs." The role of the EEAG is to serve in an advisory capacity and share their expertise as well as further input from other stakeholders to provide insight on key elements of program implementation and evaluation for Staff's use in the development of recommendations to the Board. Members of the EEAG are appointed by the President of the BPU for two year terms and represent key stakeholder groups in New Jersey. The five members of the EEAG are: Mary Barber (Environmental Defense Fund), Stefanie Brand (NJ Division of Rate Counsel), Tom Churchelow (NJ Utilities Association), Vivian Cox Fraser (Urban League of Essex County), and Dennis Hart (Chemistry Council of NJ). The EEAG has participated in public stakeholder meetings and in multiple meetings with Staff and the Utility Working Group on topics related to the energy efficiency transition. Staff thanks each of the members for their input in developing this proposal.

Utility Working Group (UWG)

Staff plans on utilizing ongoing Utility Working Group (which is comprised of members from each of the utilities and Rate Counsel) meetings to further refine program design details. There will also be ongoing stakeholder opportunities for the public to provide feedback coordinated by Staff.

Proposed Additional Advisory and Working Groups

Comfort Partners Working Group (CP WG): The CP WG will continue in a manner similar to its current operations wherein representatives from all utilities, as well as Staff, collaborate to oversee all elements of the management and delivery of the Comfort Partners program and utilities perform all day-to-day operations.

Multifamily Working Group (M WG): The M WG will consist of representatives of the utilities and the State who work together to develop program design and manage the delivery of the multifamily sector program, including oversight of implementation contractor(s) and program guidelines. The goal for this working group is to ensure that there is equitable access for all customer classes and adequate program support throughout program implementation.

Equity Working Group (EWG): The EWG will be comprised of stakeholders from representative organizations across the state familiar with the intersection of energy, equity, and health issues, as well as representatives from each of the other working groups. This working group will be responsible for developing recommendations for integrating equity metrics and approaches in energy efficiency and peak demand response programs for utility-run, State-run, and co-managed programs.

Evaluation, Measurement, and Verification Working Group (EM&V WG): The EM&V WG will be comprised of utility-based and state program evaluators, the Statewide Evaluation Manager, Staff, Rate Counsel, and other stakeholder representatives and will be responsible for generating EM&V inputs, worksheets, and assumptions. The EM&V WG will also be responsible for sharing associated data streams and results, and tracking best practices from other jurisdictions.

Marketing & Communications Working Group (MC WG): The MC WG will consist of both the State and utilities, as well as any relevant consultants/contractors, and will,work to promote the programs, the overall NJCEP brand (utilized by all program administers), and the larger benefits of participation in energy efficiency and peak demand reduction programs.

Products Marketplace and Recycling Working Group (PMR WG): The PMR WG will manage the Energy Efficiency Products Marketplace and Appliance Recycling programs, which will facilitate product availability, offer opportunities for environmentally friendly recycling, and reduce market confusion through a single statewide platform, while ensuring that customers across all service territories have equal and adequate access to energy efficient products.

Process and Timeline

Overview

The following table describes the program timeline for energy efficiency and peak demand reduction programs. Appendix B includes a more detailed timeline, including for evaluations and studies, and for filing and reporting.

Fiscal Year (FY)	Program Year	Program Cycle
Annual Filings	All	Utilities file required annual updates on cost recovery and performance filings (Utility Portfolio Report)
July 1, 2019-June 30, 2020		May 2020: Board Order(s) on new programs
2021		Late Summer 2020: Utilities submit program filings April 2021: Anticipated Board action on filings
2022	1	July 2021: New energy efficiency/peak demand reduction programs begin (new program cycle)
2023	2	Triennial review
2024	3	Utility program filings
2025	4	New program cycle begins
2026	5	Triennial review
2027	6	Utility program filings
2028	7	New program cycle begins
2029	8	Triennial review
2030	9	Utility program filings
2031	10	New program cycle begins
2032	11	Triennial review

Triennial Review

Programs will operate on a three-year cycle, which will commence following a *triennial review.* The triennial review will be informed by a preceding stakeholder-driven process and will establish the targets, metrics, weighting structure, and performance penalty/incentive structure for the following five years. The triennial review will include recommended evaluations such as energy consumption studies, process evaluations, market potential analyses, etc., which will provide the opportunity for stakeholder input ahead of Board deliberation related to utility targets and program requirements. During the triennial review, the Board will set targets for the following three-year program cycle, with subsequent years 4 and 5 established as preliminary. The following elements will be established during each triennial review:

1. Overall Utility-Specific Annual Energy Use Reduction Targets
    - NJCEP Annual Energy Savings Targets
    - Utility Program Annual Energy Savings Targets
2. Metrics
3. Weighting Structure
4. Cost Recovery Mechanism
5. Performance Penalty and Incentive Structure

Years 1 – 3

Utilities will be required to submit three-year filings which must include the specific core programs and initiatives outlined in the Program Recommendations section. Each three-year filing will also include an annual portfolio report. These evaluations/reports are expected to include quantitative and qualitative assessments of the portfolio's performance and any significant changes the utilities would like to make for the next program cycle. Utility progress towards targets will be evaluated annually in order to assess incentives and penalties and cost recovery.

Years 4 – 5

Targets for utilities for years 4 and 5 will be established preliminarily in the first filing in FY 2021. The first triennial review will occur in FY 2024, in the third program year. Years 4 and 5 targets will be formally established at that point.

Program Administration

Overview

The administrative structure for energy efficiency and peak demand program delivery plays a critical role in achieving energy savings and the energy policy goals set in the Clean Energy Act. The CEA emphasizes that the State's energy goals should be achieved in a way that both benefits all residents and does so in a cost-effective manner. Equitable access to energy efficiency options for customers throughout New Jersey regardless of address, housing type and tenure, socio-economic status, or utility provider is key to meeting this priority. Critical administration efficiencies must be achieved, and close and active collaboration among the utilities and between the State and utilities will be required. Programs must be designed to meet policy priorities in the most effective manner. These priorities, combined with the need for simplicity, consistency, and coordination, ultimately guided Staff's recommendations regarding the administration of programs.

Program Administration Framework

The varying target sectors and objectives of each energy efficiency and peak demand program create opportunities for program administrators (PAs), either utilities or the State, to leverage their strengths in order to maximize residents' and businesses' access to each program's benefits. The current suite of energy efficiency programs offered through New Jersey's Clean Energy Program and the state's utilities is strong, but there are significant opportunities to leverage the strengths of each PA in order to enable greater energy efficiency and peak demand savings in New Jersey.

Staff considered the following guidelines in determining the appropriate administration mechanism:

- Core programs (a main set of energy efficiency and peak demand reduction programs covering all customer sectors that all New Jersey ratepayers should have access to) are best implemented with strong statewide coordination among utilities and between utilities and the State, to ensure consistency of program offerings throughout New Jersey.
- Mass marketing strategies should be developed on a statewide basis and coordinated with direct marketing efforts.
- Current and historic customer energy data should be easily and fully accessible to each customer and to parties they wish to disclose data to, and advanced metering infrastructure should be utilized in order to understand consumption patterns and identify energy saving opportunities.
- Programs that address equity considerations are best administered through coordination between the State and Utilities to ensure that opportunities are provided to underserved populations.

Staff proposes that the following program administration framework be utilized in order to best serve the ratepayers of New Jersey while considering the impact of energy efficiency and peak demand reduction programs on those ratepayers, ensuring equitable access, and reducing energy usage.

Utility Administration: Stakeholder comments have supported the benefits of utility-run programming which are based on existing customer relationships and that rely on utility data and systems. Certain utility administered programs are best delivered on a consistent statewide basis, whereas others may be effective when modified for each specific utility territory.

State Administration: As concluded by panelists at stakeholder meetings and through research into program best practices, the Division of Clean Energy, the state administrator of energy efficiency

programs (State), is best positioned to administer programs that require coordination with other statewide or state policy-led efforts. The State is also ideally suited to deliver those programs serving certain customer categories, such as governmental entities, or including certain market transformation activities, such as new construction building standards, which are best coordinated by a single entity with jurisdiction across New Jersey.

Co-managed Administration: Staff recommends that some programs be administered with close oversight and collaboration between the State and utilities, in order to leverage the strengths of both program administrators and ensure that all customers are served most effectively. Using the State's Comfort Partners program as a model for this approach, the utilities will manage the day-to-day operations of these programs and will collaborate to deliver them as effectively as possible. Utilities will have direct management over the program details; however, Staff will also have an oversight role to ensure that key priorities and policy goals are met.

Core Programs and Additional Initiatives

While maintaining statewide consistency of energy efficiency and peak demand reduction programs will ensure equitable access for all New Jersey residents and businesses, Staff also clearly heard from stakeholders that flexibility is required to allow for innovation in program design and technology in order to meet the CEA's energy savings targets.

To meet the CEA targets, New Jersey's utilities will have to significantly expand the scope of their respective energy efficiency and peak demand management program portfolios. However, as each service territory varies by geography, demographics, ultimate savings potential, and myriad other factors, utility filings will not be identical. More insights into the various market barriers to energy efficiency implementation across the state will be gathered through the Demographic Analysis to be completed in 2020. Additionally, some utilities in New Jersey have more experience running energy efficiency programs than others do and may be ready to implement a wider variety of additional programs. Striking a balance between flexibility and consistency will be crucial to advancing the goals of the CEA, ensuring that programs reach all customer segments, and limiting market confusion.

As such, the programs proposed in this document have been divided into core programs and additional initiatives. Each New Jersey investor-owned utility will be required to administer all core programs and may propose to the Board additional initiatives that they would administer, either individually or jointly.

Core programs refer to base programs that will be critical to meeting energy efficiency and peak demand reduction targets and will provide the main energy efficiency opportunities for all customer segments throughout the state. These core programs are critical to ensuring that all customers, regardless of socio-economic status, housing type, or utility provider, have access to a main set of energy efficiency programs that serve all major market needs. Whether administered by the State or utilities, these programs will be consistently available to ratepayers throughout the state.

Additional initiatives refers to auxiliary programs and program features which will enhance the core programs' success, explore new technologies, and/or focus on additional energy policy goals. These initiatives may include pilot programs that are not yet ready for statewide implementation but could be

viable in a specific service territory. Each utility's filing should include a peak demand management program as an additional initiative, either as a part of the first filing or in subsequent filings.

The "Additional Utility-Led Initiatives" section is not intended to be a comprehensive list of all programs that utilities could potentially administer but rather an outline of example initiatives that support and enhance the core programs and CEA energy goals. Utilities will have the opportunity to propose programs not listed in this document. Staff encourages utilities to collaborate and share successes and best practices in program design to develop the additional initiatives and, where possible, propose consistent additional initiatives in multiple utility territories - so that successful programs in one service territory can be expanded to other territories - and to research and develop for potential statewide implementation, as appropriate. Collaboration on program design will enable consistent program delivery statewide while granting utilities the flexibility needed to create and administer programs that suit their unique territories. It will also allow for supportive marketing which will benefit program adoption across the state.

Program Recommendations

The following outline of program recommendations describes the proposed distribution of energy efficiency programs in New Jersey according to which entity should be the primary program administrator, whether State-administered, utility-administered, or co-managed. More detail on these programs may be found in Appendix A.

In many cases, there are clear advantages to either a State- or utility-administered program, and Staff has sought to allocate programs according to where they will be most effectively and successfully implemented in order to reach the State's energy efficiency and clean energy goals. Other co-managed programs seek to combine the strengths and resources of both the State and utilities in order to deliver the best programmatic offerings for customers. Therefore, the following programs are organized by their intended reach, either statewide or by service territory, and also by which entity could maximize the benefits of each program. There are also several programs that could benefit from co-management between the utilities and the State.

- Utility-Administered Core Programs
    - Residential Sector: Home Performance with ENERGY STAR, WARMAdvantage/COOLAdvantage
    - Commercial and Industrial: Pay for Performance-Existing Buildings, Direct Install, SmartStart, Customer-Tailored Energy Efficiency Pilot, Large Energy Users Program
    - Multifamily: Existing Buildings Program
- State-Administered Core Programs
    - Residential: New Construction, Retail Products
    - Commercial and Industrial: Pay for Performance-New Construction, Combined Heat and Power Fuel Cells Program
    - Multifamily: New Construction
    - Local and State Government: Local Government Energy Audit Program, Energy Savings Improvement Program, State Facilities
- Co-Managed Core Programs
    - Low-Income Program (Comfort Partners)
    - Energy Efficiency Products Marketplace
    - Appliance Recycling Program

- Additional Utility-Led Initiatives
    - Behavior Programs, Strategic Energy Management (SEM) Programs, On-Bill Financing Options, Other Pilot Programs
- Additional State-Led Initiatives
    - Energy Codes and Standards Initiatives, Research and Development, Workforce Development, Public Education Initiatives-Energy Efficiency Curriculum, Community Energy Planning Grants
- Additional Peak Demand Reduction Programs and Initiatives
    - Both utilities and the State should have peak demand reduction programs; see Appendix A for more detail

Statewide Consistency and Utility Collaboration

Stakeholders commented that, in many cases, program delivery is most effective on a statewide basis in order to eliminate market barriers to participation (particularly informational barriers caused by customer or service provider confusion) and to reduce administrative burdens. Therefore, Staff emphasizes that utilities should work together to develop and propose a core set of energy efficiency programs that will be consistently available throughout the State. Differences in core program offerings could result in customer and service provider confusion so there is great value in the state's utilities working collaboratively on core program offerings; therefore, utilities will be required to file consistent programs.

While the utilities will file their program proposals individually and will not be required to have joint administration (including budgets, contractors, quantitative performance indicators, and cost recovery), it is critical that the program designs, including eligibility and evaluation requirements, are consistent across the state. Offering the same core programs across the state will streamline program offerings for specific market sectors, ensure effective marketing of the portfolio of programs available, encourage collaboration to develop and implement best practices across the state, and ease review of utility core program filings. Coordination among utilities should include the sharing of best practices, collaboration to develop enhanced program designs, evaluation criteria and consideration of new technologies. This core program coordination will also encourage the development of potential pilot programs that work across different utility territories and result in an easier adoption of new programs.

The core programs proposed in this document largely reflect the current program offerings across all market sectors in New Jersey. While the utilities should offer measures similar to those described below, they are not required to propose these exact core programs as they are currently designed and offered by NJCEP.

Following the filing of consistent programs, utilities should continue to collaborate in order to implement programs in a similar manner and should develop supportive processes, such as consistent procurement processes, procedures, requirements, and forms. This will be especially important in locations where gas and electric service territories overlap. Staff looks forward to recommendations on a consistent approach to addressing delivery of programs, and attribution of savings and cost for overlapping territories.

Program Delivery Options

Several models exist for delivering programs consistently statewide across utility service territories. The following summarizes a few key elements:

- Utility Delivery: The Board identifies the programs that must be delivered consistently statewide by all utilities, and the individual utilities each hire implementation contractors to implement the programs.

- Utility Coordination: Utilities coordinate regularly to develop consistent program requirements and similar incentive levels, and each utility delivers the program.
- Joint Procurement: One utility is nominated to manage the procurement of a single contractor to implement a program statewide for all utilities.
    - The lead utility could enter into a cost sharing agreement with other utilities; or
    - Implementation contractors can enter into a separate contract with each utility.
- There can also be hybrid approaches that combine elements of these options. For example, there could be utility coordination for running a program but joint procurement of specific functions (e.g., quality control, program evaluators, contractor screening).

Staff believes that, while all of these models may work for various programs, the key format for New Jersey is that the utilities collaborate, with input from BPU and stakeholders, on program design, requirements, etc. and deliver consistent core programs on a statewide basis.

Cost Sharing/Allocation of Savings

If a single or multiple implementation contractors are engaged to manage a program that serves more than one utility, a methodology will be developed to allocate expenses and energy savings across utilities. The following discusses options for allocating costs and energy savings:

- Prescriptive Rebates:
    - Rebates for purely electric measures and the associated energy savings would be allocated to the electric utility that serves the customer.
    - Rebates for purely gas measures and the associated savings would be allocated to the gas utility that serves the customer.
    - A methodology would need to be developed to allocate rebates and energy savings for measures that reduce consumption across multiple fuels.
        - One option is based on lifetime savings.
        - Another option is based on the NPV of the economic benefits.
    - A methodology would need to be developed to allocate fixed program administration costs. This could be based on the percentage of rebates allocated to each utility. For example, if 20% of the rebates were allocated to Utility A, 20% of the fixed administration costs would be allocated to Utility A.
        - Per application processing fees or inspection fees, if applicable, would be charged to the utility paying the rebate.

- Comprehensive Programs: This would include whole building programs, programs that address building shell measures, and any projects that save both electric and gas.
    - A methodology will need to be developed to allocate program expenses, including both incentives and program administration costs, to utilities.
        - The methodology could be based on various factors, including:
            - The cost of the measures installed, with electric measures allocated to the electric utility and gas measures to the gas utility; other measures such as insulation could be allocated based on either a formula or pre-determined percentage;
            - The net-present value of the energy savings; or
            - A pre-determined split.

Other Considerations

An additional factor that should be considered concerns programs with a financing component. Specifically, several utilities currently offer on-bill financing both to support NJCEP's Home Performance with Energy Star and

Direct Install programs and for several utility-managed programs. Staff believes that, for comprehensive programs that include a financing component, financing should be offered by a single entity, i.e., the financing component/loan should not be split between electric and gas utilities, and a single utility should offer to finance the entire project, even if the project involves both electric and gas savings measures. To do otherwise could create a significant impediment to program participation.

Contracting Resources

Utilities should consider pathways for appropriate parties to participate in their programs as developers, implementers, contractors, or other such roles as necessary. While it is important to maintain a competitive marketplace for these services, limiting market confusion is also a priority. By coordinating with other utilities and the Board, utility companies can strike a balance between these priorities through establishing statewide standards for contractors across service territories, coordinating trade ally support, and standardizing contractor training materials wherever possible. This can also help to lower barriers and to encourage historically underrepresented and disadvantaged businesses to become service providers.

Program Flexibility

Stakeholders emphasized the need for programs to be nimble in responding to market shifts without undergoing a full regulatory proceeding. While strong oversight of programs must also be maintained, Staff recommends allowing utilities to react quickly to changing market conditions, within reasonable limits, to ensure that programs are best able to work toward achieving the savings goals set forth in the CEA. In order to provide the flexibility stakeholders have called for, Staff proposes that utilities be permitted to make certain adjustments to utility-led programs, subject to the following conditions. The same conditions will apply to modifications to co-managed programs:

- The addition of new programs and the discontinuation of programs will require full Board approval.
- Any proposed budget modifications to programs for LMI customers and small businesses will require full Board approval.

Utilities will be permitted to make minor adjustments to program design with Staff approval. Staff welcomes stakeholder input into the types of adjustments. Staff will be required to approve or deny the proposed change within thirty days of submission. The proposed time limit aims to balance the need for utilities to quickly implement modifications to adapt to changing market conditions with the need for Staff to maintain adequate oversight over programs. This time limit will also apply to budget and incentive modifications that require Staff approval.

Budget Shifts Within a Sector

Sectors are any grouping of programs that focus on similar target markets, including but not limited to: residential, commercial and industrial, multifamily, low income, and small business. Utilities will be able to shift budgets up to 10% of the individual program budget between or among programs in the same sector with Staff notification; this applies only to an individual utility's budget in situations where the shift would not result in a change to the utility's overall budget. For budget shifts ranging from 10%-20% between or among programs within a sector Staff approval will be required. Proposed budget shifts exceeding 20% will require Board approval. The percent impact on each program will depend on program size, so these required bounds are for the largest absolute percent impact as program budgets are changed. Staff requests comment on a yearly cap on budget modifications between programs.

Budget Shifts Between Sectors
Staff approval will be required for budget shifts up to 5% between sectors. Proposed budget shifts exceeding 10% between sectors will require Board approval. Budgets for Low-Income programs and Small Business programs will not be eligible for shifting between programs or sectors without Board approval. Percent impact on each sector will depend on sector size, so these required bounds are for the largest absolute percent impact as program budgets are changed.

Incentive Adjustments
Utilities will be able to adjust energy efficiency and peak demand management measure incentives up to 20% of approved levels with Staff notification. Adjustments ranging from 20%-40% will require Staff approval. Any adjustments exceeding 40% of approved levels will require full Board approval.

In addition to notifying the Board of all proposed changes, utilities will be expected to collaborate on proposed changes and will be required to notify Rate Counsel along with Staff of any intended program changes, including program modifications, budget shifts, and incentive changes. The notification requirement serves to ensure that due diligence was exercised in developing the modifications and that Rate Counsel has an opportunity to raise concerns or questions. Filings must be updated to reflect the minor program modifications, budget shifts, or incentive adjustments listed above at least during the next required filing. To implement more significant program, budget, or incentive changes, utilities will be required to submit mid-term adjustment filings to the Board for approval.

Marketing
Effective marketing and education of energy efficiency and peak demand management programs is necessary to increase program participation and therefore energy savings. Stakeholders have noted that consistent marketing has a significant impact on increasing program participation in the State. Previous brand awareness campaigns and direct marketing efforts have demonstrated the ability to increase customer engagement. Marketing efforts should be directed at the specific needs and solutions for various sectors and customer classes in order to be the most impactful.

Based upon the successful examples of joint marketing in other states, Staff recommends a collaborative, co-managed approach between the State and the utilities to ensure that program offerings are marketed and communicated clearly and have maximum reach to all customers. A coordinated marketing approach which facilitates State and utility collaboration will foster consistent messaging, provide cost savings, and afford a single, unified platform to reduce market barriers. One brand will also help alleviate customer confusion and provide advantages through government rates to state entities.

The State and utilities each have particular advantages in marketing and together can offer an enhanced marketing strategy on energy programs. As a state agency, the BPU can gain operational efficiencies and increased program visibility through collaboration and marketing coordination with other state agencies such as the Department of Labor and Workforce Development, Department of Environmental Protection, the Division of Community Affairs, and the Department of Education. Additionally, the State has the ability to maximize marketing impacts where media markets extend into multiple utility territories.

Utility marketing efforts built on direct access to customer data and existing customer relationships yield unique advantages. Utilities can target specific customers with customized messaging, which results in less expensive

participant acquisitions. Successful marketing and market penetration requires a coordinated effort between the State and the utilities. To this end, the State will hold an ongoing Marketing and Communications Working Group (MC WG) to discuss marketing research, campaign plans, implementation, and results. The goals of the working group will be to:

- Collaborate on marketing and education ideas and plans;
- Create operational efficiencies between the utilities and the BPU;
- Promote cross-marketing efforts among utilities;
- Ensure consistent messaging;
- Develop a style guide;
- Reduce costs; and
- Inform best practices.

Overall brand awareness will be conducted at the state level. The State will work closely with the utilities to ensure that mass marketing efforts are conducted in each territory and promote "New Jersey's Clean Energy Program." Messaging and creatives will include the NJCEP logo and the utilities' logo (when applicable). Each utility will be responsible for directly marketing its program offerings and incentives but will ensure brand awareness by incorporating the State where possible. Branding guidelines will be developed through discussion and collaboration of the marketing working group.

Marketing will be approached in partnership, with overall branding and awareness of energy efficiency programs established and guided by the BPU. These efforts will continue to promote the programs, the overall NJCEP brand, and larger benefits of participation in energy efficiency and peak demand reduction programs. Under this approach, utilities will lead direct marketing to their customers.

Program Budget and Funding

Staff is developing cost scenarios by sector in order to understand the potential cost per kilowatt-hour and cost per therm that it will take to achieve the energy use reduction targets of 2.15% and 1.10% for electric and gas utilities, respectively (more detail on these goals can be found in the Application of Utility Targets section of this proposal). The preliminary cost to achieve projections can be found in Appendix E and final cost to achieve projections will be used to evaluate cost effectiveness of program portfolios and to evaluate budgets proposed in the filing process. Utility filings should include cost projections within the range detailed in Appendix E (and staff specifically requests comments on this concept and these proposed ranges) or submit justification supporting their nonconformance.

The State-administered and co-managed programs will be implemented using SBC funds, which are collected by utilities through their rates.[1] Utility-administered program costs associated with operations and maintenance will be expensed annually, whereas program investments will be amortized over time. More detail on this can be found in the cost recovery section of this proposal. Currently, the State offers some NJCEP programs through funding provided by the U.S. Department of Energy, and Staff will look to this source of funding for future program cycles as well. Additionally, utilities should explore funding opportunities through bidding into the PJM market.

[1] More information on the SBC can be found here: https://www.njcleanenergy.com/societal-benefits-charge.

Equitable Access in Energy Efficiency

Guided by the Clean Energy Act, the Energy Master Plan, and various Executive Orders, including EO 23, as well as the principles established for the development of the energy efficiency transition, Staff seeks to ensure equitable access to energy efficiency and peak demand reduction products and programs for all residents in the state. Low income communities are often disproportionately impacted by not only environmental degradation and pollution but also face higher energy burdens. Traditional barriers to energy efficiency and peak demand reduction adoption in these communities have exacerbated these issues. Ensuring equity in New Jersey's energy efficiency and peak demand reduction programs has far-reaching impacts on reducing energy burdens and an increasingly-recognized role in the health of communities, in addition to impacting progress toward the State's energy and peak demand reduction goals. The CEA specifically calls for the Board to adopt programs that "ensure universal access to energy efficiency measures, and serve the needs of low-income communities," and the EMP establishes that the State's priorities in developing its statewide energy efficiency program are: affordability, equity, environmental justice, economic development, decarbonization, and public health. Staff has worked to highlight equity issues throughout the stakeholder process and seeks to increase engagement with interested parties on improving programs and delivery of programs to better meet the needs of all residents while reducing market barriers. Staff will kick off renewed attention to this goal with a focused stakeholder meeting and will seek to evaluate existing programs and provide recommendations for future program improvements.

The rescheduled "Equity in Energy Efficiency" working group meeting will be the beginning of a more robust engagement on the issues of equitable access to energy efficiency. To that end, Staff recommends a continued stakeholder process to address equity throughout the spring and summer of 2020. In addition to the Staff-recommended Multifamily Working Group and the Comfort Partners Working Group, Staff recommends consideration of an Equity Working Group (EWG) in order to ensure the integration of equity concerns into all aspects of program administration and implementation. This group will include representatives from each of the other working groups in order to ensure that there is a dedicated forum for integrating equity into each of these focus areas—Comfort Partners, Multifamily, EM&V, and Marketing and Communications. Particular attention will be given to the development and evaluation of equity related metrics to assess the magnitude of impacts and progress towards State goals, using traditional savings metrics, as well as other relevant data, including health impact assessments. The work of the Equity Working Group will be supported by a robust stakeholder process.

Application of Utility Targets

Overview

The Clean Energy Act makes clear the importance of achieving reductions in energy use in each electric and gas public utility territory and emphasizes an overall goal of achieving full economic, cost-effective energy savings based on the potential for energy efficiency in each utility's service territory. The CEA specifically requires that the Board establish mandatory energy use reduction targets for each electric and natural gas public utility, including quantitative indicators of program achievements, and establish a process for reviewing utility performance that includes the assessment of incentives and penalties to each utility based on their performance. In developing energy use reduction targets and a process for reviewing performance and applying penalties and incentives based on those targets, Staff adhered to the following principles:

- In the short term, targets should encourage program administrators to move towards implementing programs (in lieu of long negotiations over targets and terms); in the medium term, targets should meet or exceed CEA minimum mandates for savings; in the long term, targets should capture all cost-effective energy efficiency.
- Targets should be established with attention to the individual potential in each utility territory based on customer mix and demographics.
- Targets should be the net savings attributable to the efficiency programs and should encourage the capture of comprehensive savings associated with long-lived measures.
- All program administrators and stakeholders should have input on performance metrics.
- The process for reviewing the results of utility performance should be transparent, objective, and replicable.

Establishing discrete savings targets will allow the Board to hold utilities accountable for program performance and provide transparent goals that will allow the utilities, stakeholders, and Staff to work together to achieve the State's clean energy goals. This section recommends the process for determining utility and NJCEP targets and the process for reviewing utility performance in relation to these targets. This section also recommends a process for ongoing stakeholder feedback on setting targets and performance review of progress towards the targets.

Based on stakeholder feedback regarding the need for transparency, each element of this review process has been outlined in order to ensure that utilities and other stakeholders are able to understand and replicate the process for evaluating utility targets. Staff has proposed the following approach to establishing program goals and reviewing utility performance in order to further the State's clean energy goals, which include the goals of equity in program access, investment in longer term energy savings, and cost-effective program administration and implementation.

Structure and Process for Applying Utility Targets

Every three years and ahead of utility program filings, Staff will develop recommendations for the Board related to the program goals and expected utility performance for the subsequent cycle. These recommendations will include both policy-based metrics, which serve as goals according to which utility performance will be reviewed, and utility-specific targets, both of which will be developed through a stakeholder-informed review process

called the triennial review. These recommendations, for review and approval by the Board, will serve to indicate the goals that energy efficiency and peak demand programs should fulfill. Utilities will subsequently file both their program plans and their anticipated program achievements related to these goals in response to the Board's objectives.

Figure 1 below illustrates the structure for developing targets and assessing performance for each utility. Each step of the process is described in detail below.

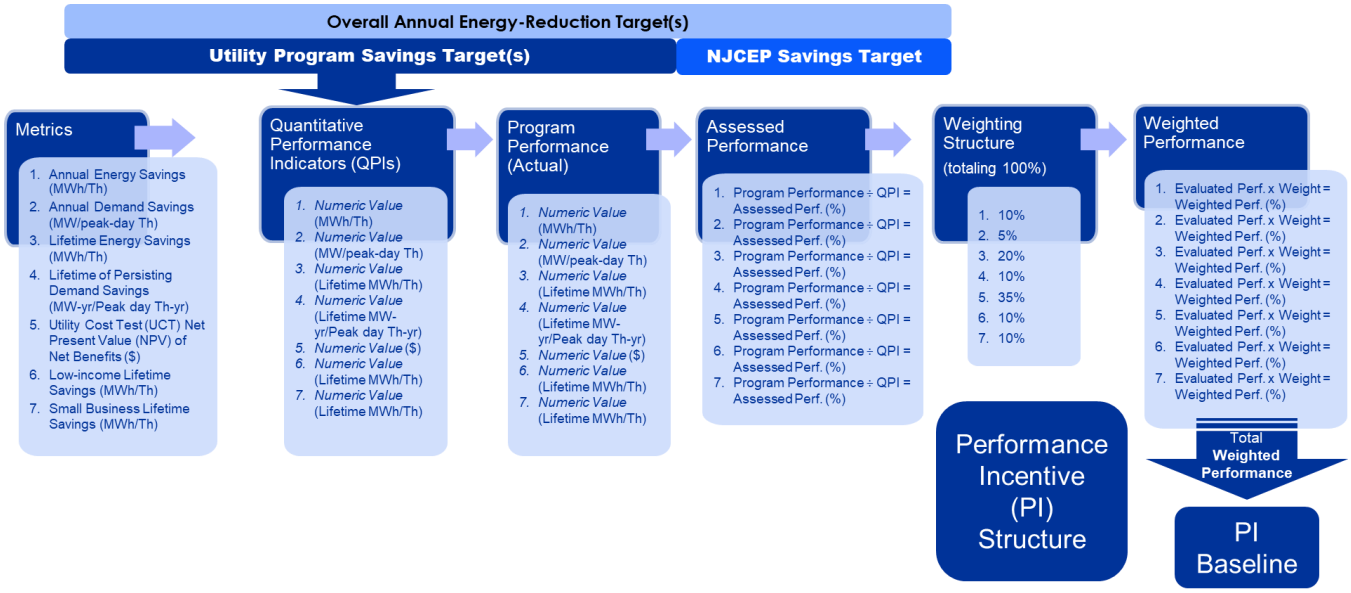

Figure 1: Utility Target Setting and Performance Assessment Structure

Establishment of Utility-Specific Targets

In order to fulfill the CEA's guidance that the Board "...review each quantitative performance indicator every three years" (N.J.S.A. 48:3-87.9(c)) as well as provide ample opportunity for stakeholder and utility input, Staff proposes the following processes for applying and regularly reviewing utility targets and performance towards targets.

Every three years, in advance of filings for the applicable three-year program cycle, Staff will facilitate a stakeholder process (the triennial review) to discuss the following elements for each of the subsequent five years:

1. Overall Utility-Specific Annual Energy Use Reduction Targets (for each utility and each energy source)
    - NJCEP Annual Energy Savings Targets (for each utility and each energy source)
    - Utility Program Annual Energy Savings Targets (for each utility and each energy source)
2. Metrics (consistent for all utilities)
3. Weighting Structure (consistent for all utilities)
4. Cost Recovery Mechanism
5. Performance Penalty and Incentive Structure

Triennial Review

The triennial review will include input from technical experts and recent studies, as well as an opportunity for stakeholders to review and provide comment on Staff proposals and to make specific recommendations for refining the targets, metrics, weighting structure, and performance penalty/incentive structure. Energy consumption baseline studies and market potential studies performed pursuant to the energy efficiency evaluation plan detailed in the EM&V section will be completed prior to the triennial review and factor into the review process. Utility and NJCEP targets will be adjusted through the triennial review based on the findings of these studies and in keeping with the CEA's requirements. The first triennial review will occur at the end of the first program cycle in FY 2023. Following this stakeholder process, Staff will develop recommendations to be reviewed by the Board.

The first three years' parameters will be established by the Board in the spring of 2020, ahead of the first program cycle. As parameters for years 4 and 5 of the program cycle will also be reviewed at this time, the targets, metrics, weighting structures, and incentive/penalty structures for those years will be established as preliminary and will be subject to additional review and modification in the following triennial review at the end of the first program cycle. The parameters for years 4 and 5 therefore indicate anticipated future targets in order to assist in preliminary, longer-term planning.[1]

Staff preliminarily proposed recommendations for the first five years post-energy efficiency transition program to stakeholders via a draft release for comment on Thursday, January 30, 2020 and discussed them with stakeholders at an open public meeting on Tuesday, February 4, 2020, with comments accepted through Tuesday, February 11, 2020.[2] The full proposal, representing all of the above-listed elements for program years 1 through 5, is Appendix C in this straw proposal.

Overall Utility-Specific Energy Use Reduction Targets

As described above, in advance of each energy efficiency and peak demand reduction program filing cycle and following a stakeholder process, the Board will establish utility-specific annual energy reduction targets for each program year, based on the potential for electricity and natural gas usage reductions in each utility territory. This is in keeping with the CEA's requirement at N.J.S.A. 48:3-87.9(c) that "…the board establish reasonably achievable targets for energy usage reductions and peak demand reductions…" The overall annual energy reduction targets for each utility will be set at reasonable levels that reflect achievable net annual energy usage reductions in each utility territory. The net savings will include savings from all initiatives in a utility's territory, but will account for the effects of free riders and spillover according to methods discussed in the EM&V section and with input from stakeholders. Per the CEA's requirements, they will include savings anticipated to come from programs administered by utilities, co-managed programs, and programs administered by NJCEP.

[1] The establishment of prospective goals for a five-year period will include the years encompassing the next three-year program cycle, as well as an additional two years after that cycle. Based on input from stakeholders, Staff believes that the inclusion of preliminary targets for years 4 and 5 will better allow for long-term planning and foster greater market stability. This five-year target setting will also provide preliminary indications to the public ahead of time regarding when the energy efficiency and peak demand achievements approach the point where "the reduction in energy usage reaches the full economic, cost-effective potential in each service territory, as determined by the board." (N.J.S.A. 48:3-87.9(a).) As the CEA clearly states, the Board will continue to establish energy use reduction targets for a given utility territory until such time as the full economic, cost-effective potential has been achieved in that territory. The establishment of forward looking, five-year targets will allow utilities and other interested parties to understand the future ramp-up or ramp-down of energy efficiency and peak demand reduction programs in each utility territory.

[2] https://www.nj.gov/bpu/pdf/Draft%20Utility%20Targets%20Pre-Mtg%20Proposal_1.30.pdf.

The overall net annual energy use reduction targets will be established as percentage goals and translated to annual megawatt hour (MWh, for electricity) and annual therm (th, for natural gas) goals. The calculation will be based on the application of the percent savings targets to each utility's average annual usage over the relevant period. The CEA states that the applicable load is the "…average annual electricity usage in the prior three years…." (N.J.S.A. 48:3-87.9(a).) In any given year in which a target is set, the percentage target reduction is based on the average load of each of the prior three years. If the required annual energy use reduction for a utility is 2% in 2026, the applicable load to apply the percentage would be the average of annual usage for years 2023–2025. In this way, the percentages are set ahead of time, and the average load is applied when the MWh and therm targets are calculated. If the target setting timeframe predates the calculation of year end load, the formula will use the three most recent complete years of data.

The overall net savings targets will then be separated into two parts: annual savings targets from programs administered by public utilities (including co-managed programs) and annual savings targets from programs administered by NJCEP, as detailed below.

NJCEP Annual Energy Savings Target

As part of the process for establishing overall annual energy reduction targets at the utility level, Staff recommends that the Board determine the projected net annual savings from programs administered by NJCEP, by utility territory. These targets will be referred to as "NJCEP Annual Energy Savings Target(s)" and subtracted from the utility-specific overall energy savings targets in order to derive the "Utility Program Annual Energy Savings Target(s)."

Utility Program Annual Energy Savings Targets

The Utility Program Annual Energy Savings Target(s) will represent the portion of the overall net energy savings that is expected to be achieved by each utility, via programs administered by the utility and programs that are co-managed. These will be based on the overall utility-specific annual energy savings targets minus the annual energy savings anticipated to be achieved through programs administered by NJCEP.

Utility Program Annual Energy Savings Target(s) are the basis for developing the utility-specific QPIs for each metric, which are discussed below. Performance incentives or penalties will ultimately be derived based on the performance evaluated through the QPIs. Based on stakeholder input, Staff recommends that subsequent QPIs are based only on the Utility Program Annual Energy Savings Targets (not the overall annual savings target) in order to ensure that utilities receive incentives or penalties based only on the performance of programs that they administer or co-manage.

Metrics

A multifactor metric structure, in which more than one metric will be used to evaluate overall progress towards energy use and peak demand reduction targets and other important program goals, will be utilized for reviewing utility and NJCEP performance. Utility performance will be evaluated at the portfolio level, which will provide the necessary flexibility in the metrics for utilities to attain results among programs based on changing conditions and opportunities.

Multifactor metrics allow the Board and utilities to impact a holistic set of long-term program benefits, rather than focusing on a single metric which can create inequities in program availability and other energy efficiency benefits. These multifactor metrics will allow New Jersey to achieve energy efficiency in harder to reach sectors and to invest in longer term savings by valuing these objectives in a way that rewards utilities for achievement in these areas. Multifactor metrics are critical to achieving New Jersey's longer term clean energy and equity goals and will best position the State to achieve its energy goals while simultaneously promoting other core policy objectives, such as cost-effectiveness, equitable access for all customers, reasonable rates, and the need to achieve comprehensive and long-lasting energy savings.

Staff proposes seven metrics to be phased in over the first five years of New Jersey's next phase of energy efficiency and peak demand reduction programs:

1. **Annual Energy Savings –** Annual energy savings are the *ex post* evaluated net annual incremental savings for each individual year of the plan period, measured in megawatt-hours (MWh) for electricity and therms (th) for gas. This metric is specifically referenced in the CEA and is a common metric for jurisdictions seeking to encourage reductions in energy use to evaluate incremental savings.
2. **Annual Peak Demand Savings –** Annual peak demand savings are the *ex post* evaluated net annual incremental peak demand savings. During initial years, in metrics and in QPI results, demand savings will reflect only "passive" peak demand savings resulting from efficiency programs and will not include active demand management/demand response savings. The inclusion of active demand savings in the metrics may be considered in future program years. Multi-year peak demand savings are important for grid stability and the reliability of electricity and natural gas sources. They are measured in MW for electric demand and peak-day therms for gas.
3. **Lifetime Energy Savings –** Lifetime energy savings are the *ex post* evaluated net cumulative lifetime savings (net savings times measure life) of measures installed in the program year. Net lifetime savings are a factor in calculating the overall benefits of energy efficiency programs, and including this metric encourages the inclusion of longer-term, persistent energy saving measures in energy efficiency program portfolios. Lifetime energy savings also provide a better comparison to supply side options. They are measured in lifetime MWh for electricity and lifetime therms for gas.
4. **Lifetime of Persisting Peak Demand Savings –** Similar to above, lifetime demand savings are the *ex post* evaluated net cumulative "lifetime demand savings" of measures installed in the program year. Lifetime demand savings are calculated as the annual peak demand achieved times the number of years the peak savings are expected to persist. Lifetime peak demand savings are important to encourage longer-lasting measures and better manage grid implications. During the initial years, the lifetime demand savings metric will reflect only "passive" demand resulting from efficiency programs and will not include active demand management/demand response. Active demand savings may be included in future program years. Lifetime demand savings are measured in lifetime MW for electricity and peak-day therms for gas.
5. **Utility Cost Test (UCT) Net Present Value (NPV) of Net Benefits –** This metric will reflect the *ex post* evaluated NPV of the net benefits achieved during a given year, as determined by the UCT, and is measured in dollars. While the UCT is not proposed to be used for screening purposes in New Jersey, it is a useful and relatively easy metric to measure utility-specific costs and benefits of efficiency programs. While many additional benefits are provided by efficiency, beyond those in the UCT, there can be serious disagreement about the calculation of those benefits. The relatively shorter and more easily monetized benefits contained in the UCT avoid unnecessary contention while helping to maintain a focus on achieving efficiency at reasonable costs. With this metric, if a utility can achieve its goals with

fewer resources, it will achieve higher net benefits and attendant incentives. Therefore, this metric is the primary means of encouraging cost efficiency of operations.

6. **Low-income Lifetime Savings –** The low-income metric will be calculated as the *ex post* evaluated net lifetime energy savings captured during a given year from qualifying low-income programs. The metric is measured in lifetime MWh for electricity and lifetime therms for gas. A low-income metric is necessary to promote the equitable distribution of utility resources. Low-income programs are often more expensive on a per MWH or per therm basis compared to other programs, but the CEA is specific in its mandate of equitable service. The focus on savings instead of spending helps to ensure that low-income programs are achieving results that will translate into savings for low-income ratepayers. The focus on lifetime savings helps to promote measures with longer lives.
7. **Small Business Lifetime Savings –** Small business lifetime savings will be measured as the *ex post* evaluated net lifetime savings captured during a given year from small businesses. The savings are measured in MWh for electricity and therms for gas. Small business energy savings are typically more difficult and expensive to achieve, much like low-income lifetime savings; therefore, the inclusion of this metric will discourage utilities from seeking only easy-to-reach and larger customers where savings are typically captured through implementation of larger projects with longer lived and less expensive measures from a cost per lifetime unit perspective.

These metrics provide the factors by which utility performance will be evaluated. The metrics will be established ahead of utility program filings and will be consistent among all utilities. Ultimately, these metrics will serve as the basis for developing utility-specific QPIs. There will be opportunity to consider additional metrics via future triennial reviews in order to support additional program goals.

Staff anticipates that, throughout the spring and summer of 2020, Staff will engage stakeholders to assist in further defining each established metric and to establish the inputs and formulas for evaluating performance related to each. Staff will prioritize the development of definitions related to metrics one and three, based on the phase-in schedule below, recognizing that the schedule allows for additional time for stakeholder input related to the development of consistent measuring methods for the other five metrics.

Weighting for Metrics

Each metric will have an associated weight, which will represent the percentage of each metric contributing to the overall assessed performance. The weight for each metric will be used to determine the overall weighted performance for each utility. Weights are designed to encourage investment in programs that may not have the greatest cost or savings potential, but which support other important state policies on energy efficiency, including access to all New Jersey ratepayers. The weights of all metrics will total 100%.

The weighting structure will be developed and established for each program year along with the metrics framework. As noted above, the weighting structure will be consistent among utilities and established ahead of program filings. Further discussion of the application is in the “Utility Performance Review” section below.

Performance Indicators

Following each triennial review and the Board’s establishment of annual utility-specific targets, metrics, and weighting structures, utilities will be required to file program plans, including proposed values (QPIs) associated with each metrics.

Utility-Specific Quantitative Performance Indicators (QPIs)

The QPIs are the numeric values associated with each metric and represent the necessary annual achievements for each utility.

Following Board action, each utility will be required to propose QPIs in response to the established annual energy use reduction target(s), the established metrics, and the weighting. In advance of program filings, Staff will establish, in coordination with stakeholders, guidance (including appropriate algorithms) for utilities to develop QPIs. While much of the development of the QPIs will be objective and based on equations that include established factors such as loads, demographic characteristics, etc. for each established metric, the mix of measures and other factors that are based on each utility's proposed suite of programs will also be necessary inputs in the establishment of the individual utility QPIs. As a result, the QPIs must be established with input from the utilities and as part of program filings; the QPIs cannot be finalized ahead of utility filings.

Staff anticipates engaging stakeholders on detailed QPI guidance throughout the spring of 2020. Utilities will then file proposed QPIs as part of their program filings. Supporting documentation for how each QPI was calculated according to the guidance developed by Staff will be filed and reviewed as a part of the filing review process. The Board will review and finalize the suite of individual QPIs for each utility (and energy source) and for each program year as part of three-year program filings and the filing review process. The filing and reporting process and timeframes, among other details, are discussed later in this straw proposal.

Utility performance related to all QPIs will be utilized to calculate performance incentives and penalties. Utility performance related to the QPIs will be reviewed annually, along with other regular compliance and reporting requirements and filings for cost recovery.

QPIs will be developed for each utility separately for gas and electric usage in cases where a public utility is a provider of both electricity and natural gas. As noted, further discussion among stakeholder and Staff will take place to define the equations and inputs associated with each metric in order to allow the QPIs to be calculated objectively based on documented and assessed performance each time a new metric is adopted through the triennial review process.

NJCEP-Based Savings Target

QPIs associated with each metric will also be established for programs to be administered by the State through NJCEP. As with the utility targets, these QPIs will be established at the portfolio level and will reflect savings anticipated to come from NJCEP programs in each program year. QPIs will be proposed and established by the State through the normal NJCEP programs and budgets process, including opportunities for stakeholder input and Board review. NJCEP will report annual achievements related to these QPIs.

Utility Performance Review

Following each program year, utilities will be required to submit filings of program budgets, program performance for the recovery of costs, and calculations of any performance incentives or penalties (discussed in the next section). During this process, each utility's performance will be evaluated; this evaluation will be based on a review of its actual performance in comparison to each established QPI.

Actual Performance, Assessed Performance, and Weighted Performance

Achieved performance for each metric will be evaluated against the associated, pre-established QPI. The utility's performance divided by the expected QPI performance will be referred to as "assessed performance."

The assessed performance for each metric will be multiplied by the associated weight for each metric, resulting in the "weighted performance" for each metric. The weighted performances related to each metric/QPI will be summed (separately for each utility and each energy type) and will represent the "total weighted performance," where complete achievement of all QPIs, without exceeding performance indicators, would result in a total weighted performance of 100%. The benchmark of complete achievement (100%) of all QPIs is known as the *performance incentive baseline*.

The total weighted performance will be utilized to determine the appropriate incentive or penalty, based on the performance incentive and penalty structure proposed as part of the cost recovery proposal. In cases where a utility's total performance is greater than 100% (or above any buffer zone), that utility would receive an incentive; performance less than 100% (or less than any buffer zone) would result in a penalty. Both the incentives and penalties will scale according to the performance incentive/penalty structure and will be based on this measure of "total weighted performance."

Cost Recovery and Performance Incentives and Penalties

Overview

This section covers Staff recommendations regarding the cost recovery structure for utility-administered energy efficiency and peak demand reduction programs and proposes an incentive and penalty structure for the implementation of programs under the new administrative framework. New Jersey, through the CEA, has set aggressive targets for energy efficiency. Energy efficiency will play a critical role in meeting our clean energy targets. The CEA, recognizing this key role, sets forward requirements to ensure that utilities are incentivized to meet the ambitious targets.

Through traditional ratemaking, utilities are able to earn higher profits by increasing sales or building more infrastructure. Utility base rate cases will continue to be an important part of the rate setting process in New Jersey, as the periodic comprehensive review of utility revenues, expenses, and investments is crucial to ensuring that customers continue to receive safe and adequate utility service at just and reasonable rates. Energy efficiency could reduce the revenue of utilities for selling gas or electricity. This creates a clear conflict between utility financial objectives and energy efficiency goals. Generally, Staff has been guided by the concept that there are three crucial regulatory tools needed to align the utility business model with energy efficiency. The three tools include the recovery of program costs, the recovery of lost revenues due to efficiency programs, and earnings opportunities for efficiency investments through performance incentives. The proposed cost recovery framework incorporates each aspect in order to align the state's utility business model with the aggressive energy saving targets set forth in the CEA.

The following principles were considered in the development of the cost recovery mechanism:

- Create incentives to encourage active utility participation in energy efficiency investments;
- Provide protections to ratepayers;
- Manage the rate impacts related to the growth of energy efficiency investments; and
- Provide a review to ensure the cost recovery mechanism is meeting the CEA's goals.

Staff designed this cost recovery framework to balance the three components of the utility financial model in a way that will encourage utility energy efficiency investment while providing adequate protection to ratepayers.

1. **Program costs** associated with operations and maintenance will be expensed and included in a utility's annual true-up filing. **Program investments** will be amortized over a seven-year period. This treatment provides benefits to both the utility and ratepayer, as the utility will recover its energy efficiency program investments more quickly, while reducing the higher total interest cost and revenue requirement needed from ratepayers. Additionally, this will reduce the immediate rate impacts by spreading the cost of measures over a set period of time that better matches program costs with benefits.
2. **Revenue loss** will be addressed by allowing utilities to recover lost revenues that they can demonstrate were attributable to their energy efficiency and peak demand reduction programs. Lost revenues will be reviewed and recovered annually. Treating lost revenues in this way will ensure that utilities are incentivized to participate in energy efficiency, as they will be compensated for their specific distribution system revenue losses compared to the revenues the utilities can demonstrate would have been achieved from the higher energy sales in a "non-EE" regulatory environment. An earnings test will also be required in the event that the total bundle of energy efficiency program incentives significantly outperforms expectations, providing an additional layer of protection for ratepayers if utilities over-earn on their investment. Staff believes that the lost revenue mechanism proposed herein is consistent with

the plain language of the CEA and is the most appropriate way to address potential lost revenues at this time.

3. Utilities will be given an opportunity for earnings on their energy efficiency investment through a proposed **performance incentive and penalty structure**. The CEA requires the Board to set incentives and penalties and allows this to be done through an adjustment on the rate of return. Incentives and penalties will take the form of a return on equity (ROE) adjustment to energy efficiency program investment. A utility will earn a performance incentive in the form of a higher modified ROE if it exceeds (between 110%–150%) its established targets. A utility will receive a performance penalty in the form of a reduced modified ROE if it misses (between 50%–90%) its targets. A buffer zone (between 90%-110%) of target achievement will be established within which a utility will neither be awarded an incentive nor assessed a penalty but will receive a set return which has been modified (ROE minus 100 basis points weighted against the cost of debt) to recognize that risk is lower for these types of investments. If a utility fails to reach 50% of its targets, it will be deemed noncompliant and assessed a separate penalty that scales appropriately to the utility's size.

Investment Treatment

Program investments – that is, expenditures other than those incurred for operations and maintenance – will be amortized over a seven-year period. Utilizing this treatment is necessary as it provides benefits to both the utility and the ratepayer, as it allows a utility to recover costs incurred from energy efficiency program investments more quickly while reducing the higher total interest cost and revenue requirement needed from ratepayers. Additionally, this will reduce the risk of potential rate shock by spreading the cost of measures over a set period of time that better matches program costs with benefits. Amortization received nearly unanimous support from stakeholders, although some stakeholders noted the need for a longer amortization period.

The carrying cost for these investments will utilize the capital structure established in each utility's most recent base rate case, incorporating both (a) the cost of debt and (b) the return on equity ("ROE") less 100 basis points. The 100 basis point adjustment reflects the risk reduction associated with the contemporaneous recovery provided for by the cost recovery mechanism. The modified ROE was further amended due to response from stakeholders concerned that too sizeable a reduction in ROE would penalize utility energy efficiency investment. This newly proposed basis point adjustment recognizes the lowered risk/guaranteed return from these investments and the combined effect of the lost revenue mechanism. Staff suggests that this number would result in the appropriate Weighted Average Cost of Capital (WACC) for the return on these types of energy efficiency programs recovered through a surcharge. As expressed by some stakeholders, there is an inherent reduction in risk associated with the contemporaneous recovery available through this mechanism, where utilities are recovering a portion of costs as they are being incurred, as opposed to recovery in base rates where the utility may not be able to recover costs for years after they are incurred and that recovery is not guaranteed. The energy efficiency programs are also less risky than traditional infrastructure investment found in a base rate case because, generally, energy efficiency programs are not subject to the same project execution risks; will not undergo several years of construction with the associated regulatory lag; and do not face the traditional risk that the Board may find the investment not reasonable and prudent, or not used and useful. If these energy efficiency programs were accounted for in base rate ROE, which looks at a totality of utility investment not included in clauses, Staff expects that each utility's base rate ROE would be reduced.

This proposed mechanism is modeled on other states and districts such as Maryland and Washington D.C., which similarly allow for a return on energy efficiency investments, but modify that ROE based on the lowered

risk.[1] As New Jersey currently allows for return of and on energy efficiency investments and the CEA requires incentives and penalties, Staff recommends similar measures to ensure that we protect against potential over-earning.

In order to encourage reaching energy efficiency goals, initially, there will not be a cap, or a constraint, on the customer distribution rate or customer bill, a concept which was supported by many stakeholders. Rate impacts will be closely monitored, and a cap on either rates or on customer bill impacts may be instituted two years after the approval of energy efficiency transition programs.

Over and under recoveries will have a carrying cost of the 2-year Treasury bill rate plus 60 basis points. This will correct for errors in sales projections.

Lost Revenue Treatment

The proposal in this draft builds on what the State has learned through our experience with the gas Conservation Incentive Program (CIP), a limited decoupling mechanism currently in place in the state. The CIP is an incentive-based program that requires participating utilities to implement conservation programs funded by their shareholders. The CIP is designed to aid customers in reducing their costs associated with natural gas consumption and to reduce each utility's peak winter as well as design day system. The CIP program requires participating utilities to reduce gas supply related costs and allows the recovery of certain non-weather margin revenue losses that are limited to the level of gas supply cost savings achieved. At technical working group meetings, Staff heard from stakeholders that the CIP has contributed to shifts in utility behavior and culture, allowing for efficiency and conservation to be supported at all levels of utility management. While the below mechanism differs from the CIP because the CEA and the QPIs do not specifically call upon the utilities to shed capacity, Staff hopes that the limited decoupling mechanism, or "limited revenue adjustment mechanism (LRAM)" described below, will provide all utilities similar freedom to aggressively pursue and endorse energy efficiency. In response to stakeholder comments, Staff clarifies that utilities will be able to continue to utilize the CIP in addition to the limited decoupling mechanism described below. This treatment will be reevaluated after three years to ensure that there is not double-earning on energy efficiency savings due to the combination of these measures. It is not Staff's intention to remove a tool which is currently successfully used to lower costs and energy usage.

This proposed mechanism is a first step in the State's energy efficiency transition, and this treatment is expected to evolve over time. Given the rapidly changing market and the impacts of the 2019 EMP, electric vehicles, building electrification, and other federal and state market changes, Staff suggests this mechanism be reviewed three years after the approval of utility energy efficiency transition programs to ensure that this method is appropriately incentivizing energy efficiency programs. Staff has heard from stakeholders that this mechanism will not fully sever the throughput incentive and that it can create a challenge for utilities and evaluators to accurately quantify the demonstration of savings associated with implemented energy efficiency but nonetheless believes that the CEA clearly calls for utilities to file for the recovery of lost revenues attributable to the reductions in sales resulting from energy efficiency programs. Utilities will annually be able to file for and recover lost revenues in the amount that they can demonstrate were attributable to the utility-run energy efficiency and peak demand reduction program(s). The Board retains its ability to consider and approve other decoupling mechanisms. As utilities consider, prepare, and file future base rate cases, Staff expects that the

[1] Morgan, P. (2013, February). *A Decade of Decoupling for US Energy Utilties: Rate Impacts, Designs, and Observations.* Page 14, Retrieved from RAP: https://www.raponline.org/wp-content/uploads/2016/05/gracefulsystems-morgan-decouplingreport-2012-dec.pdf

utilities will include modified or alternative proposals for lost revenue recovery, up to and including full revenue decoupling. Staff's view is that such proposals are best reviewed and tested in the context of a base rate case, where all the relevant data is subject to the appropriate level of scrutiny and all of the inputs to the utility revenue requirement can be properly set.

Only lost revenues associated with the utility's distribution base rates will be recoverable through the LRAM. Utilities will be required to file a base rate case no later than five years after the commencement of an approved energy efficiency transition program in order to ensure usage projections are updated and to reset lost revenues. The utilities will be required to come in no later than every five years for a base rate case to ensure that usage projections are updated and to reset lost revenues. This proposed lost revenue treatment is intended to prevent energy efficiency transition program(s) from harming a utility's ability to pay for its fixed costs and to ensure that utilities are incentivized to actively pursue energy efficiency savings. This treatment is also designed to prevent accumulation of lost revenue related costs from multiple energy years and thus provide protection for ratepayers.

An earnings test shall be required, through which return on equity (ROE) shall be determined based on the actual net income of the utility for the most recent 12-month period divided by the average of the beginning and ending common equity balances for the corresponding period. For any energy efficiency transition portfolio approved by the Board, if the calculated ROE exceeds the allowed ROE from the utility's last base rate case by 50 basis points or more, recovery of lost revenues shall not be allowed for the applicable filing period. This will prevent utilities earning greater than their allowable return, established in the utilities most recent base case, from receiving lost revenues.

Performance Incentive and Penalty Treatment

The performance incentive and the performance penalty will both take the form of a return on equity adjustment applied to energy efficiency transition program investment, similar to the structure in place in Illinois. This is illustrated in the graphic "Figure 1."

There will be a performance penalty if a utility achieves between 50% and 90% of its QPI achievement. There will be a neutral area, or buffer, within which there will be no incentive awarded or penalty assessed, ranging from 90% to 110% of the QPI achievement. The WACC used as a utility's carrying cost will be comprised of (a) the cost of debt and (b) the return on equity less 100 basis points, as established in the Investment Treatment section. Based on stakeholder feedback, Staff has reduced the basis points reduction on the ROE from 200 to 100. There will be a performance incentive awarded if a utility achieves between 110% and 150% of the QPI achievement.

The performance penalty will scale linearly from the cost of debt established in the utility's most recent base rate case (if the utility reaches 50% or more of QPI achievement) to the return on equity established in the utility's most recent base rate case less 100 basis points. This lowered return on equity will be utilized as part of the carrying cost of energy efficiency transition program investment occurring in the following year.

The performance incentive will scale linearly from the return on equity established in the utility's most recent base rate case less 100 basis points (starting at 110% of QPI achievement) to the return on equity approved in the most recent base rate case (up to 150% of QPI achievement).

If the utility fails to reach 50% of the target, it will be deemed non-compliant and will be assessed a penalty of 0.75% of the base rate distribution revenue in the previous year. While some other states, such as Pennsylvania, have instituted set monetary penalties of tens of millions of dollars in order to assure a minimum level of achievement, it is more appropriate, with the great size disparity among New Jersey utilities, to pursue a mechanism able to incent larger utilities while not capriciously punishing smaller ones. This penalty will scale to utility size in a way that a set monetary penalty could not.

The performance incentive and penalty structure will be reviewed three years after the approval of utility energy efficiency transition programs, along with the utility's QPIs.

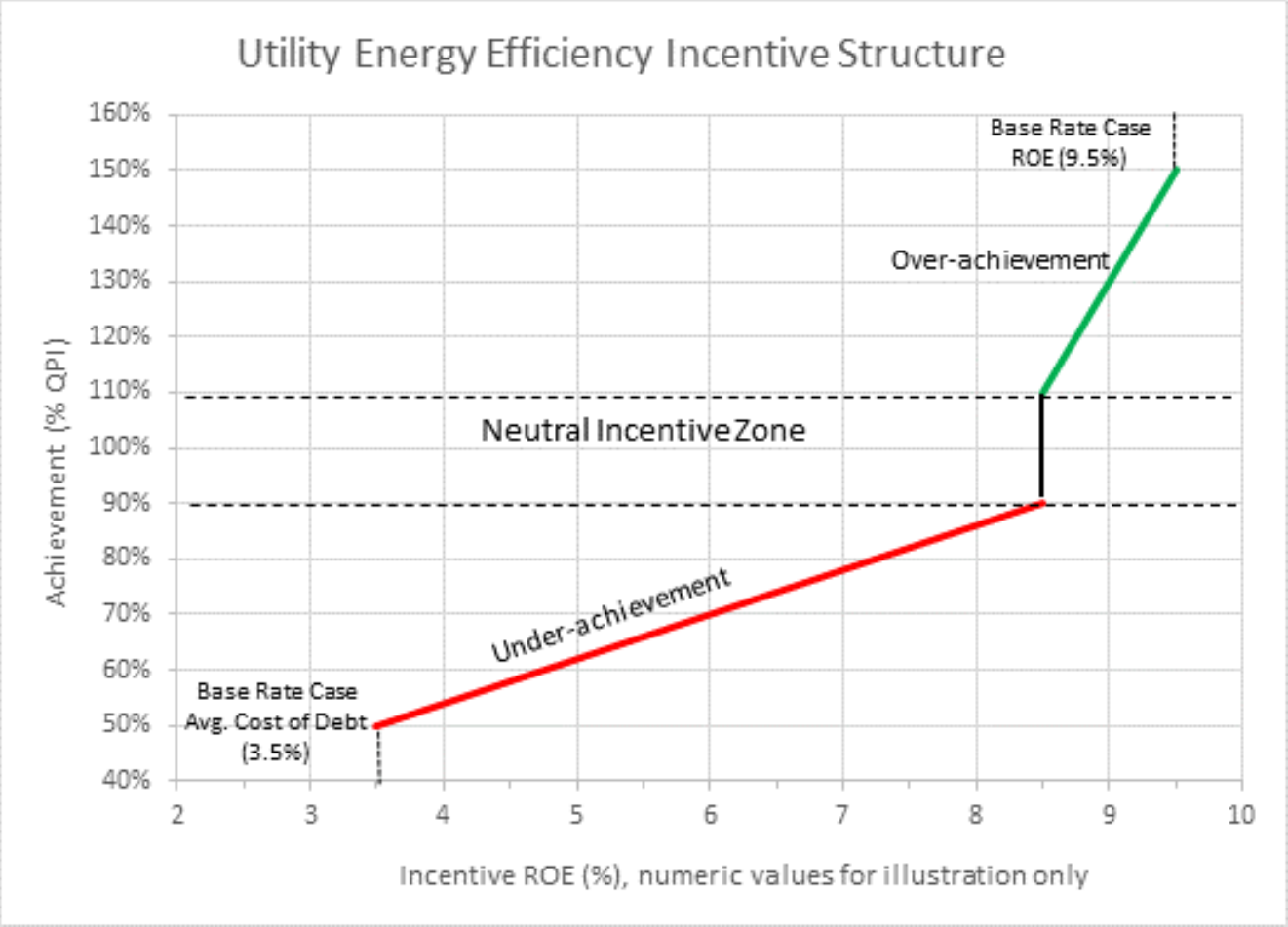

Figure 1. The values used in this graph are purely hypothetical in nature and used for illustrative purposes.

Energy Efficiency as a Resource

The utilities will use all commercially reasonable efforts to register, nominate, and/or bid each year's expected megawatt ("MW") reduction resulting from the energy efficiency transition program(s) into any and all PJM market(s) and/or programs for which the energy efficiency transition program(s) are eligible during the life of the energy efficiency transition program(s). Should the utility decide not to bid each year's expected MW reduction into the PJM markets, including for the core programs and any additional programs proposed, the utility must submit sufficient documentation explaining the reasons why it is economically infeasible to do so. This evaluation should cover considerations such as the effects of PJM's Minimum Offer Price Rule, PJM's rules for Energy Efficiency in the Reliability Pricing Model (RPM)[2], and the expected revenue from that participation.

[2] At a minimum this discussion should include analysis of the Adjustments to RPM Auction Parameters for EE Resources in Manual 18 § 2.4.5, the requirements for EE Resources in Manual 18 § 4.4, the Monitoring and Verification requirements in Manual 18-B, and the requirements of Schedule 6 § L of the PJM Reliability Assurance Agreement.

Evaluation, Measurement, and Verification

Overview

This section recommends administration structures and methods for evaluation, measurement, and verification (EM&V) of the expanded energy efficiency and peak demand reduction programs in response to the increased investments in those programs called for by the CEA. EM&V standards currently in use will need to be strengthened and enhanced. This straw proposal recommends an approach to transitioning existing EM&V that is consistent for all utilities and the State, as well as independent, transparent and replicable. These procedures will need to be clearly established but also capable of evolving as programs develop and particularly as best practices in EM&V for energy efficiency advance.

The CEA specifically requires that:

> Each…public utility shall file…implementation and reporting plans, as well as *evaluation, measurement, and verification strategies, to determine the energy usage and peak demand reductions achieved by the energy efficiency programs and peak demand reduction programs approved pursuant to this section. The filings shall include details of expenditure made by the public utility and the resultant reduction in energy usage and peak demand.* The board shall determine the appropriate level of reasonable and prudent costs for each energy efficiency program and peak demand reduction program. [Emphasis added.]
>
> [N.J.S.A. 48:3-87.9(d)(3).]

The essential task of EM&V under the CEA is constructing a framework to ensure that energy efficiency and peak demand reduction programs approved by the Board effectively serve the goals of the CEA, including the mandated reductions in energy usage, and that energy savings from energy efficiency activities can be reliably confirmed, documented, and reported. Staff recognizes the need to use a common EM&V framework and planning and development process for evaluating all energy efficiency and peak demand reduction programs throughout New Jersey, including those administered by utilities, the State, or co-managed, as well as for measuring and verifying program impacts. Further, for programs that are co-managed, or largely consistent throughout the state, or programs which cross utility boundaries, Staff recommends consideration of the use of shared contracted evaluators and asks for stakeholder input on this recommendation. This will provide significant economies of scale, as well as better support appropriate comparisons between utility efforts by using a single methodology and common assumptions. Similarly, Staff recognizes the importance of developing, with stakeholder engagement, key inputs for energy efficiency and peak demand reduction EM&V processes so that energy efficiency and peak demand reduction investments throughout New Jersey utilize the same assumptions. Effective EM&V processes bolstered by the efforts of a working group to update and improve analysis and recommend program improvements or changes are essential to meeting New Jersey's long-term CEA goals.

In addition to setting New Jersey on a path to 100% clean energy by 2050, as laid out in the EMP, New Jersey must meet energy use reduction targets set forth in the CEA in a manner that is consistent with the principles expressed in the CEA, EMP, and several Executive Orders. To this end, Staff has designed its recommendations with the following objectives in order to ensure robust evaluation, measurement, and verification of all energy savings and processes associated with programs administered in New Jersey's next generation of energy efficiency and peak demand reduction programs:

- Accountability given significant public funds dedicated to energy efficiency and peak demand reduction programs;
- Clear and concise reporting by all program administrators regarding energy savings, costs, cost effectiveness, and non-energy program impacts;
- A basis to improve the administration, design, and delivery of the program or portfolio;
- Continued improvement of the Protocols to Measure Resource Savings[1] so that they are comprehensive, encompassing most prescriptively offered energy efficiency measures, and as accurate as possible and reflective of market conditions, and to the extent appropriate, establish policies or procedures for estimating savings not covered by Protocols; and
- Objective measures of progress towards State policy and program goals, and performance incentive or penalty metrics.

A broad network of government agencies, utilities, program implementers, government-sponsored laboratories, academic institutions, and other entities have been studying energy efficiency and demand-side management for decades and offer significant technical resources to guide states in developing energy efficiency and peak demand reduction program structures and effective EM&V tools. The Board has actively engaged many national and regional experts during the CEA stakeholder process to ensure a robust discussion and exchange of ideas, including the Energy Efficiency Advisory Group.

Guiding Principles for Evaluation, Measurement, and Verification

EM&V entails a collection of methods and processes used to assess the performance of energy efficiency activities so that performance toward achievement of planned results can be determined and future activities can be more effective. As a result, evaluation studies help to optimize ratepayer contributions and inform and track results against legislative initiatives.

Staff heard from stakeholders that the guiding principles for EM&V are that the process should be:

1) *Independent* – Evaluators should be free of bias and not have a stake in the outcome of the evaluations;
2) *Structured* – The process should be structured so as to provide for regulatory oversight and timely integration of EM&V data into the portfolio cycle;
3) *Consistent and Predictable* – Program administrators and evaluators should operate from the same EM&V policy playbook and be held to the same standards;
4) *Transparent* – The process should be transparent, with opportunities for stakeholders to monitor the process and provide input;
5) *Resourced adequately* – A typical evaluation budget comprises 3% to 4% of an overall program budget and is sometimes higher in the initial years of program implementation.[2] Ideally, an evaluation budget is approved on a multi-year basis as an integral part of each three year efficiency plan, which facilitates an efficient program planning cycle, including multi-year evaluation studies.

[1] *New Jersey Board of Public Utilities New Jersey's Clean Energy Program Protocols to Measure Resource Savings FY2020*, approved July 10, 2019, https://www.njcleanenergy.com/files/file/NJCEP%20Protocols%20to%20Measure%20Resource%20Savings%20FY20_FINAL.pdf

[2] "CEE Annual Industry Report: 2017 State of the Efficiency Program Industry," March 21, 2018, https://library.cee1.org/system/files/library/13561/CEE_2017_AnnualIndustryReport.pdf

Based upon Staff's research into best practices, program evaluation includes both retrospective (results-oriented) and prospective (forward-looking) elements. This cycle of continuous evaluation is a best practice that integrates learned experience with program planning and implementation to foster a successful adaptive management approach to EM&V. Detailed descriptions of the evaluations and studies that Staff recommend for inclusion in an EM&V framework for New Jersey are provided in Appendix D.

EM&V Administrative Framework

An effective EM&V administrative framework will be a key component of the successful implementation of energy efficiency and peak demand reduction programs in New Jersey. In order to continuously improve EM&V practices in the state, ensure consistency, and provide continuous opportunities for input from stakeholders, an Evaluation, Measurement, and Verification Working Group (EM&V WG) will be established in the spring of 2020. The EM&V WG will bring together several entities to assist in the development of program evaluation plans and methodologies. The EM&V WG will be involved in providing guidance and input, but not direct oversight, of the planning, and continuous support and monitoring of evaluation activities and the recommendation of the development of consistent EM&V policies and procedures associated with New Jersey's energy efficiency and peak demand reduction programs. The following parties, at a minimum, will have a role in the ongoing EM&V WG:

- BPU Staff
- Utilities
- Statewide Evaluation Manager
- Independent Evaluation Contractors
- Division of Rate Counsel

When appropriate, these parties may also engage with any or all interested stakeholders on proposed technical documents and policies and procedures.

The framework described here outlines a consistent and transparent administrative approach to the development and review of EM&V policies, procedures, and methods, and provides a replicable process for guiding current and future energy efficiency and peak demand reduction programs, whether administered by the State, administered by the utilities, or co-managed. Staff believes it does so in a manner consistent with the CEA and incorporates stakeholders' recommendations.

Based on these considerations, Staff proposes that a collaborative EM&V WG, consisting of Staff, a Statewide Evaluation Manager, independent utility-based evaluators, and the State program evaluator and key stakeholders, best suits the current phase of New Jersey's energy efficiency transition and will support the ongoing engagement and development of an EM&V framework, plan, and collaborative agreement on specific evaluation methods, budgets, and priorities, where appropriate. In the implementation of this framework, individual evaluators contracted by New Jersey's public utilities and by the State will collaborate with and be overseen by a Statewide Evaluation Manager and Staff on specific EM&V tasks, with clearly delineated roles and responsibilities.

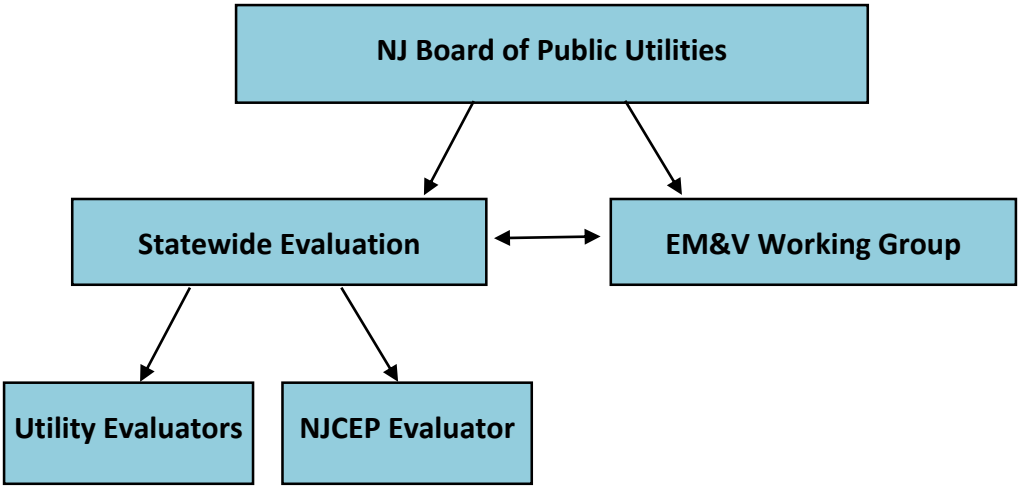

Figure 1: Proposed EM&V Administrative Framework

The EM&V WG will provide recommendations for consideration by the Board for 1) development of EM&V and related plans, policies, and procedures; 2) the evaluator RFP and selection processes; and 3) oversight of EM&V implementation activities. The EM&V WG will also be responsible for sharing associated data streams and results, and tracking best practices from other jurisdictions. While the role of the EM&V WG will be highly deliberative regarding key EM&V plans and decisions, Staff and the Board, as appropriate, will retain ultimate decision-making authority. The structure for the EM&V administrative framework is depicted in Figure 1.

Roles and Responsibilities of EM&V Entities

New Jersey Board of Public Utilities

The Board will be responsible for overseeing the Statewide Evaluation Manager and will maintain oversight authority over New Jersey's EM&V activities. Staff will convene and participate in the EM&V WG, as well as coordinate the development of evaluation plans and methodologies and collaborate with other evaluators. Staff will also be responsible for contracting with entities, as needed, for the evaluation of programs and ensure that contractors are participating, where appropriate, in EM&V WG activities.

EM&V Working Group (EM&V WG)

The role of the EM&V WG and its members is to help plan, and provide ongoing support and input on all EM&V-related activities in order to support the implementation and evolution of New Jersey's next generation energy efficiency and peak demand reduction programs. A Statewide Evaluation Manager will manage the agenda and activities of the EM&V WG, be responsible for managing the Working Group, and report to Staff on all EM&V WG activities. The group will convene monthly during the initial development of the energy efficiency transition rollout, then quarterly or more frequently as necessary in order to:

- Recommend policies and procedures to guide all aspects of the EM&V and cost-effectiveness analysis processes;
- Review avoided cost assumptions annually to be employed in cost-effectiveness testing;
- Review non-energy benefits annually for inclusion in cost-effectiveness testing;
- Review net-to-gross ratios annually;

- Provide recommendations on the development of methodologies, develop methodologies, provide ongoing critical support for, and for cost-effectiveness analyses and impact, process, market assessment, and as well as other evaluation results and discuss how best to integrate findings into program planning;
- Ensure adequate tracking of equity and other key data in energy efficiency and peak demand programs;
- Recommend improvements to existing and proposed energy efficiency programs based on evaluation study results; and
- Review annually the statewide Technical Resource Manual (TRM).

State Evaluation Manager

The statewide evaluator will oversee EM&V activities and findings produced by the individual Program Administrator Evaluators. With its independent role, the main responsibility of this entity is to ensure that evaluations are robust, accurate, and comparable across territories. Accordingly, the Statewide Evaluation Manager will:

- Participate and play a leadership role in the EM&V WG;
- Working with Staff, lead the WG in providing recommendations on the preparation of a master evaluation plan for each planning cycle, based on utility-, co-managed, and state-administered plans and programs and competing priorities for limited EM&V resources, as well as establishing reporting requirements and schedule;
- Lead development of QA/QC plans for evaluation study activities and results;
- Lead an ongoing collaborative review of evaluation work plans, budgets, methods, assumptions and draft and final evaluation studies, and make suggestions for future evaluations and programs;
- Collaborate regarding implementation data reporting plans in coordination with PAs and the BPU to ensure all necessary data are reported;
- Suggest possibilities for a statewide, publicly-accessible database with program data uploaded from the PAs; and
- Provide on-going management and oversight of the evaluation contractors throughout their engagement

Independent Evaluators

Independent Evaluation Contractors (IECs) will be responsible, in extensive consultation with the EM&V WG, for developing draft evaluation plans first for the entire program planning cycle, and then for annual adjustments. These evaluators will:

- Contribute to the development, updating, or amending of detailed evaluation plans, including data, methods, and reporting schedules and templates;
- Coordinate evaluation activities over time and across markets and utility territories;
- Collect primary program data;
- Conduct evaluations;
- Coordinate ongoing efforts with the WG on all aspects of WG's work;
- Perform cost-effectiveness analysis on program impact results;
- Make recommendations for future TRM updates;
- Assess PA performance toward metrics;
- Make recommendations for future program improvements and future evaluations; and

- Submit performance reports at the conclusion of a program cycle, including the multifactor metrics proposed in the "Application of Utility Targets" section of the straw proposal, recommendations for program changes and/or future programs (referencing impact and process evaluations, and market assessment data).

The proposed framework references stakeholder-supported elements of existing states' EM&V administrative frameworks with which some New Jersey utilities have direct experience – for example, the states of Maryland, Pennsylvania, and Illinois. A benefit of the proposed framework is that the PAs (i.e., New Jersey public utilities and NJCEP) will be able to closely link EM&V activities with program design and implementation in a timelier fashion than might otherwise be possible. This is expected to lead to facilitated progress toward CEA goals while also ensuring accountability for ratepayer impacts. At the same time, cost-effective and otherwise efficacious implementation of a responsibility-centered framework requires close collaboration among PAs, their contracted evaluators, and the Statewide Evaluation Manager, via the EM&V WG, within which context EM&V data will be broadly shared. It is important to recognize that whether EM&V activities should be conducted by the PAs (or their contractors) or by the Statewide Evaluation Manager (or its contractor) may vary with circumstance.

Evaluation Timeline

For the initial proposed three-year program cycle, Staff recommends that retrospective benefit-cost analyses (BCA), utility portfolio reports, updates to non-energy impacts and avoided cost considerations, and incremental updates to New Jersey's TRM be conducted annually. As detailed in the Filing & Reporting section, utility filings should be submitted the year prior to the beginning of the next program cycle and include prospective BCAs in accordance with established methodologies. Process evaluations should be conducted during year 2 of each three-year cycle, whereas impact evaluations and prospective BCA should be conducted at the beginning of the third year.

Ultimately, the approval of the evaluation plan will be under the purview of the Board. In addition, these initial recommendations are subject to change as processes evolve. The EM&V WG and Statewide Evaluation Manager will recommend overall EM&V plans, including the need for additional studies or market assessments at the beginning of each program cycle. Those evaluations should seek to best address the most pressing needs and contribute to ongoing program improvement as well as ensuring the appropriate data is collected to support the evaluations.

Savings Determination Approach

New Jersey will continue to update its TRM, currently referred to as the Protocols to Measure Resource Savings (Protocols) to include updated values for deemed savings calculations for existing State- and utility-administered programs. A comprehensive update of New Jersey's TRM will likely be necessary ahead of the first year of the next generation of energy efficiency and peak demand reduction programs in order to ensure that all measures included in both State and utility programs are represented in the TRM. Where appropriate for custom measures or programs where external software or other approaches will be utilized to develop energy savings estimates, the EM&V WG will review those systems, and those methods for calculating energy savings will be incorporated or referenced in the Protocols.

Benefit Cost Analysis/Cost-Effectiveness Testing

Benefit-cost analysis assists in determining which measures, programs, or portfolios should be adopted, continued, or altered in some fashion. BCA and the resulting benefit-cost ratios (BCR) reflect monetized program costs and benefits (outcomes) and provide a consistent method for reviewing program costs and impacts, particularly in comparison to each other.

The CEA has specific requirements related to the cost-effectiveness of utility programs:

> The energy efficiency programs and peak demand reduction programs shall have a benefit-to-cost ratio greater than or equal to 1.0 at the portfolio level, considering both economic and environmental factors, and shall be subject to review during the stakeholder process established by the board pursuant to subsection f. of this section. The methodology, assumptions, and data used to perform the benefit-to-cost analysis shall be based upon publicly available sources and shall be subject to stakeholder review and comment. A program may have a benefit-to-cost ratio of less than 1.0 but may be appropriate to include within the portfolio if implementation of the program is in the public interest, including, but not limited to, benefitting low-income customers or promoting emerging energy efficiency technologies.
>
> [N.J.S.A. 48:3-87.9(d)(2).]

As stated, the utility programs must have a benefit-cost ratio greater than or equal to 1.0 at the portfolio level.

The DCE has traditionally based its BCA on the California Standard Practice Manual (CSPM), which defines five main cost tests for the benefit-cost analysis to align with the various perspectives of key stakeholders. In New Jersey, all five tests have historically been utilized in the performance of BCA, but no specific ratio has been required for program approval.

1. The **Participant Cost Test** measures the quantifiable benefits and costs to the customer attributed to participation in a program. These are essentially private benefits and costs.
2. The **Program Administrator Cost Test, or Utility Cost Test** indicates whether the benefits of an EE resource will exceed its costs from the perspective of the utility system only. The UCT is also proposed to be one of seven metrics to determine compliance with quantitative performance indicators for the utilities.
3. The **Ratepayer Impact Measure Test (RIM)** measures the impact on customer bills or rates due to changes in revenues and operating costs of the program. It tests equity between participants and non-participants.
4. The **Total Resource Cost Test** evaluates cost-effectiveness of energy efficiency investment as a resource and compares it with other demand-side and supply-side resources from the combined perspective of the utility system and participants.
5. The **Societal Cost Test** attempts to quantify the change in the total resource costs to society as a whole. It is similar to the Total Resource Cost Test, but adds in additional costs and benefits incurred by society, including environmental costs, improved health outcomes, and economic development impacts.

In 2017, the National Standard Practice Manual (NSPM) introduced the Resource Value Framework (RVF), which comprises the steps a jurisdiction would take to develop a **Resource Value Test (RVT)**. The RVT assesses cost-effectiveness from a regulatory perspective, as opposed to from the participant, utility, ratepayer, or societal perspectives of the five standard tests described above. The regulatory perspective of the RVT is based on principal objectives, “providing customers with safe, reliable, low-cost energy services,” and is designed to additionally incorporate other relevant policy objectives.

Numerous stakeholders have commented in favor of the development and adoption of a customized test, such as the RVT for New Jersey. Given the CEA's requirement for a primary test, Staff believes that the underlying approach of an RVT, or a different, designed primary test, is closely aligned with best practices for regulatory impact analysis and advancing the State's additional policy goals related to the energy efficiency transition.

Staff recommends that a Resource Value Test or similar approach be considered for the benefit-cost testing of New Jersey's energy efficiency and peak demand reduction programs. Over the spring, summer and early fall of 2020, Staff will coordinate with the EM&V WG and stakeholders to consider development of a primary test. For the purposes of program development, the CSPM tests will be used, unless and until a RVT or other primary test has been developed. During the first cycle of programs and after possible institution of the RVT or other primary test, the five CSPM tests will continue to be used for information-only reporting. Adopting a primary test while utilizing the CSPM tests as a secondary check will ensure that all perspectives are represented and that stakeholders and program administrators have the full scope of information for decision making.

Four benefits of using a primary test approach are that it: 1) provides simplicity and greater transparency compared to the five different tests approach; 2) can be used to avoid mixing public and private costs and benefits; 3) aligns with the language of the CEA, which requires a single BCR of greater than one at the portfolio level; and 4) helps to meet additional New Jersey policy objectives, while still providing support for low-cost energy-efficiency procurement.

The following is a list of potential benefits and costs that should be considered for use with a primary test in New Jersey. Many of these parameters are already part of one of the five tests recommended in the California Standard Practice Manual and/or used by NJCEP. Some of the non-energy impacts (benefits and costs) have been proposed in literature or are being tested in other states. Some of these parameters are relatively easy and inexpensive to measure or estimate, while others are more difficult and/or expensive to measure or estimate. Not all of the benefits and costs listed below would be relevant for all energy efficiency and peak demand reduction measures.

Benefits (both energy and non-energy):

- Reduced energy consumption
- Lower energy costs
- Avoided/reduced operation and maintenance costs
- Reduced greenhouse gas emissions
- Improved air quality (from reduced zero emissions of other pollutants)
- Improved human health as a result of better air quality
- Improved ecosystem health as a result of better air quality
- Increased resiliency
- Increased comfort
- Avoided water and sewage costs for water and sewer utilities implementing energy efficiency measures
- Economic development/job creation
- Reduced arrearages/shut-offs

Costs (both energy and non-energy)

- Capital/investment costs

- Program administration costs (including % of program budget for EM&V)
- Financing costs
- Stranded costs
- Societal costs: including costs to participants and non-participants through bill and rate impacts

Non-energy Benefits and Costs

The National Standard Practices Manual Resource Value Framework encourages the inclusion of non-energy benefits (NEBs) and costs in cost-effectiveness testing, and many states currently include them. According to the Database of State Efficiency Screening Practices, there are twenty-three states that are currently accounting for multiple NEBs in their evaluation of energy efficiency and peak demand reduction programs. While these impacts can be positive or negative, most are considered benefits (NEBs). Excluding them can under-estimate the value of energy efficiency and peak demand reduction programs.

The CEA at N.J.S.A. 48:3-87.9(d)(2) specifically states that " the energy efficiency programs and peak demand reduction programs shall have a benefit-to-cost ratio greater than or equal to 1.0 at the portfolio level, considering both economic and environmental factors..." pursuant to section 13 of P.L. 2007, c. 340. Therefore, both environmental and economic non-energy benefits and costs should be identified and, where possible, quantified and included in BCA tests. Stakeholders largely agreed that some sort of NEBs should be included in cost-effectiveness testing of energy efficiency programs. Some commonly cited examples include environmental emissions, health and safety, and economic benefits (such as jobs). Additionally, customer satisfaction, water efficiency/cost, low income adders, and resiliency were mentioned. In the near term, relevant non-energy impact values should be evaluated for possible inclusion in a primary cost test. Over the next year, the EM&V WG should address other NEBs and associated costs, and conduct third-party studies to quantify as needed.

Net vs Gross Savings

Another important function of the EM&V process is to develop an approach to account for the effects of free riders and spillover, which are savings associated with participating customers who would have implemented energy efficiency or peak demand reduction measures without benefits or incentives. Often, net-to-gross ratios are used to determine the savings attributable to the energy efficiency or peak demand reduction program itself, not including free riders and spillover. Net to gross ratios may change significantly not only based on measure type and end use but also on incentive amount, program design, implementation detail, and marketing effort. Accurate net to gross ratios ensure that program administrators are incented to design programs that maximize “savings attributable to the program,” rather than simply capturing the energy savings resulting from the actions of free riders.

The CEA states that:

> A public utility may apply all energy savings **attributable to programs** available to its customers, including demand side management programs, other measures implemented by the public utility, non-utility programs, including those available under energy efficiency programs in existence on the date of enactment, building codes, and other efficiency standards in effect, to achieve the targets established in this section." [emphasis added]
>
> [N.J.S.A. 48:3-87.9(c)]

Staff recommends that energy savings should be reported in both gross and net savings, with net savings utilized for all aspects of program review, including cost-effectiveness testing and compliance. In the short term, while more New Jersey-specific net-to-gross factors are being developed, New Jersey will utilize a net-to-gross value of 0.84 to be applied to all programs, except for low-income, for which 1.0 should be used.

The Board, working with the EM&V WG, will coordinate the release of a net vs. gross study (possibly as part of a process evaluation) to determine the effects of free ridership, spillover, and other induced effects of energy efficiency and peak demand reduction programs and account for these effects accordingly in reporting of energy savings (particularly for those programs that have more custom measures).

The EM&V WG should periodically examine whether new studies about NTG are needed. Updates to NTG ratios may be needed as a result of a rapidly changing market for a measure, new or modified program designs, or relevant studies in other jurisdictions. Energy savings should continue to be reported as both gross and net savings but net savings will be used for program evaluation and to determine whether utility-specific QPIs are achieved. Further, Staff, working with the EM&V WG, will consider any necessary going-forward policies around how NTG values may be used.

Energy Code Compliance

As energy code compliance is a cost-effective measure for increased energy efficiency/savings,[3] measures such as compliance training can increase the overall performance of building energy efficiency programs. At the same time, energy efficiency built into various codes can reduce the need for costlier energy efficiency programs. Energy code compliance activities additionally facilitate the non-energy goals of many states – for example, reduction of GHGs, participant health, and safety measures.

In the near term, Staff proposes to form an energy codes review panel, perhaps as a subcommittee of the EM&V WG. The New Jersey Energy Codes review panel will seek to identify opportunities for greater energy efficiency via building energy code strategies and seek to quantify the energy savings that could result from updates to energy codes. In addition, the Board should procure an Energy Code Compliance baseline study. Subsequently, the Board should review and adopt as appropriate recommendations arising from the above-mentioned studies.

Energy efficiency plays a critical role in New Jersey's efforts to combat climate change. Under the CEA, utilities are charged with delivering energy efficiency to residents across the state, which makes the State and utilities partners in working to achieve the goal of 100% clean energy by 2050. This goal must be achieved in a cost-effective manner, which necessitates an independent, transparent, and consistent EM&V administrative framework.

[3] US DOE, Saving Energy and Money with Building Energy Codes in the United States, DOE/EE-1087, August 2016.

Filing and Reporting

Overview

Effective filing and reporting frameworks will play a critical role in ensuring that utilities and the State are meeting the objectives of the CEA and will be a critical component in providing sufficient information to evaluate programs as well as modify and continuously improve them. This section of the proposal addresses the system by which utilities will file for approval of new and modified energy efficiency and peak demand reduction programs; the timetable and frequency with which utilities will make those filings; minimum filing requirements applicable to utility program proposals; reporting requirements, which comprise the information needed to assess the progress and performance of the programs for the purposes of both compliance and evaluation; and the systems that the State and program administrators will use to track program data.

The Clean Energy Act provides that:

- Each electric and gas public utility shall **file implementation and reporting plans**, as well as evaluation, measurement, and verification strategies, to determine the energy usage and peak demand reductions achieved by the programs. The filings shall include details of **expenditures** made by the utility and the resultant **reduction in energy usage and peak demand**. (N.J.S.A. 48:3-87.9(d)(3)) (emphasis added)
- Each electric and gas public utility shall file an annual petition to demonstrate **compliance with the energy efficiency and peak demand programs**, **compliance with the targets** established pursuant to the QPIs, and for cost recovery of the programs. (N.J.S.A. 48:3-87.9(e)(1)) (emphasis added)

In its outreach to stakeholders, Staff sought input on desired outcomes for New Jersey, barriers to successful systems, best practices, feedback on potential approaches, and specific suggestions for consideration. Below are some guiding principles for filing and reporting requirements, based on stakeholder feedback:

- Successful filing and reporting systems will guide energy efficiency and peak demand reduction programs to be cost effective, effective in meeting legal and policy goals, and ever-improving.
- Filings, reports, and other key regulatory documents related to energy efficiency filings submitted to the State should be available, transparent, and easy to access and navigate for all interested parties who want to track and review the content of filings.
- The elements of filing and reporting frameworks should be clear, consistent in their applicability to all program administrators, and established in a timely fashion.
- Filing and reporting requirements should strike a balance between what is useful or valuable for the purposes of compliance, evaluation, or improvement, on the one hand, and what is unnecessary, unreliable, or unduly costly or burdensome, on the other hand. They should also promote continuity of programs by avoiding disruptions in programs.
- Stakeholders should work through a collaborative process to develop and, over time, adjust filing and reporting frameworks.
- Filing and reporting tracking systems should ensure protection of personally identifiable information.

Until the Board adopts an e-filing system, Staff proposes to provide timely access to filings, reports, evaluations, and other key regulatory documents on the BPU's website in a way that is easy to navigate. Interested parties will also be able to opt-in to email notifications about general updates to overall energy efficiency and peak demand reduction programs in the state.

Staff also anticipates the development of rules to support several aspects of the energy efficiency transition including filing and reporting. The Development of those rules will commence after the Board calls for utilities to file in the spring of 2020.

Below is the proposed filing and reporting timeline for utility filings:

Fiscal Year (FY)	Program Year	Program Cycle	Annual Filings
July 1, 2019-June 30, 2020		May 2020: Board Order on new programs	Cost recovery and performance filings
2021		Fall 2020: Utilities submit program filings April 2021: Anticipated Board action on filings	Cost recovery and performance filings
2022	1	July 2021: New energy efficiency/peak demand reduction programs begin (new program cycle)	Cost recovery and performance filings
2023	2	Triennial review	Cost recovery and performance filings
2024	3	Utility program filings	Cost recovery and performance filings
2025	4	New program cycle begins	Cost recovery and performance filings
2026	5	Triennial review	Cost recovery and performance filings
2027	6	Utility program filings	Cost recovery and performance filings
2028	7	New program cycle begins	Cost recovery and performance filings
2029	8	Triennial review	Cost recovery and performance filings
2030	9	Utility program filings	Cost recovery and performance filings
2031	10	New program cycle begins	Cost recovery and performance filings
2032	11	Triennial review	Cost recovery and performance filings

Utility Program Filings

The Clean Energy Act at N.J.S.A. 48:3-87.9(d)(1) states that electric and gas public utility shall establish energy efficiency and peak demand reduction programs to be approved by the Board no later than thirty days prior to the start of the energy year. The programs adopted by each utility shall comply with the quantitative performance indicators adopted by the Board.

The Clean Energy Act at N.J.S.A. 48:3-87.9(d)(3) further states that each electric and gas public utility shall file with the Board implementation and reporting plans, as well as evaluation, measurement, and verification strategies, to determine the energy usage and peak demand reductions achieved by approved energy efficiency and peak demand reduction programs. The filings shall include details of expenditures made by the public utility and the resultant reduction in energy usage and peak demand. The Board shall determine the appropriate level of reasonable and prudent costs for each program.

Pursuant to N.J.S.A. 48:3-87.9(d)(1), Staff proposes that utilities submit energy efficiency and peak demand program filings by November 1 every three years for Board approval by May 1 of the following year. Utility program administrators may propose programs that last for up to three years, with the possibility of continuation through future filings. Certain programs, such as pilots, may have shorter durations.

Utility program administrators who wish to make mid-term adjustments to the three-year filings – that is, in between program filings – may do so in accordance with both the framework laid out in the program

administration section of this proposal and the standard template for submitting requests for modifications to programs and budgets, which will be provided by the Board after further stakeholder input.

The current minimum filing requirements (MFRs) for petitions under N.J.S.A. 48:3-98.1, which apply to energy efficiency program petitions, comprise six sections and encompass the information that electric and gas public utilities submit about their program proposals on the following topics: general filing requirements, program description, additional filing information, cost recovery mechanism, cost/benefit analysis, and evaluation, measurement, and verification.[1]

Below are some guiding principles for program filing requirements, based on stakeholder feedback:

- Effective filing requirements will elicit information sufficient for reviewers to understand the proposed programs and accompanying assumptions.
- Filing requirements should focus on the information necessary for the review of program filings as required by the Clean Energy Act. They should elicit information that is sufficiently detailed to address important questions and concerns without being overly broad or requiring unnecessary or speculative information. Striking this balance will support the most efficient development and review of program filings, as well as preserve utilities' ability to adapt and innovate as programs progress. For example, a successful filing system will streamline the regulatory review process by better ensuring that all information needed to reach a conclusion about program performance is provided as part of initial filings, thus potentially minimizing discovery requests and focusing the discussion on program results.
- The State should provide a standard filing template to be used by all program administrators, which will ensure that filings meet the minimum requirements established by the Board and support the efficient review of the filings by all stakeholders.
- In recognition of the fact that some programs are cyclical in nature, filings should show annual and program cycle expectations and results.

Stakeholders made specific suggestions about how some of the current MFRs may no longer be applicable, are overly subjective, are overly broad and should be revised to include more guidance, or are more appropriately EM&V reporting requirements. Conversely, stakeholders suggested that some new MFRs are warranted based on Clean Energy Act requirements. Stakeholders also requested clarification about whether the MFRs will apply to co-managed programs. In response to this feedback, and pursuant to N.J.S.A. 48:3-87.9(d)(3), which, as noted above, requires filings with implementation and reporting plans and evaluation, measurement, and verification strategies to determine the energy usage and peak demand reductions achieved by approved programs, as well as details of expenditures and resultant reductions in energy usage and peak demand, Staff proposes changes to the current MFRs, which are detailed in Appendix F.

Utility Annual Compliance and Cost Recovery Petitions

Pursuant to N.J.S.A. 48:3-87.9(e)(1), each utility shall file an annual petition with the Board to demonstrate compliance with the energy efficiency and peak demand reduction programs, compliance with the targets established pursuant to the quantitative performance indicators, and for cost recovery of the programs, including any performance incentives or penalties. Each utility shall file annually with the Board a petition to recover on a full and current basis through a surcharge all reasonable and prudent costs incurred as a result of

[1] *See* the Board's May 8, 2008 Order in BPU Docket No. EO08030164, as updated in the Board's October 20, 2017 Order in BPU Docket No. QO17091004.

energy efficiency and peak demand reduction programs, including but not limited to recovery of and on capital investment, and for the revenue impact of sales losses resulting from implementation of these programs, which shall be determined by the Board pursuant to N.J.S.A. 48:3-98.1.

The annual progress reports required in the Minimum Filing Requirements will demonstrate utilities' compliance with the targets established pursuant to the quantitative performance indicators. In addition, each utility shall file no later than seventy-five days following the end of each program year an annual petition for cost recovery of the programs (as defined in Section IV of the Minimum Filing Requirements).

Reporting Requirements

Reporting requirements for the energy efficiency and peak demand reduction programs establish the information that program administrators shall submit for the purposes of tracking and evaluating program progress and performance relative to defined goals and targets pursuant to the CEA.
Below are some guiding principles for a successful reporting system, based on stakeholder feedback:

- The data collected about program results should have clear value to regulators and stakeholders. It should (a) demonstrate compliance with legal and policy goals and targets and (b) be useful for evaluation.
- A key goal of reporting under the Clean Energy Act should be to provide dependable, understandable, accurate, and accessible information for each program administrator's energy efficiency and peak demand reduction programs.
- Reporting requirements – including processes, deadlines, definitions, and reporting formats – should be clear and consistent among program administrators and established on a timely basis, well in advance of anticipated filing dates for utility program plans. Data from all program administrators should be comparable and easily aggregated at a statewide level.
- An effective, efficient reporting system will strike a balance in requiring data collection that is useful or valuable for the purposes of compliance, evaluation, or improvement, on the one hand, and not collecting what is unnecessary, unreliable, or unduly costly or cumbersome, on the other hand.
- Making good choices about what data should be routinely reported (and used for reports that are submitted relatively frequently) and what data should be used for evaluation (and used for reports that include a longer timeframe) can help maximize key resources and retain attention on bigger program and portfolio level views of performance.

Staff proposes the reporting framework outlined above in the MFRs. Staff will provide standardized templates for utility and state program administrator reporting with clear and consistent definitions for all fields within the template.[2]

The utilities shall also submit public reports to the State according to the reporting framework outlined above. State program administrators shall also submit public reports consistent with the reporting framework. All public reports will be available to any interested party on the BPU's website. The State will also aggregate the data from utility and state programs and produce public reports on the performance and progress of all energy efficiency and peak demand reduction programs in the state on key metrics such as energy savings, cost savings, environmental benefits, number and types of participants, and program expenditures. Greenhouse gas

[2] Based on stakeholder feedback, these templates may include separate fields to track funds distributed for on-bill repayment programs and other forms of financing to ensure that interested parties can identify which forms of incentives will be repaid by customers over time.

emissions reductions will similarly be reported and aggregated in order to contribute to the State's larger climate goals. These reports shall be available on the BPU's website no later than 60 days after all individual progress reports are submitted.

In addition, Staff anticipates that the EM&V WG will propose recommendations for the development of the details about the content of the utility and State reports that will be required as part of the EM&V process, including process and impact evaluations, which will be available to the public. The EM&V WG may recommend the following types of information gathered through evaluation studies:

- Process evaluations:
  - Customer experience
  - Customer costs
  - Contractor experience
  - Market barriers statewide and, if useful, by service territory
  - Lessons learned in implementing the program with a focus on those related to exceeding or not reaching anticipated goals
  - Recommended program enhancements
- Impact evaluations:
  - Number of program participants
  - Number of completed projects
  - Cost of measures
  - Rebates paid
  - Program expenditures
  - Energy sales
  - Bill and rate impacts
  - Utilization of employees and contractors
  - Local workforce development
  - Incremental employment activity, including jobs created and retained
  - Incremental impact on competition in the private marketplace
  - Non-energy benefits
  - Greenhouse gas emissions reductions
  - Lessons learned in implementing the program with a focus on those related to exceeding or not reaching anticipated goals
  - Recommended program enhancements

Tracking Systems

Among the questions posed to stakeholders were what system(s) should be used to track the progress and performance of energy efficiency and peak demand reduction programs; what data (program data, application data) should be housed at what level; and what specific data should be reported to program administrators and the State.

Below are some guiding principles for a successful tracking system, based on stakeholder feedback:

- A successful tracking system provides for ease of use and quick access to real time information and works easily with other software systems.

- New Jersey's tracking system should include a central state database, as well as the output of utility and contractor databases.
- Stakeholders should establish well-defined and consistent data inputs and outputs.
- In collaboration with stakeholders, the State should develop standardized reporting templates and formats.
- The tracking system should address data security concerns, including ensuring the protection of personally identifiable information, trade secrets, or sensitive data on vendor pricing or business practices.
- Allowing sufficient time for program administrators to review and clean data before reporting will minimize data inaccuracies.
- The tracking system should be flexible enough to evolve over time and incorporate the latest Technical Resource Manual formulas to calculate energy and demand savings.

Utility stakeholders, in particular, strongly recommended that a statewide system be used to aggregate program-level data submitted by the utilities and that utilities own and maintain their own independent tracking systems, which are unique to each utility and which hold application-level and measure-level data.
Staff expects that utilities and their contractors will work together to ensure that utilities receive and track all information related to the implementation of energy efficiency and peak demand reduction programs. It is expected that data in the utility data tracking systems will be made available for EM&V purposes. The State will retain a contractor to administer the statewide tracking system.

Staff proposes to further collaborate with stakeholders, including information technology professionals, to discuss the tracking systems in more detail, develop standardized reporting templates and formats, and develop the processes by which contractors, utilities, and the State will work together to implement this system.

Glossary[1]

Baseline: Conditions, such as energy consumption and demand, which would have occurred without implementation of the subject energy efficiency measure. Baseline conditions are sometimes referred to as the counterfactual. There are several baseline options and a range of definitions for these options used in the efficiency industry.

Custom measures: Energy efficiency measures that provide efficiency solutions to unique situations that are not amenable to fully deemed savings values or for which an individualized savings determination approach is preferable. Custom measures rely on site-specific information (e.g., hours of operation, horsepower, existing equipment efficiency) that determines their impacts (e.g., energy savings). See the prescriptive measures definition for comparison with custom measures definition.

Deemed calculation: Agreed-to engineering algorithm(s) used to calculate energy and/or demand savings associated with installed efficiency measure(s). Referred to in some TRMs as stipulated algorithm(s), standard protocols, or site-specific protocols. Deemed calculations that use only deemed variables or factors define fully deemed savings values. Deemed calculations are used to determine partially deemed savings values when used with a combination of (1) deemed variables/factors and (2) site- or project-specific variables/factors.

Deemed factor: An attribute of an energy efficiency measure or its impacts used in the calculation of its energy or demand savings, lifetime, cost-effectiveness, or non-energy cost or benefit. Examples of deemed factors are measure costs and effective useful life.

Deemed savings method: The process used to derive fully deemed savings values which are predetermined estimates of energy or peak demand savings attributable to individual energy efficiency measures implemented in a particular type of building, application, climate zone, etc. Referred to in some TRMs as unit energy savings or stipulated savings values. These are documented, numerical values for specific energy efficiency measures, often in the form of per-unit savings that define the agreed-upon performance of an individual energy efficiency measure. Applicable to specific energy efficiency actions that can be defined in individual units with specific characteristics (e.g., installation of a single, residential 12-watt LED lamp or a single, 20-horsepower premium efficiency motor); see definition of prescriptive measures. Often subject to some form of verification that the measure was deployed consistent with its application. Deemed savings values may be either: Fully deemed savings values—values that are fixed regardless of any site- or project-specific conditions, variables, or factors, or partially deemed savings values—values determined with algorithms, which have as inputs some combination of (1) deemed variables or factors and (2) site- or project-specific conditions, variables, and factors. Option A of the International Performance Measurement and Verification Protocol (IPMVP) results in partially deemed savings values.

Deemed variable: Values for input assumptions that determine the performance of an energy efficiency measure under different operating conditions, applications, climates, etc. Also referred to as a stipulated variable.

Demand savings: The reduction in peak electricity use in units of kW or fossil or other fuel (e.g., wood, biomass) use in units of Btu/hour from the baseline to the use associated with the energy-efficient measure installation. May also refer to an energy efficiency measure's coincident peak savings, which is the reduction in peak

[1] Glossary definitions were derived from the glossary contained in Schiller 2012 and SEE Action Guide for States: Guidance on Establishing and Maintaining Technical Reference Manuals for Energy Efficiency Measures, Evaluation, Measurement, and Verification Working Group June 2017. Additional definitions are from SEE Action, "Energy Efficiency Program Impact Evaluation Guide," December 2012 and other industry sources.

electricity or other fuel use that occurs simultaneously with the servicing utility system's maximum use during a specific period (i.e., single hour, multiple hours, day, etc.).

Demand-side management: Strategies used to manage energy demand, including energy efficiency, load management, fuel substitution, and load building.

Energy efficiency: The reduced use of energy to provide the same or an improved level of service to the energy consumer, or the use of less energy to perform the same function or produce equivalent output per unit of energy input.

Energy efficiency measure: At an energy consumer facility or residence, an installed piece of equipment or system; a strategy intended to affect consumer energy use behaviors; or modification of equipment, systems, or operations that reduces the amount of energy that would otherwise have been used to deliver an equivalent or improved level of end-use service. Some energy efficiency measures may also be referred to as "energy conservation measures."

Energy savings: Reduction in electricity use in units of kWh or in fossil or other fuel (e.g., wood, biomass) use in units of Btu as compared to a baseline consumption.

Evaluation, measurement, and verification: The conduct of any of a wide range of assessment studies and other activities aimed at determining the effects of an efficiency program, project, or measure and understanding or documenting program, project, or measure performance, program or program-related markets and market operations, program-induced changes in energy efficiency markets, demand or energy savings, or program cost effectiveness.

- **Evaluation** refers to review of an entire program e.g., program cost-effectiveness, implementation process, and attainment of stated objective and projected savings.
- **Measurement** activities include data collection, monitoring and analysis to document energy and demand savings and costs.
- **Verification** activities validate expected savings based on collected data.

Free-riders: In an energy efficiency context, a free-rider is an individual who participates in an energy efficiency program and earns an incentive to take an action they would have taken even in the absence of the program.

Impact evaluation: An assessment of the program-specific, directly or indirectly induced changes (e.g., changes in energy and/or demand use) associated with an energy efficiency program.

Interactive effects: Increases or decreases in the use of electricity or other fuels that occur outside of the end uses targeted by a specific energy efficiency measure, project, or program. For example, reduction in lighting loads through an energy-efficient lighting retrofit can reduce buildings' air conditioning requirements and increase heating requirements because less heat is generated by energy-efficient lighting systems compared with less efficient lighting systems. Measures may also interact. For example, savings from the installation of weatherization measures affect the savings associated with the installation of a higher-efficiency heat pump or furnace.

Market Assessment: An analysis that provides an assessment of how and how well a specific market or market segment is functioning with respect to the definition of well-functioning markets or with respect to other specific policy objectives.

Net-to-gross (NTG) ratio: A factor representing net program savings divided by gross program savings that is applied to gross program impacts to convert them into net program load impacts. The factor itself may be made up of a variety of factors that create differences between gross and net savings, commonly including free riders and spillover. Can be applied separately to either energy or demand savings.

New Jersey Protocols to Measure Resource Savings: The New Jersey Clean Energy Program established protocols to measure resource savings from technologies and measures – including electric energy capacity, natural gas, and other resource savings – and to measure electric energy and capacity from renewable energy and distributed generation systems. The protocols use measured and customer data as input values in industry-accepted algorithms and are based on recent impact evaluations and best available measured or industry data applicable for New Jersey programs when impact evaluations are not available. The protocols are updated from time to time to reflect the addition of new programs, modifications to existing programs, and the results of future program evaluations.

Non-energy effects or non-energy benefits (NEB): The identifiable non-energy impacts associated with program implementation or participation; also referred to as *non-energy impacts (NEI)* or *co-benefits*. Examples of NEBs include avoided emissions and other environmental benefits, productivity improvements, jobs created, reduced program administrator debt and disconnects, and higher comfort and convenience level of the participant. The value is most often positive, but may also be negative (e.g., the cost of additional maintenance associated with a sophisticated, energy-efficient control system).

Peak demand savings: The demand (kW or Btu) reduction produced by an energy efficiency measure that is coincident with a utility system's peak period, which may occur over one or more hours or days.

Prescriptive measures: Specific, defined actions that can usually be described on a per unit basis. Typically, they are one-for-one replacements for existing equipment or the equipment that would have been installed in lieu of the associated prescriptive measure program. Energy or demand savings can be described with fully deemed savings values or values with some limited variation based on deemed variables and project-specific data (i.e., partially deemed savings values). Prescriptive measures may also refer to measures for which fixed financial incentives are paid, either per unit or per unit of savings (e.g., kWh or KW). Typical prescriptive measures are appliances, motors, and lamps (e.g., LEDs).

Potential studies: Studies conducted to assess market baselines and future savings that may be expected for different technologies and customer markets over a specified time horizon.

Process valuation: A systematic assessment of an energy efficiency program for the purposes of documenting program operations at the time of the examination, and identifying and recommending improvements to increase the program's efficiency or effectiveness for acquiring energy resources while maintaining high levels of participant satisfaction.

Program administrator: An entity selected by a regulatory or other government organization to manage an energy efficiency portfolio within a specific geographic region and/or market. Typical administrators are publicly owned utilities, investor-owned utilities, nonprofit organizations, or state government agencies.

Program implementer: An entity selected and contracted with or qualified by a program administrator to provide products and services to consumers either directly or indirectly.

Spillover: Spillovers represent savings attributed to an energy efficiency program's existence that are not caused by actions taken by program participants as part of the program.

Technical Reference Manual (TRM): A resource that contains energy efficiency measure information used in program planning, implementation, tracking, reporting, and evaluation of impacts associated with the subject measures.

Appendix A: Program Recommendations

The following are suggestions from Staff on the types of programs that could be implemented in each sector, based on existing program offerings. It is not Staff's intent to limit the programs that utilities propose to utilize to engage each sector. Staff welcomes innovative strategies in all sectors, but suggests that program designs provide tailored energy efficiency opportunities to all types of customers and are as consistent as possible among utilities.

Utility Administered Core Programs

Utility administration works best for programs that can leverage utilities' knowledge of energy consumption, customer demographics, workforce infrastructure, and existing customer relationships within their service territories. Utility access and increased customer access to energy use data enables the design of more personalized services and programs, targeted outreach, and individualized solutions for customers. Utilities can offer flexible financing options, such as on-bill repayment. Customers may also have more "brand awareness" of and direct communication with their utility, which can facilitate adoption of energy efficiency measures.

Residential Sector Programs

Home Performance with ENERGY STAR®

Programs for existing residential buildings will be comprised of a comprehensive program administered by the utilities through which customers will receive energy efficiency rebates and incentives to implement energy efficient measures. Opportunities to benefit from energy efficiency improvements will be available to customers undertaking a full home energy audit and implementing identified measures. Utilities are well-suited to implement this program because of their access to customer data that can inform optimal energy efficiency measures, their existing relationships with customers, their ability to use targeted marketing to identify potential program participants, and their ability to offer on-bill financing to program participants.

Home Performance with ENERGY STAR (HPwES) is a national home performance improvement program developed by the Environmental Protection Agency (EPA) and administered by the Department of Energy (DOE). The objective of the program is to offer a comprehensive or whole-house energy efficiency improvement package based on sound building science principles that produces predictable savings and that a home's energy efficiency, comfort, safety, and durability. The New Jersey HPwES program is built on two parallel delivery strategies: provide information, education, and incentives directly to customers to encourage them to undertake significant energy efficiency improvements to their homes; and encourage contractors to receive the proper training and Building Performance Institute (BPI) GoldStar Program qualifications to provide high quality home energy efficiency services. BPI certifications are based on national standards that ensure that home assessors have the skills required to identify and realize savings opportunities and that best practices are met. Stakeholders have clearly pointed to the need for consistent and robust training for contractors and home assessors, and this will be a critical function to maintain and improve these programs.

WARMAdvantage and COOLAdvantage

The WARMAdvantage and COOLAdvantage (HVAC) programs are designed to increase sales and the installation of high efficiency heating, water heating, and air conditioning or heat pump appliances in

residential applications. Specifically, the programs cover HVAC purchases made by existing gas and electric customers of the seven investor-owned utilities in New Jersey (which together serve more than 98% of households in the state). As with the HPwES program, utilities are well-positioned to offer these programs due to their access to data, customer relationships, contractor relationships, ability to offer on-bill financing, etc. The programs are designed to reduce energy usage within the existing housing stock. Customers who are installing new or retrofitting furnace or boiler heating systems, water heating, air conditioning, or heat pump systems for their homes may be eligible for incentives if the units purchased and installed meet minimum efficiency and quality installation standards.

Commercial & Industrial Sector Suggested Programs

Utilities are well suited to administer the following commercial and industrial programs, due to their direct relationships with commercial and industrial customers, their understanding of customer energy use data and energy savings opportunities, and their knowledge of this sector's energy needs and challenges. There is significant energy saving potential among commercial and industrial customers, which presents an important opportunity for utilities to make progress towards their energy savings targets. Designing and delivering programs to this sector will also provide utilities with opportunities to leverage their knowledge to increase energy savings beyond the savings targets. Branding and marketing could be enhanced and contractor and customer confusion reduced by combining some of these programs into C&I offerings that provide a single point of entry while still supporting individual? measures.

Pay for Performance - Existing Buildings

The existing buildings program is currently designed for commercial and industrial buildings with peak electric demand in excess of 200 kW in any of the preceding twelve months. Given the advantages of understanding customer energy use patterns and leveraging data when administering existing building programs, utilities can utilize their strengths to more efficiently administer this program. Their access to customer data will streamline the enrollment process and may assist in identifying additional opportunities for savings. The program currently consists of a network of contractor partners who provide technical services to program participants. These energy experts Draft Energy Reduction Plans (ERPs) for each project, including a whole building technical analysis, a financial plan for funding the energy efficiency improvements, and a construction schedule for installation. ERPs must show that the package of efficiency measures will achieve a target reduction of at least 15% of total building source energy consumption. After installation, these targets are verified by analyzing post-retrofit billing data tracked through the federal Environmental Protection Agency (EPA) ENERGY STAR® Portfolio Manager platform.

Direct Install

Through the current Direct Install program, small businesses whose peak electrical demand does not exceed 200 kW in any of the preceding twelve months can receive a free energy assessment of their building. The program designates a contractor to help install cost-effective energy efficiency equipment, such as lighting, HVAC, variable frequency drives, refrigeration, and motors. Utilities are well suited to run this program because their data and customer relationships will allow them to identify which customers are eligible for program participation and also which have particularly high energy use and peak loads based on their size and therefore the greatest needs and potential for energy savings.

Retrofit - SmartStart

The SmartStart Buildings program focuses on renovating and installing single measure (or multiple single measure) new equipment in existing buildings to increase energy efficiency. This program will similarly be streamlined and enhanced through utility administration because utility access to billing and energy use data will provide utility program administrators with an accurate and timely determination of customer needs and energy efficiency opportunities. These direct connections and history of customer relationships, as well as their understanding of seasonal energy use trends and business needs, will allow utilities to complete projects in a more efficient manner.

Customer Tailored Energy Efficiency Pilot

This program offers a streamlined approach to developing and implementing energy efficiency projects and, in particular, offers customers opportunities to integrate custom energy efficiency measures, i.e., those without prescribed rebates, into their project. The program is designed for mid-sized to large customers and allows multiple prescriptive and custom measures to be bundled into one project. Custom programs are well administered in conjunction with prescriptive and whole building programs and should be included in the suite of incentive and rebate programs for customers with unique needs. Staff have heard from stakeholders that, because flexibility is critical to ensuring customers' special efficiency needs are met, utilities can effectively administer this program.

Large Energy Users Program

The Large Energy Users Program (LEUP)'s goal is to provide large commercial and industrial utility customers that have facilities in New Jersey with the opportunity to self-invest in energy efficiency. The program incentivizes building owners or users to upgrade or install energy conserving measures in existing buildings and offsets these capital costs, provided that projects meet the program's eligibility and program requirements. Efficiency upgrades are customized to meet the requirements of the customers' existing facilities, while advancing the State's energy efficiency and peak demand reduction goals. Utilities will be able to leverage customer data and relationships through dedicated customer account managers in order to take a comprehensive approach to managing and reducing large energy users' consumption and to help these customers make more informed decisions about their opportunities for savings.

Multifamily Sector Program

Multifamily – Existing Buildings Program

After reviewing significant stakeholder input, Staff believes that the utilities are best suited to run a core program serving existing multifamily residential structures. The utilities' capacity to utilize customer-billing data and offer on-bill financing are critical elements of a successful multifamily program and should be leveraged in this instance. Additionally, owners and operators of existing multifamily buildings often face difficulties in undertaking comprehensive energy efficiency projects that do not overly inconvenience their tenants. Staff agrees that the utilities are best equipped to handle these sorts of unique multifamily issues by designing programs and potentially packaging other utility initiatives to create a system that address the needs of building owners and tenants alike.

While Staff recommends utility administration of a core multifamily existing buildings program, the State will administer the multifamily program for new construction projects. Furthermore, the State has a vested interest in ensuring this program is offered consistently and equitably across the New Jersey. To that end, a Multifamily Working Group (MWG) will be set up between the utilities and the State to discuss program design and management of program operations; this will particularly assist in the coordination of the existing building and new construction multifamily programs and program details such as eligibility requirements and eligible measures. While the utilities will design and implement the Multifamily – Existing Buildings program they will coordinate with State program administrators, through the MWG, to ensure access to energy efficiency throughout the State for all multifamily residential buildings.

The MWG, including utilities and Staff, will ensure that there is equitable access for all customer classes and adequate program support throughout program implementation. The group will meet intensively at the commencement of the program and at least quarterly afterwards to review issues related to program design and implementation in addition to troubleshooting problems that arise and identifying further opportunities to reduce participation barriers particularly for low and moderate income Multifamily.

In coordination with the MWG, the State will also support the utility efforts by coordinating directly with HMFA, DCA, the federal government, and other agencies (where appropriate) to ensure consistency and increase program access, as well as to provide updates and guidance directly to the utilities. Stakeholders support efforts to explore financing for the multifamily program, which Staff agrees will be beneficial to the success of the program and will be discussed by the MWG.

State-Administered Core Programs

The majority of current energy efficiency program offerings are provided by statewide programs funded by the Societal Benefits Charge (SBC) and administered by the NJCEP. A well-designed State-run program can reduce costs to ratepayers by minimizing fixed costs, avoiding duplicative administrative costs, and creating economies of scale. State administered programs can also minimize transaction costs for trade partners operating in multiple utility service territories. Similarly, consistent incentives and program requirements, as well as a single point of contact, will increase predictability in program implementation and reduce market confusion among both the contractors delivering the programs and the customers participating in them; this will result in greater program participation overall and a more positive customer experience. The State is also best poised to deliver programs that benefit from coordination with other state agencies, as NJCEP is best positioned to work with other New Jersey-wide agencies to encourage energy efficiency across the entire state.

For example, the State is best positioned to continue offering new construction programs in order to facilitate collaboration with and establish consistency in its program offerings to the new construction industry, which often works across utility service territories, and to continue to foster trade ally partnerships with such entities. Limiting the delivery of new construction programs by utility service territories can lead to confusion caused by multiple points of contact and inconsistent program opportunities. Importantly, the State is best able to align new construction programs with updated building codes and coordinate with other state agency-offered programs.

Residential Programs

Residential New Construction

The Residential New Construction (RNC) program is designed to increase the energy efficiency and environmental performance of residential new construction buildings in New Jersey. The program's strategy is to establish standards for energy efficient new construction using national initiatives, including the EPA ENERGY STAR® Certified Homes program and the DOE Zero Energy Ready Home (ZERH) program. The RNC program offers technical support and incentives to builders of new single or multifamily residential structures or homes undergoing complete rehabilitation that comply with these standards. To participate in the RNC program, builders agree to work with independent third-party inspectors who inspect, measure, and test the home's performance during and after construction. Incentives are designed to partially offset the construction costs associated with building higher efficiency homes compared with those built to code. The State will best be able to work with codes officials and other state agencies to support this program through advancements in codes and standards and is best positioned to work with trade allies across the state, such as large developers, who are rarely bounded by utility territories.

Retail Products

The statewide Retail Products program provides financial incentives and support to retailers who sell energy efficient products in-store. This results in reduced prices on items such as LED lighting, power strips, and other electric and/or gas efficiency products, as appropriate, at participating stores across New Jersey. The State should continue to administer this program, as it is better positioned to negotiate for statewide deployment of products available to all customers. The State currently has numerous partnerships established and will continue to leverage these existing relationships to ensure increased savings attributed to LED lighting and advanced power strips. As federal lighting standards continue to improve, the potential savings from this program will decrease. Therefore, it will be more efficient for the State to leverage its existing partnerships to achieve as many savings as possible in the short-term.

Commercial & Industrial Programs

Pay for Performance - New Construction

Similar to the Residential New Construction program, the State can enhance opportunities for energy savings by administering the new construction program for commercial and industrial customers. Since developers work across service territories and often across state lines, the State (NJCEP in cooperation with the New Jersey Department of Community Affairs) will be in a better position to coordinate program incentive opportunities with progressive improvements to building energy codes and other complementary opportunities. The Pay for Performance Program - New Construction program (P4P-NC) is designed to incentivize building owners, developers, or other applicants to take a comprehensive, long-term approach to incorporating energy efficiency in their buildings. Rather than providing incentives to replace existing equipment with higher efficiency equipment, the P4P-NC program seeks to transform the way in which contractors and design professionals consider energy use pre-construction. This is achieved by requiring the use of standardized energy simulation software to estimate full lifecycle costs rather than only initial costs and then encouraging building owners and their designated contractors to continue to measure and verify the facility's energy consumption and savings year after

year. A portion of the incentive is based on this measurement and verification component. The P4P-NC program is designed for new commercial and industrial buildings with 50,000 square feet or more of planned space, as well as buildings undergoing substantial renovation.

Combined Heat & Power - Fuel Cells Program

NJCEP supports the statewide growth of Commercial and Industrial Combined Heat & Power and Fuel Cell (CHP-FC) technologies to enhance energy efficiency through on-site power generation and productive use of waste heat. The CHP-FC program should be administered by the State, as it is best positioned to establish access to and provide comprehensive planning and coordination for customers. Additionally, the non-energy benefits derived from CHP-FC projects, such as resiliency and associated emergency planning, are best tracked and managed by the State to ensure conformity with larger State emergency plans. These projects can be significant in terms of multi-year development timelines, cost, and payback period. Multiple stakeholders agreed with Staff's initial decision to keep the administration of CHP-FC programs with the State. In order to limit administrative costs, the same program should be offered by the State to other large customers.

Multifamily Sector Program

Multifamily – New Construction Program

As with the residential and commercial sector new construction programs, Staff believes the State is best suited to run a statewide Multifamily – New Construction Program. Ensuring eligibility requirements, incentive levels, and other key program details remain the same throughout the State will be essential to reducing contractor confusion, as many large and small multifamily builders work across utility territories throughout New Jersey and across the region. In order to keep up to date with best practices, ensure equitable access to programs, and maximize program success, the State will collaborate with the utilities through the MWG. This group, comprised of Board Staff and utility representatives, will work collaboratively to design the best possible suite of programs for the Multifamily sector, for both new construction and existing buildings programs, and will make sure that eligibility requirements and program offerings align, as appropriate, to ensure access to energy efficiency options for all residents in multifamily residential buildings, and will also address barriers to multifamily sector access to energy efficiency programs.

Local and State Government Programs

Local Government Energy Audit Program

The Local Government Energy Audit (LGEA) program allows local government agencies, state contracting agencies, public agencies, state colleges and state universities, and 501(c)(3) non-profit agencies with the opportunity to have their facilities reviewed to identify how they currently use energy and what steps they could take to reduce that usage. The cost of this audit is covered, up to the current incentive cap of $100,000 ($300,000 for hospitals), through NJCEP. The audit requires no out-of-pocket expenses to the entity being audited, which is a critical component that encourages participants to undergo these audits and ultimately benefits the state's residents as a whole once eligible entities implement energy reduction measures outlined in the LGEA program. The audit evaluates equipment on-site, reviews the utility bills, benchmarks the facility against other similar facilities, and considers the opportunities for both energy efficiency and alternative energy generation. The product of the audit is a road map

showing suggested changes, estimated costs, energy savings, and estimated timing for the return on investment. The State is in the best position to effectively market this program due to its relationships with various public entities, universities, and non-profits. Moreover, local governments are typically risk adverse. Having a program that is run directly by the State and which carries with it the imprimatur of the State's backing, is an important selling point for the audit. Finally, the State's direct oversight and operation of the program enables it to target specific local governments while keeping in mind larger policy priorities, such as environmental justice or other valid governmental purposes, a balance which would be more difficult to achieve under territory-focused programs.

Energy Savings Improvement Program

The Energy Savings Improvement Program (ESIP) was created to assist local governmental agencies in funding energy efficiency and energy reduction projects. Under the ESIP law, all governmental agencies – including state agencies, authorities, public institutions of higher education, county colleges, local boards of education, and county and municipal governments – can make energy-related improvements to their facilities and pay for the costs using the value of energy savings that result from the improvements of an ESIP project. The improvements are done via Energy Conservation Measures (ECMs) such as lighting, occupancy sensors, chillers, boilers, HVAC equipment, demand management controls, renewable energy, and combined heat and power systems with a defined payback period. The ESIP Coordinator works with the DCE and applicants to maximize funding opportunities. Considering the nature of the work, the direct access to local governmental agencies, the natural growth of this program out of the local governmental audits, and the requirements of the law, the State should continue to manage this program.

State Facilities

The BPU's State Energy Office (SEO) works hand-in-hand with existing state agencies to improve energy systems in state government facilities. The SEO works in partnership with the New Jersey Division of Property Management and Construction (DPMC) and other Treasury agencies within the Energy Capital Committee (ECC) to identify facility projects within the state at governmental and/or quasi-governmental agencies and to implement energy reduction, energy savings, and energy efficiency projects.

Guided by administrative priorities, a state agency is best suited to "lead from within" to encourage energy efficiency actions for other state government agencies. For example, Executive Orders have directed state agencies to notify and subsequently work with the SEO on all energy related projects and programs. The SEO, in conjunction with the other state agencies, is in a unique position to provide technical support and, in some cases, funding for energy upgrades and efficiency projects at state facilities. The SEO's intimate knowledge of opportunities within state buildings and campuses, as well as knowledge of capital improvement planning and funding cycles, has aided in identifying the state sectors, facilities, and systems that would benefit most from projects. Thus, the SEO and state partners should retain oversight and execution of this program.

Co-Managed Core Programs

Low-Income Program (Comfort Partners)

Statewide administration of low-income programs increases accessibility for all qualified customers because outreach and program offerings are not limited by utility service territory, which results in greater program recognition and access. The current Comfort Partners program merges the best of both administrators – the public interest motivations of the State and the direct customer relationships held by utilities – in order to effectively serve low-income customers through a partnership among utilities and the State. The current model promotes best practices while ensuring customer access to consistent offerings and promotes investing in deeper savings in each home served by the program. The State should continue its role in setting program objectives, oversight, and participating in program management, while the utilities manage and support the program's day-to-day operations and adherence to best practices. To complement these offerings, the State has the ability to leverage partnerships on behalf of all utilities with other government agencies and utilize state or federal weatherization funds to provide the best possible programs for low-income customers. This co-managed program has successfully leveraged the administrative strengths of both utilities and the State. Working together, utilities and the State should strive to continue to improve Comfort Partners program delivery and increase program participation.

Energy Efficiency Products Marketplace

The State and utilities, together, will adopt a single online platform for an energy efficiency products marketplace through a contractor jointly selected and procured by the utilities, with input from Staff. A single, co-managed marketplace will facilitate product availability and reduce market confusion, while ensuring that customers across all service territories have equal and adequate access to energy efficient products. To manage the program, the Products Marketplace & Recycling Working Group (PMR WG) will meet on a regular basis.

The single products marketplace will also ensure that customers served by multiple utilities are able to access the same products and that the costs and energy savings attributable to each EE product can be correctly allocated to the respective utility. For example, the rebate for the purchase of a smart thermostat by a customer served by one utility for electricity and another for gas would be allocated between the two utilities via a formula pre-determined by the PMR WG and, similarly, the respective electric savings and gas savings, dependent on the customer's cooling and heating systems associated with the thermostat, would similarly be allocated between both utilities based on agreed upon formulas.

A co-managed marketplace will allow the utilities to collaborate in order to most effectively serve customers without causing market confusion and will allow customers to shop among a full suite of EE products that reduce both electric and natural gas consumption. This single platform will leverage the utilities' strengths in marketing to their customers and provide them opportunity for input regarding individual measures. The utilities will collaborate to make this platform accessible and make recommendations to encourage the adoption of new and emerging technologies. Utility access to customer data will also enable targeted marketing to customers.

The utilities and Staff will collaborate in the PMR WG to manage the vendor who develops and maintains the marketplace, to ensure that they are able to integrate their program tracking and reporting with actual products sold, and review the products available to customers of products. The State will maintain a program oversight role within the working group and have input in program offerings, including ensuring consistency in product offerings.

Appliance Recycling Program

The current State-administered appliance recycling program will transition to a co-managed approach. The structure will be the same as detailed above for the Energy Efficiency Products Marketplace, meaning that the utilities will jointly procure and manage an online platform that provides customers with the opportunity to schedule appliance recycling pick-ups and related program offerings. Staff intends for this to be the same web-based platform for all programs.

Like the EE Products Marketplace, the Appliance Recycling Program will be administered through a single platform, jointly procured and administered by the utilities, with input from the State via the PMR WG. The utilities will review the recycling needs and opportunities in each of their territories, jointly manage the availability of recycling opportunities, and encourage customer participation by offering incentives to replace existing products with more efficient products. The State will be heavily involved in the procurement and development of the platform and will have input, along with the utilities, regarding the availability and types of services, etc. The utilities will manage the availability of program services and oversee the day-to-day operations of the program.

Additional Utility-Led Initiatives

In addition to the core programs, new initiatives will be developed and implemented in subsequent years of New Jersey's next generation of energy efficiency and peak demand reduction programs.

Behavioral Programs

There are many opportunities for utilities to leverage their access to customer usage data to develop programs that educate customers regarding their energy use and offer resources to reduce usage. Stakeholders have been clear that these programs are effectively run by utilities. For example, these could include programs that break down a customer's use in a granular, easy to comprehend manner, comparing their use to those of similar buildings in the area and encouraging habits that reduce consumption. Once engaged with the customer about their usage, utilities will be better positioned to point customers inspired by this information to the specific program(s) that can best address their specific needs.

Strategic Energy Management (SEM) Programs

Utilities have the opportunity to provide holistic strategic energy management programs to commercial and industrial customers by using energy data to recommend energy management practices that are tailored to each customer. Understanding specific building and operational characteristics coupled with actual energy data gives utilities the ability to optimize the selection of appropriate energy efficiency measures and operational best practices, and to evaluate the efficacy of these measures toward continuous energy performance improvement.

On-Bill Financing Options

Utilities are able to offer flexible financing options, such as on-bill repayment and other types of bill credits. These financing options provide a more streamlined process for financing energy efficiency upgrades and allow for quicker incentive payments to consumers, which can increase energy efficiency adoption. On-bill financing can be particularly influential for residential and smaller commercial customers who may not have sufficient capital to expend on efficiency measures and who may be unable to wait long periods of time to receive a rebate or incentive. Having a streamlined financing process that is able to deliver quick payments to such consumers could increase participation in energy efficiency and peak demand programs and eliminate some financial barriers to energy efficiency

Other Pilot Programs

Each utility service territory has unique challenges and opportunities for energy efficiency and peak demand reduction programs. For this reason, utilities will be able to submit innovative territory-specific pilot programs that may be effective in one territory but not in another. If the pilot is successful, utilities should collaborate on ways to modify the program to work in other territories in order to advance innovative program design and capture all possible energy savings.

Additional State-Led Initiatives

Energy Codes and Standards Initiatives

Setting energy codes and standards for the existing building and new construction market requires consistent attention and efforts from the State. In September 2019, the New Jersey Division of Community Affairs (DCA) adopted the 2018 International Code Council (ICC) building codes, which are the most current, into the State's Uniform Construction Code (UCC). As recommended in the 2019 EMP, the State will continue to lead efforts to revise and implement codes to changing standards, code training, code compliance, and code enforcement. These initiatives and others are discussed further in the EM&V section of this proposal.

Additionally, the State should support improvements in appliance standards to ensure capture of additional savings which will help to meet the State's energy efficiency goals.

Research and Development

The State is best suited to administer research and development (R&D) programs in order to leverage opportunities across the entire state and take advantage of existing partnerships with universities and other educational institutions. There may be opportunities for each utility to propose more territory-specific pilot programs that have an R&D component, however has heard from stakeholders that ratepayers should not fund R&D only utility programs; the majority of R&D should be done on a statewide basis, and both costs and benefits should accrue to all utilities and citizens across the state.

Workforce Development

State-administered training and workforce development programs provide New Jersey's workforce with opportunities to promote and grow a strong, homegrown talent pool that will help expand the state's economy while advancing New Jersey's environmental and energy reduction goals. Given the State's access to state labor and economic development agencies and connections to secondary, vocational, and post-secondary educational institutions, the State is best positioned to create and leverage opportunities to develop and train an energy efficiency workforce. The State will coordinate with the utilities in order to provide program-specific contractor training. This will ensure consistent training programs across service territories, which stakeholders have cited as a key factor in market penetration and energy efficiency adoption. Additionally, it is crucial that utilities employ local contractors and workers wherever possible and staff notes that programs designed to support the training and utilization of local work force, particularly in low and moderate income communities, are welcome.

Public Education Initiatives - Energy Efficiency Curriculum

As in workforce development, the State is best suited to develop and run energy efficiency curriculum programs and materials; the State will be particularly effective at this by collaborating with other state agencies, such as the New Jersey Department of Education, which develops statewide curricula. A curriculum free of company

marketing and branding should be developed that helps students understand the importance of energy efficiency and conservation.

Community Energy Planning Grants

The State should continue to administer community energy grants given the extensive statewide and cross-agency collaboration required to effectively and comprehensively deliver this program and the need for the grants to be available to communities statewide. Community Energy Planning Grants provide funding to communities to create Community Energy Plans. Community Energy Plans holistically consider and identify goals and strategies to incorporate a resilient and clean energy future, including such measures as increasing clean energy production, reducing energy use and harmful emissions, and encouraging redevelopment to promote multi-modal transportation and reduce reliance on personal vehicles. Community Energy Plans will support and enable local municipalities to align their own energy needs with the goals established in the 2019 EMP. A Community Energy Plan requires collaboration among many different state and local government entities and helps local governments identify funding sources throughout the state. State administration of the Community Energy Planning Grants will ensure collaboration among the DCA, DEP, New Jersey Department of Transportation (DOT), NJ TRANSIT, and the New Jersey Department of Health (DOH), among others, in order to encourage holistic approaches to success.

Additional Peak Demand Reduction Programs and Initiatives

Utility Peak Demand Reduction Programs and Initiatives

Utilities have access to information about where potential constraints in supply are projected in the transmission and distribution systems (wires or pipes), access to customer energy use data, and existing relationships with customers to pilot additional demand reduction programs. To comply with the CEA and to ensure that programs include all customer segments, capture and adopt new technology and/or service models as available, maximize peak demand reduction, and manage transmission upgrades, utilities should file pilot or full peak demand reduction programs by year 5. Energy efficiency and demand response programs should be leveraged together wherever possible to maximize savings, quickly respond to changing market and grid conditions, and inform future program design.

The utilities should collaborate and share best practices on peak demand reduction programs that can be offered in each utility territory, but they are not required to be implemented in the first year. Additionally, since utility territories vary greatly in size, geography, demographics, and other key factors, it is critical that utilities have the ability to develop and file for peak demand reduction programs specific to their service territories. If an individual utility has ideas for peak demand reduction programs that may not suit the needs of other utility territories, utilities may file these territory-specific programs in addition to the core set of programs. In this case, utilities should work collaboratively, sharing successes and design ideas to enable successful programs to be tailored to fit as many territories as possible.

State Peak Demand Reduction Programs and Initiatives

New Jersey aims to manage and reduce peak demand for both electricity and natural gas by piloting programs and developing alternative rate designs in order to encourage customer-controlled demand flexibility, manage electric vehicle (EV) charging, and otherwise support demand response programs. In addition, as stated in the 2019 Energy Master Plan, the State will encourage electrification in buildings and transportation, including developing new construction and retrofits to be “EV Ready” and “Demand Response Ready,” with subsequent managed demand or demand shifting. New Jersey is also exploring the development of a Clean Peak Standard

and is in the midst of a proceeding to evaluate opportunities to install advanced metering infrastructure (AMI) and make related infrastructure upgrades across the state in order to support enhanced energy efficiency programs. AMI will be crucial in enabling grid modernization efforts, quickly collecting and parsing data to enable more effective energy efficiency and peak demand reduction programs, and providing New Jersey with a host of other benefits.

Appendix B: Detailed Program Timeline

Fiscal Year (FY) July 1-June 30	Program Year	Program Cycle	Proposed Evaluation Studies
Annual Filings	All		Retrospective BCA of Current Energy Efficiency and Peak Demand Reduction Programs Utility Portfolio Report Avoided Cost/NEB/NTG Reviews & Updates Protocols Review & Minor Updates
2019			Comprehensive Protocols Update Energy Efficiency Potential in NJ Study
2020		May 2020: Board Order on new programs	Multifamily Baseline Study
2021		Fall 2020: Utilities submit program filings April 2021: Anticipated Board action on filings	Prospective BCA Incorporation into Protocols of Code Compliance Savings Attribution Energy Code Compliance Baseline Commercial & Residential Baselines
2022	1	July 2021: New energy efficiency/peak demand reduction programs begin (new program cycle)	Comprehensive Protocols Update
2023	2	Triennial review	EE Market Potential Study Process Evaluations
2024	3	Utility program filings	Impact Evaluations
2025	4	New program cycle begins	
2026	5	Triennial review	Process Evaluations Market Needs Assessment Program Cycle Report
2027	6	Utility program filings	Impact Evaluations Prospective BCA Comprehensive Protocols Update
2028	7	New program cycle begins	Commercial & Residential Baseline
2029	8	Triennial review	Process Evaluations Program Cycle Report
2030	9	Utility program filings	Impact Evaluations Prospective BCA Comprehensive Protocols Update
2031	10	New program cycle begins	EE Market Potential Study
2032	11	Triennial review	Process Evaluations Impact Evaluations Program Cycle Report

Appendix C: Performance Requirements

Staff herein recommends the following targets, metrics, and weighting structure for program years one through five.

The initial proposals below mirror the recommendations that would result from the normal triennial review process, though the process for review for these initial program years has been modified from the normal triennial review and expanded as a result of the larger energy efficiency transition process that is occurring simultaneously. These initial recommendations also differ from the regular process in that the targets are expressed as percentages, while in the future they will be converted to actual MWh and therm values. Staff anticipates continuing to work with the utilities throughout the spring of 2020 to calculate actual MWh and therm values based on actual utility load data, per the process outlined in the "Application of Utility Targets" section above.

The recommendations below are based on stakeholder feedback, the results of the *Energy Efficiency Potential in New Jersey* study, and ongoing engagement with stakeholders and the Energy Efficiency Advisory Group, which has occurred since early 2019.

Below, Staff outlines recommendations related to the following ***for <u>each</u> program year and for each utility*** *(and, separately, each energy source, in instances where a utility is a provider of both electric and natural gas service)***:**

- Metrics (consistent for all utilities)
- Weighting Structure (consistent for all utilities)
- Overall Utility-Specific Annual Energy Use Reduction Targets
    - NJCEP Annual Energy Savings Targets
    - Utility Program Annual Energy Savings Targets

Staff anticipates recommending the following to the Board for deliberation in the spring of 2020, and, if adopted, applying them to years 1 through 5 of New Jersey's next generation of energy efficiency programs, following the New Jersey energy efficiency transition. As with future elements adopted as a result of a triennial review process, the metrics, weighting structure, and targets adopted for years 1 through 3 will be adopted as final, and those elements adopted for years 4 and 5 will be considered preliminary and subject to additional review during the next triennial review process.

These recommendations are based on current stakeholder discussions. Staff anticipates that, following the Board's adoption of metrics, weighting structures, and targets, the utilities will design their programs in a way that is responsive to these established objectives and indicators. As part of their three-year program filings, utilities will include a recommended numeric input value (QPI) for each metric adopted by the Board, and for each program year. The QPIs will be based on Staff's guidance related to the definition of each applicable metric and based on that data, as applicable for the utility territory. They will be calculated separately for gas and electric.

As noted in the Program Administration section of this proposal, Staff recommends that the utilities work together to develop core programs in response to both the energy use reduction targets established for each utility and the metrics (and weighting structure) established to assess utility performance.

Summary: Years 1-5

Metrics and Weights

In the initial program years, Staff proposes that some metrics be phased in to allow time for utilities and the State to collect and report the data required to establish the consistent definitions across jurisdictions and thus the inputs for calculating the QPIs associated with each metric. Stakeholders supported a phase-in of the metrics in order to allow utilities time to develop and ramp up program implementation.

In years 1 through 3, utilities and NJCEP will be required to track and report on all metrics. However, incentives and penalties will be based on performance in the annual energy savings and lifetime energy savings metrics only. The weighting structure will be adjusted accordingly.

In years 4 and 5, utilities and NJCEP will be required to track and report performance on all metrics. Incentives and penalties will be based on performance in all seven metrics. The weighting structure will incorporate the seven metrics and will be consistent for both electric and gas targets in each program year. NJCEP will report savings associated with all metrics but will not receive incentives or penalties based on performance.

Subsequently, targets, metrics, and QPIs will be established and reviewed during the triennial review process.

Targets

The targets below are intended to reflect the overall annual energy use reduction targets for each utility territory and include savings anticipated to come from programs administered by NJCEP. Staff has also included proposed NJCEP savings targets for stakeholder review and input. For each program cycle, following stakeholder comment as a part of the triennial review and prior to Board action, Staff anticipates working with the utilities to develop specific associated MWh and therm values for each utility based on the targets below, via the process detailed above.

Over the first four program years, the targets will ramp up to targets that fulfill, at minimum, the year 5 benchmarks of 2% annual electric savings and 0.75% natural gas savings mandated as a minimum in Section 87.9(a) of the CEA. During initial program years, utility targets may be less than 2% for annual electric savings and less than 0.75% for annual gas savings to account for the necessary program ramp-up and based on the *Energy Efficiency Potential in New Jersey*. Thereafter, the targets will be adjusted on a utility-specific basis to promote the achievement of all cost-effective energy efficiency potential in each utility territory. Draft targets specific to each utility and energy source are detailed below.

The targets proposed below for years 1 through 5 are consistent among utilities (separately for electric and natural gas). Though they may not be similarly consistent in future years, the *Energy Efficiency Potential in New Jersey* study established that, in the initial program years, there is sufficient potential for energy efficiency in each utility territory to achieve the below-stated targets. In future years, following a comprehensive baseline study of energy consumption in the state and a subsequent market potential study, the targets will be adjusted appropriately through the triennial review process, in keeping with the CEA's requirements.

Year 1 (FY22) Performance Requirements

Metrics & Weighting Structure

The metrics and associated weighting structure for post-energy efficiency transition program year 1 (FY22) will be consistent for both electric and gas utility targets:

1. Annual Energy Savings – 40%
3. Lifetime Energy Savings – 60%

Targets

The targets for program year 1 (FY22) will be:

Electric Utilities

Utility Territory	**Overall Utility-Specific Annual Energy Use Reduction Target** *Net Savings (% of load)*	**NJCEP Annual Energy Savings Target** *Net Savings (% of load)*	**Utility Program Annual Energy Savings Target** *Net Savings (% of load)*
Atlantic City Electric	0.75%	0.177%	0.573%
Jersey Central Power & Light	0.75%	0.177%	0.573%
Public Service Electric & Gas	0.75%	0.177%	0.573%
Rockland Electric	0.75%	0.177%	0.573%

Gas Utilities

Utility Territory	**Overall Utility-Specific Annual Energy Use Reduction Target** *Net Savings (% of load)*	**NJCEP Annual Energy Savings Target** *Net Savings (% of load)*	**Utility Program Annual Energy Savings Target** *Net Savings (% of load)*
Elizabethtown Gas	0.25%	0.0652%	0.1848%
New Jersey Natural Gas	0.25%	0.0652%	0.1848%
Public Service Electric & Gas	0.25%	0.0652%	0.1848%
South Jersey Gas	0.25%	0.0652%	0.1848%

Year 2 (FY23) Performance Requirements

Metrics & Weighting Structure

The metrics and associated weighting structure for post-Energy Efficiency Transition program year 2 (FY23) will be consistent for both electric and gas utility targets:

1. Annual Energy Savings – 40%
3. Lifetime Energy Savings – 60%

Targets

The targets for program year 2 (FY23) will be:

Electric Utilities

Utility Territory	**Overall Utility-Specific Annual Energy Use Reduction Target** *Net Savings (% of load)*	**NJCEP Annual Energy Savings Target** *Net Savings (% of load)*	**Utility Program Annual Energy Savings Target** *Net Savings (% of load)*
Atlantic City Electric	1.10%	0.260%	0.840%
Jersey Central Power & Light	1.10%	0.260%	0.840%
Public Service Electric & Gas	1.10%	0.260%	0.840%
Rockland Electric	1.10%	0.260%	0.840%

Gas Utilities

Utility Territory	**Overall Utility-Specific Annual Energy Use Reduction Target** *Net Savings (% of load)*	**NJCEP Annual Energy Savings Target** *Net Savings (% of load)*	**Utility Program Annual Energy Savings Target** *Net Savings (% of load)*
Elizabethtown Gas	0.50%	0.1304%	0.3696%
New Jersey Natural Gas	0.50%	0.1304%	0.3696%
Public Service Electric & Gas	0.50%	0.1304%	0.3696%
South Jersey Gas	0.50%	0.1304%	0.3696%

Year 3 (FY24) Performance Requirements

Metrics & Weighting Structure

The metrics and associated weighting structure for program year 3 (FY24) will be consistent for both electric and gas utility targets, and will be:

1. Annual Energy Savings – 40%
3. Lifetime Energy Savings – 60%

Targets

The targets for program year 3 (FY24) will be:

Electric Utilities

Utility Territory	**Overall Utility-Specific Annual Energy Use Reduction Target** *Net Savings (% of load)*	**NJCEP Annual Energy Savings Target** *Net Savings (% of load)*	**Utility Program Annual Energy Savings Target** *Net Savings (% of load)*
Atlantic City Electric	1.45%	0.343%	1.107%
Jersey Central Power & Light	1.45%	0.343%	1.107%
Public Service Electric & Gas	1.45%	0.343%	1.107%
Rockland Electric	1.45%	0.343%	1.107%

Gas Utilities

Utility Territory	**Overall Utility-Specific Annual Energy Use Reduction Target** *Net Savings (% of load)*	**NJCEP Annual Energy Savings Target** *Net Savings (% of load)*	**Utility Program Annual Energy Savings Target** *Net Savings (% of load)*
Elizabethtown Gas	0.75%	0.1955%	0.5545%
New Jersey Natural Gas	0.75%	0.1955%	0.5545%
Public Service Electric & Gas	0.75%	0.1955%	0.5545%
South Jersey Gas	0.75%	0.1955%	0.5545%

Year 4 (FY25) Performance Requirements *(preliminary)*

Metrics & Weighting Structure

The metrics and associated weighting structure for program year 4 (FY25) will be consistent for both electric and gas utility targets:

1. Annual Energy Savings – 10%
2. Annual Demand Savings – 5%
3. Lifetime Energy Savings – 20%
4. Lifetime of Persisting Demand Savings – 10%
5. Utility Cost Test (UCT) Net Present Value (NPV) of Net Benefits – 35%
6. Low-income Lifetime Savings – 10%
7. Small Business Lifetime Savings – 10%

Targets

The targets for program year 4 (FY25) will be:

Electric Utilities

Utility Territory	**Overall Utility-Specific Annual Energy Use Reduction Target** *Net Savings (% of load)*	**NJCEP Annual Energy Savings Target** *Net Savings (% of load)*	**Utility Program Annual Energy Savings Target** *Net Savings (% of load)*
Atlantic City Electric	1.80%	0.425%	1.375%
Jersey Central Power & Light	1.80%	0.425%	1.375%
Public Service Electric & Gas	1.80%	0.425%	1.375%
Rockland Electric	1.80%	0.425%	1.375%

Gas Utilities

Utility Territory	**Overall Utility-Specific Annual Energy Use Reduction Target** *Net Savings (% of load)*	**NJCEP Annual Energy Savings Target** *Net Savings (% of load)*	**Utility Program Annual Energy Savings Target** *Net Savings (% of load)*
Elizabethtown Gas	0.95%	0.2477%	0.7023%
New Jersey Natural Gas	0.95%	0.2477%	0.7023%
Public Service Electric & Gas	0.95%	0.2477%	0.7023%
South Jersey Gas	0.95%	0.2477%	0.7023%

Year 5 (FY26) Performance Requirements *(preliminary)*

Metrics & Weighting Structure

The metrics and associated weighting structure for program year 5 (FY26) will be consistent for both electric and gas utility targets:

1. Annual Energy Savings – 10%
2. Annual Demand Savings – 5%
3. Lifetime Energy Savings – 20%
4. Lifetime of Persisting Demand Savings – 10%
5. Utility Cost Test (UCT) Net Present Value (NPV) of Net Benefits – 35%
6. Low-income Lifetime Savings – 10%
7. Small Business Lifetime Savings – 10%

Targets

The targets for program year 5 (FY26) will be:

Electric Utilities

Utility Territory	**Overall Utility-Specific Annual Energy Use Reduction Target** *Net Savings (% of load)*	**NJCEP Annual Energy Savings Target** *Net Savings (% of load)*	**Utility Program Annual Energy Savings Target** *Net Savings (% of load)*
Atlantic City Electric	2.15%	0.508%	1.642%
Jersey Central Power & Light	2.15%	0.508%	1.642%
Public Service Electric & Gas	2.15%	0.508%	1.642%
Rockland Electric	2.15%	0.508%	1.642%

Gas Utilities

Utility Territory	**Overall Utility-Specific Annual Energy Use Reduction Target** *Net Savings (% of load)*	**NJCEP Annual Energy Savings Target** *Net Savings (% of load)*	**Utility Program Annual Energy Savings Target** *Net Savings (% of load)*
Elizabethtown Gas	1.10%	0.2868%	0.8132%
New Jersey Natural Gas	1.10%	0.2868%	0.8132%
Public Service Electric & Gas	1.10%	0.2868%	0.8132%
South Jersey Gas	1.10%	0.2868%	0.8132%

Appendix D: Types of Evaluations and Cost Tests

Program evaluation includes both retrospective (results-oriented) and prospective (forward-looking) elements. This cycle of continuous evaluation is a best practice that integrates learned experience with program planning.

Retrospective program evaluation

- Quantifies the ex post facto costs and benefits of programs.
- Quantifies the historic impacts of programs – in energy, environmental, economic, or other terms.
- Provides a qualitative review of program procedures, processes, participation, marketing, and other activities and recommendations for improving operations in the future.
- Assesses whether the performance of the organizations delivering programs warrant payment of performance incentives or disincentives (e.g., for achieving goals in a cost-effective manner).

Prospective program evaluation

- Identifies keys to program successes and/or failures so that the program elements associated with such successes are continued and/or applied to new initiatives where appropriate, and elements associated with failures are changed.
- Assesses whether programs can be improved to be more effective in other ways, with emphasis on behavioral factors – e.g. whether in attracting participants, increasing participant satisfaction, and/or improving the efficiency of service delivery.
- Considers which programs warrant continued investment and which do not (e.g. if the market is sufficiently transformed, or if new lower estimates of savings potential cannot justify market interventions).
- Assesses current baseline conditions of existing homes and businesses to determine the type and efficiency of equipment currently installed.
- Identifies new opportunities for cost-effective savings (e.g., market potential study).
- Estimates the economic impacts of future initiatives to determine whether they should be pursued (e.g., whether the benefits exceed the costs across feasible alternatives).
- Establishes market benchmarks (e.g. market share for a particular efficient product and degree of market transformation) and/or performance indicators against which future programs are to be measured.
- Undertakes a thorough review of the NJCEP Protocols used to measure energy savings and other program benefits to assure that they are technically accurate and consistent with current market conditions, thereby assuring a proper foundation for future evaluations.

Different types of evaluation are appropriate at different stages of an energy efficiency program, and thus frequency will vary with program cycle lengths.[1] At program creation, **Baseline Studies** and **Market Needs Assessments** are most useful and may be repeated every four to seven years depending also on external factors such as fluctuations in energy prices or changes in energy prices or minimum efficiency standards. Baseline Studies, a type of market assessment, help to determine physical attributes of the building stock, including saturation of energy savings equipment, and current energy practices and behaviors. Market Assessments additionally characterize market participants/transactions and establish the need for energy efficiency

[1] Department of Energy, "Program Evaluation: Program Life Cycle," https://www.energy.gov/eere/analysis/program-evaluation-program-life-cycle; accessed August 16, 2018.

programming towards an optimally-functioning market or provide evidence that the program is no longer needed.

A **Market Potential Study** assists program designers in quantifying the size of energy efficiency resources in the jurisdiction and in identifying specific opportunities for energy savings. Both Baseline studies and Market Potential studies should be objective, but there is value in giving a core role to those entities most involved in program administration given their expertise. While a multi-family baseline study is now underway, prior baseline studies for NJCEP were last conducted in 2000-2001. A limited Market Needs Assessment for NJCEP was last conducted in 2006. A Market Potential Study was just conducted in 2019.

Once an energy efficiency program is underway, best practices recommend several additional evaluations. These include a **Process Evaluation** every two to three years to weigh in on program efficiency, existence of barriers, and opportunity costs and to answer any ad-hoc questions regarding program operations. It is important that Process Evaluations are independent, but program administrators need to participate fully to maximize the benefits of results. A Process Evaluation was last undertaken by NJCEP in 2004.

It is recommended that an **Impact Evaluation** be performed every three to five years to determine program outcomes. Impact Evaluations quantify the directly achieved program energy savings benefits, thus independence from the program administrators is key. An Impact Evaluation of some small renewable energy programs was performed for NJCEP in 2015 and an earlier Customer On-site Renewable Energy (CORE) program was evaluated in 2009, but the energy efficiency programs have not been evaluated since 2009. It is also a best practice to conduct a Process and/or Impact Evaluation at the conclusion of a program to document the overall effectiveness of the program in terms of operations and program induced quantitative changes, respectively. **Benefit-cost Analysis** is also critical for evaluating cost-effectiveness of continuing programs. BCA could be conducted every three to five years, in line with multi-year program cycles, or more regularly. NJCEP conducts BCA and updates associated avoided costs annually.

Appendix E: Program Budget Projections

The following cost to achieve scenarios are based on the program administration structure detailed in this straw proposal. The budgets and savings targets for implementation were modeled based on nation-leading programs in Massachusetts and Rhode Island. The analysis began by mapping programs from these states to the programs that New Jersey intends to implement, as detailed above. The budgets and savings were scaled using past performance and future plans for these states in order to align with New Jersey's makeup of electric and gas load by sector—residential and commercial/industrial. The target costs to achieve, below, were determined by taking annual dollars per MWH or therms from the referenced programs and multiplying them by the sector-level MWH and therm projections needed to attain the savings targets in New Jersey. This analysis results in scenarios that will allow New Jersey to achieve the benchmark year 5 savings targets of 2.15% of electric usage and 1.10% of gas usage and provides guidance regarding the appropriate program costs

The budgets and savings for years 1-4 are based on the year 5 target. The model assumes that savings ramp up from year 1 to the year 5 values in accordance with the ramp-rates that were used in the "Energy Efficiency Potential Study" that was prepared for the BPU in 2019. While the annual budgets will vary, the target costs to achieve remain constant throughout the period. To allow for flexibility and to account for some level of uncertainty, cost ranges were established within +/- 10% of the original estimates. Utilities should file programs whose costs fall within the below-detailed sector-based costs to achieve ranges.

Figure 1: Cost to achieve electric savings

	Cost to Achieve ($/Annual kWh)		
State	**Low**	**Mid**	**High**
Commercial & Industrial	$0.32	$0.36	$0.39
Residential	$0.64	$0.71	$0.78
Total - All Programs	**$0.33**	**$0.37**	**$0.41**

	Cost to Achieve ($/Annual kWh)		
Utility	**Low**	**Mid**	**High**
Commercial & Industrial	$0.30	$0.33	$0.36
Residential	$0.60	$0.67	$0.73
Multifamily	$1.09	$1.21	$1.33
Total - All Programs	**$0.39**	**$0.44**	**$0.48**

	Cost to Achieve ($/Annual kWh)		
Co-Managed	**Low**	**Mid**	**High**
Residential	$0.13	$0.14	$0.16
Low Income	$1.89	$2.10	$2.31
Total - All Programs	**$0.23**	**$0.26**	**$0.28**

Figure 2: Cost to achieve gas savings

	Cost to Achieve ($/Annual Therm)		
State	**Low**	**Mid**	**High**
Commercial & Industrial	$3.88	$4.31	$4.74
Residential	$5.27	$5.86	$6.44
Total - All Programs	**$4.10**	**$4.55**	**$5.01**

	Cost to Achieve ($/Annual Therm)		
Utility	**Low**	**Mid**	**High**
Commercial & Industrial	$3.19	$3.54	$3.90
Residential	$7.26	$8.07	$8.87
Multifamily	$16.82	$18.69	$20.56
Total - All Programs	**$7.12**	**$7.91**	**$8.71**

	Cost to Achieve ($/Annual Therm)		
Co-Managed	**Low**	**Mid**	**High**
Low Income	$25.15	$27.95	$30.74
Total - All Programs	**$25.15**	**$27.95**	**$30.74**

Appendix F: Minimum Filing Requirements

Staff proposes the following changes to the current MFRs, with proposed additions underlined and proposed deletions struck out.

I. General Filing Requirements

a. The utility shall provide with all filings, information and data pertaining to the specific utility-led and co-managed program proposed, as set forth in applicable sections of N.J.A.C. 14:1-5.11 and N.J.A.C. 14:1-5.12.

b. All filings shall contain information and financial statements for the proposed program(s) in accordance with the applicable Uniform System of Accounts that is set forth in N.J.A.C. 14:1-5.12. The utility shall provide the Accounts and Account numbers that will be utilized in booking the revenues, costs, expenses, and assets pertaining to each proposed program so that they can be properly separated and allocated from other regulated and/or other programs.

c. The utility shall provide supporting explanations, assumptions, calculations, and work papers for each proposed program and cost recovery mechanism petition filed under N.J.S.A. 48:3-98.1, including the rationale for selecting the approach included in its proposed program(s), and for all qualitative and quantitative analyses therein. The utility shall provide electronic copies of all materials and supporting schedules, with all inputs and formulae intact.

d. The filing shall include testimony supporting the petition, including all proposed programs.

e. For any proposed program, the utility shall be subject to the requirements in this and all subsequent Sections. If compliance with Part V of these requirements would not be feasible for a particular program or sub-program, the utility may request an exemption but must demonstrate why such exemption should be granted. Examples of historical situations that have qualified for exemption include programs that had an educational rather than equipment-based focus and programs that introduced novel ideas where documentation supporting estimated costs/benefits may not be easily produced.

f. If the utility is filing for an increase in rates, charges, etc. or for approval of a program that may increase rates/changes to ratepayers in the future, the utility shall include a draft public notice with the petition and proposed publication dates.

II. Program Description

a. The utility shall provide a detailed description of each proposed program for which the utility seeks approval, including, if applicable:
    i. Program description/design, including an evaluation plan
    ii. Target market segment/efficiency, including eligible customers and measures/services
    iii. Existing incentives
    iv. Proposed incentives
    v. Program delivery method

vi. Contractor role: The utility shall provide the extent to which the utility intends to utilize employees, contractors, or both to deliver the program(s) and, to the extent applicable, the criteria the utility will use for contractor selection.

vii. Estimated program participants, by year

viii. Projected energy savings and associated calculations for each program year

- Net annual energy savings
- Net annual peak demand savings
- Net lifetime energy savings
- Net lifetime demand savings
- Net lifetime energy savings derived from qualifying low-income customers
- Net lifetime savings derived from qualifying small business customers

ix. Program budget, by year

x. Program costs, by year, broken down into the following categories: administration; marketing and sales; contractor training; incentives (including rebates and low- or no-interest loans); inspections and quality control; and evaluation. To the extent that the Board directs the New Jersey Clean Energy Program ("NJCEP") to report additional categories, the utility shall provide additional categories, as applicable.

xi. Implementation plan, by year, for all proposed programs[1]

xii. Marketing plan: The utility shall provide a description of where and how the proposed program(s)/project(s) will be marketed or promoted throughout the demographic segments of the utility's customer base. This shall include an explanation of how the specific service, along with prices, incentives, and energy bill savings for each proposed program/project, will be conveyed to customers, where available and applicable. The marketing plan shall also include strategies to address known market barriers and shall express the plan for collaborating with Board staff and the Marketing & Communications Working Group (MC WG) to coordinate on marketing plans.

xiii. ~~Market barriers~~[2]

xiv. Relationship to existing programs[3]

xv. Relationship to New Jersey state energy policy: The utility shall provide a detailed description of how the proposed program(s) comport with New Jersey state energy policy as reflected in reports, including but not limited to the prevailing New Jersey Energy Master Plan and the greenhouse gas emissions reports issued by the New Jersey Department of Environmental Protection pursuant to N.J.S.A. 26:2C-42(b) and (c) and N.J.S.A. 262:2C-43 of the New Jersey Global Warming Response Act, N.J.S.A. 26:2C-37 *et seq*.[4]

~~xvi. Anticipated job creation~~[5]

~~xvii. Environmental emissions savings~~[6]

b. The utility shall provide the following information about the proposed portfolio:

i. Quality assurance plan, including resolution of customer complaints: The utility shall provide a detailed description of the process(es) for ensuring the quality of the programs and the process(es) for resolving any customer complaints related to the programs.

[1] Staff requests stakeholder input about the definition of this requirement.
[2] Staff proposes to assess this information in the EM&V process.
[3] Staff requests input about whether this information is no longer applicable or whether it should be more fully defined.
[4] Staff requests input about whether this information is no longer applicable, should remain a filing requirement, or should be considered in the EM&V process.
[5] Staff proposes to assess this information in the EM&V process.
[6] Staff proposes to asses this information in the EM&V process.

ii. Total budget summary, including an annual budget summary
iii. Benefit-cost analysis (as defined in Section V)
iv. EM&V strategies/plan (as defined in Section VI)
v. Assessment of how the programs comprising the portfolio are designed to achieve the targets established pursuant to the utility's quantitative performance indicators (as defined in Section VII)
vi. Reporting plan (as defined in Section VIII)

III. Additional Filing Information

~~The utility shall describe whether the proposed program(s) will generate incremental activity in the energy efficiency/ conservation/ renewable energy marketplace and what, if any, impact on competition may be created, including any impact on employment, economic development, and the development of new business, with all supporting documentation. This shall include a breakdown of the impact on the employment within this marketplace as follows: marketing/sales, training, program implementation, installation, equipment, manufacturing, evaluation, and other applicable markets. With respect to the impact on competition the analysis should include the competition between utilities and other entities already currently delivering the service in the market or new markets that may be created, where applicable. The analysis should also address competition with other entities already currently delivering the service in the market and new markets that may be created, where applicable.~~[7]

a. a. The utility shall propose the method for treatment of Renewable Energy Certificates ("RECs"), including solar incentives, or any other renewable energy incentive developed by the Board of Public Utilities ("BPU" or "Board"), including Greenhouse Gas Emissions Portfolio and Energy Efficiency Portfolio Standards including ownership and use of the certificate revenue stream(s).

b. b. The utility shall also propose the method for treatment of any air emission credits and offsets, including Regional Greenhouse Gas Initiative carbon dioxide allowances and offsets, including ownership and use of the certificate revenue stream(s). For programs that are anticipated to reduce electricity sales in its service territory, the utility shall quantify the expected associated annual savings in REC, solar incentive, and any other renewable energy incentive costs.

IV. Cost Recovery Mechanism

a. The utility shall provide appropriate financial data for the proposed program(s), including estimated revenues, expenses, and capitalized investments for each of the first three years of operations and at the beginning and end of each year of the three-year period. The utility shall include pro forma income statements for the proposed program(s) for each of the first three years of operations and actual or estimated balance sheets at the beginning and end of each year of the three-year period.
b. The utility shall provide detailed spreadsheets of the accounting treatment of the proposed cost recovery, including describing how costs will be amortized, which accounts will be debited or

[7] Proposed to be moved to and assessed as part of EM&V plans and reporting or at a statewide level by program administrators collaboratively

credited each month, and how the costs will flow through the proposed method of recovery of program costs.

c. The utility shall provide a detailed explanation, with all supporting documentation, of the recovery mechanism it proposes to utilize for cost recovery of the proposed program(s), including proposed recovery through the Societal Benefits Charge, a separate clause established for these programs, base rate revenue requirements, government funding reimbursement, retail margin, and/or other mechanisms.
d. The utility's petition for approval, including proposed tariff sheets and other required information, shall be verified as to its accuracy and shall be accompanied by a certification of service demonstrating that the petition was served on the New Jersey Division of Rate Counsel simultaneous to its submission to the Board.
e. The utility shall provide a rate impact summary by year for the proposed program(s) and a cumulative rate impact summary by year for all approved and proposed programs showing the impact of individual programs, based upon a revenue requirement analysis that identifies all estimated program costs and revenues for each proposed program on an annual basis. Such rate impacts shall be calculated for each customer class. The utility shall also provide an annual bill impact summary by year for each program, and an annual cumulative bill impact summary by year for all approved and proposed programs showing bill impacts on a typical customer for each class.
f. The utility shall provide, with supporting documentation, a detailed breakdown of the total costs for the proposed program(s), identified by cost segment (capitalized costs, operating expenses, administrative expenses, etc.). This shall also include a detailed analysis and breakdown and separation of the embedded and incremental costs that will be incurred to provide the services under the proposed program(s), with all supporting documentation. Embedded costs are costs that are provided for in the utility's base rates or through another rate mechanism. Incremental costs are costs associated with or created by the proposed program that are not provided for in base rates or another rate mechanism.
g. The utility shall provide a detailed revenue requirement analysis that clearly identifies all estimated annual program costs and revenues for the proposed program(s), including effects upon rate base and pro forma income calculations.
h. The utility shall provide, with supporting documentation: (i) a calculation of its current capital structure, as well as its calculation of the capital structure approved by the Board in its most recent electric and/or gas base rate cases, and (ii) a statement as to its allowed overall rate of return approved by the Board in its most recent electric and/or gas base rate cases.
i. If the utility is seeking carrying costs for a proposed program, the filing shall include a description of the methodology, capital structure, and capital cost rates used by the utility.
j. A utility seeking incentives shall provide all supporting justifications and rationales for incentives, along with supporting documentation, assumptions, and calculations. Utilities that have approved rate mechanisms or incentive treatment from previous cases and are not seeking a modification of such treatment through the current filing are not subject to this requirement.

V. Benefit-Cost Analysis

a. The utility shall provide a detailed analysis with supporting documentation of the net benefits associated with the proposed program(s) and portfolio, including, if appropriate, an estimate of its projected avoided costs study, with supporting documentation and work papers. This estimate shall include avoided costs associated with, at a minimum, avoided fuel use, generation, losses, capacity

requirements, transmission and distribution costs, emissions allowances, RECs and SRECs, and any savings associated with energy and capacity market impacts (i.e., DRIPE) of the program. This cost-benefit analysis should include consideration of seasonal savings and energy prices, and shall be performed on a Net Present Value ("NPV") basis specifying all financial assumptions, including inflation rate and discount rate. The value of the avoided environmental impacts and the environmental benefits and the value of any avoided or deferred energy infrastructure should be stated separately.

b. The utility shall conduct a benefit-cost analysis of the programs and portfolio using the New Jersey Test, Participant Cost Test, Program Administrator Cost Test, Ratepayer Impact Measure Test, Total Resource Cost Test, and Societal Cost Test that assesses all program costs and benefits from a societal perspective i.e., that includes the combined financial costs and benefits realized by the utility and the customer. The utility may also provide any cost benefit analysis that it believes appropriate with supporting rationales and documentation.
c. The utility must demonstrate how the results of the tests in section V(b) support Board approval of the proposed program(s), including how the programs are designed to achieve a benefit-to-cost ratio greater than or equal to 1.0 at the portfolio level when using the New JerseyTest.
d. Renewable energy programs shall not be subject to a cost/benefit test but the utility must quantify all direct and indirect benefits resulting from such a proposed program as well as provide the projected costs. The utility must also demonstrate how such a proposed program will support energy and environmental statewide planning objectives, such as attainment of the Renewable Portfolio Standard and any emission requirements.
e. The level of energy and capacity savings utilized in these calculations shall be based upon the most recent Protocols to Measure Resource Savings approved by the Board to measure energy savings for the NJCEP. To the extent that a protocol does not exist or an alternative protocol is proposed for a filed program, the utility must submit a measurement methodology for the program or contemplated measure for approval by the Board.
f. For cost effectiveness calculations, the utility shall also estimate and reflect in the energy and capacity savings any free rider and spillover~~free driver~~ effects, i.e., savings associated with participating customers who would have implemented energy efficiency or renewable energy measures without N.J.S.A. 48:3-98.1 benefits or incentives.

VI. Evaluation, Measurement, and Verification

a. ~~The utility shall provide a quantitative analysis and projections of both the total and percentage reduction in its annual kWh and/or therm sales as a result of the proposed programs, as well as of the projected total in peak load reduction expected from the proposed program(s), over the lifetime of the measures included in the program(s). The utility shall also provide this information expressed as a percentage reduction relative to its current annual peak load.~~
b. ~~For renewable energy programs, the utility shall provide the anticipated contribution to annual KWh and peak load on an annual basis and for the service life of the renewable energy measure.~~
c. EM&V plan: An EM&V plan for each program and the portfolio will include the methodology and strategies for monitoring program and portfolio progress on performance related to the utility's targets established pursuant to the quantitative performance indicators.
    i. ~~Methodology for monitoring program progress on program areas 4 – 15 as described in Section II(a)~~
    ii. ~~Program progress results for each of the 12 program areas as compared to projections~~

~~iii. Lessons learned in implementing the program with a focus on those related to exceeding or not reaching anticipated goals~~

~~iv. Recommended program enhancements~~

VII. Quantitative Performance Indicators: Targets

a. The utility shall provide a description of how the proposed portfolio achieves the targets established for each utility pursuant to the following quantitative performance indicators:

i. Net annual energy savings
ii. Net annual peak demand savings
iii. Net lifetime energy savings
iv. Net lifetime demand savings
v. Net present value of net benefits as determined by the Utility Cost Test
vi. Net lifetime energy savings derived from qualifying low-income customers
vii. Net lifetime savings derived from qualifying small business customers

VIII. Reporting Plan: The utility shall provide a plan to comply with the following reporting requirements:

a. Quarterly progress reports: No later than 60 days following the end of each quarter, the utility shall submit a user-friendly, public report, with accompanying spreadsheet(s), that includes an overview of program performance, a narrative about customer participation and incentives paid, and results on the following program-level parameters compared to program projections and goals:[8]

i. Energy savings
ii. Number of program participants: total, low-income, and small business
iii. Program expenditures

b. Annual progress reports: No later than 75 days following the end of each program year, the utility shall submit a user-friendly, public report, with accompanying spreadsheet(s), that includes the same program-level data and accompanying progress/performance narratives as those that are included in the quarterly reports. The annual report will show overall progress and performance of programs that are seasonal or cyclical in nature. In addition, the annual report shall include the utility program administrator's initial and final benefit-cost test results for the programs and portfolio (as defined in Section V), assessment of the portfolio's compliance with the targets established pursuant to the QPIs (as defined in Section VII), and any proposed changes or additions for the next year or cycle.

c. Triennial reports:

i. Progress reports: No later than 90 days following the end of the third program year, the utility shall submit a public report that takes the place of the annual report for that year. This report will be identical to the annual report but will also review the portfolio's data and assess the portfolio's success over the three-year program cycle.

[8] Staff request stakeholder feedback on whether the list should also include rebates paid, number of projects completed, and number of projects in progress; Staff also requests feedback on whether this report should be a user-friendly, public report or simply a spreadsheet submitted to the State.

ii. Evaluation studies: No later than 365 days following the end of the third program year, the utility shall submit the process and impact evaluations pursuant to requirements issued by the Board.