STATE OF MAINE
PUBLIC UTILITIES COMMISSION

March 7, 2013

Honorable John J. Cleveland, Senate Chair
Honorable Barry J. Hobbins, House Chair
Energy, Utilities and Technology Committee
115 State House Station
Augusta, Maine 04333

Re: Commission Order on Efficiency Maine Trust Triennial Plan

Dear Senator Cleveland and Representative Hobbins:

On March 6, 2013, the Commission issued the attached Order approving portions of Efficiency Maine Trust's (EMT) Triennial Plan. Specifically, the Commission approved EMT's Base Triennial Plan, and, as contemplated by 35-A M.R.S.A. § 10110(5), the Recommended Electric MACE Triennial Plan.[1] The Commission declined to approve the portion of EMT's proposed MACE Plan that pertains to natural gas MACE or distributed generation MACE, but EMT is not prohibited from resubmitting such plans at a future date.

The Electric Efficiency and Conservation Programs statute (Electric Conservation Statute), provides that the Commission, in accordance with the Triennial Plan, "shall assess each transmission and distribution utility based on the utility's gross operating revenue as necessary to realize all available energy efficiency and demand reduction resources in this State that are cost-effective, reliable and feasible"[2] after consideration of other sources of

[1] MACE stands for maximum achievable cost-effective electric efficiency. As discussed in detail in the Order, the Recommended Electric MACE Triennial Plan is 75% of EMT's Electric MACE Plan. The Commission also approved EMT's Electric MACE Plan, as corrected during the course of the proceeding, to the extent that EMT is able to obtain funding from sources other than the Funding Statutes contained in the Efficiency Maine Trust Act (for example, federal funding) to make up the difference between the Recommended MACE and EMT's Electric MACE.

[2] All available energy efficiency and demand reduction resources in this State that are cost-effective, reliable and feasible are referred to interchangeably in the Order as MACE.

funding for conservation programs described in the statute.[3] 35-A M.R.S.A. § 10110(5). The Electric Conservation Statute prohibits the Commission from increasing the electric system benefit charge, however, until the Legislature has approved EMT's budget. *Id.*

To achieve the MACE resources reflected in the Recommended Electric MACE Plan, the electric SBC would need to be increased from the current base assessment amount of $0.00145 per kWh (0.145¢ per kWh) to $0.00230 per kWh (0.230¢ per kWh) in Plan Year 1 (FY 2014), $0.00289 per kWh (0.289¢ per kWh) in Plan Year 2 (FY 2015), and $0.00329 per kWh (0.329¢ per kWh) in Plan Year 3 (FY 2016). At these levels, the total ratepayer assessment would be $20.8 million in Plan Year 1 (FY 2014), $26.1 million in Plan Year 2 (FY 2015), and $29.7 million in Plan Year 3 (FY 2016).

Through this letter, the Commission requests that the Committee initiate the process for the required legislative review of EMT's budget and the Commission's recommended increase to the electric SBC in accordance with the approved Recommended Electric MACE Plan. The Commission looks forward to working with the Committee during this process.

Sincerely,

Paulina McCarter Collins, Esq.
Legislative Liaison

Attachment
cc: Energy, Utilities and Technology Committee Members
Jean Guzzetti, Legislative Analyst
Michael Stoddard, EMT Executive Director

[3] Other sources of funding include (A) the amount of assessment under the base electric system benefit charge pursuant to 35-A M.R.S.A. § 10110(4); (B) the funding for conservation programs provided by the Regional Greenhouse Gas Initiative (RGGI) Trust fund pursuant to § 10119; (C) the amount of payments received from the forward capacity market as a result of conservation programs funded under the Efficiency Maine Trust Act; and (D) any other predictable sources of funding for or investment in conservation programs. *Id.*

STATE OF MAINE
PUBLIC UTILITIES COMMISSION

Docket No. 2012-00449

March 6, 2013

EFFICIENCY MAINE TRUST
REQUEST FOR APPROVAL
OF SECOND TRIENNIAL PLAN

ORDER

WELCH, Chairman; LITTELL and VANNOY, Commissioners

I. SUMMARY

In this Order, we approve the portions of Efficiency Maine Trust's (EMT) Triennial Plan that include the Base Triennial Plan, and the Recommended Electric MACE Triennial Plan (as defined herein) as contemplated by 35-A M.R.S. § 10110(5).[1] We also approve EMT's Electric MACE Plan[2] to the extent that EMT is able to obtain funding from sources other than the Funding Statutes to make up the difference between the Recommended MACE and EMT's Electric MACE.[3] We find that the Plans reasonably explain how the programs funded by the Funding Statutes will satisfy the requirements of those statutes and that the performance metrics included in the Plans are reasonable and in the public interest.

[1] Commissioner Littell's partial concurrence is attached as part of this Order.

[2] The EMT Electric MACE Plan we approve in this Order is a modification of the Electric MACE Plan that EMT originally proposed (the approved, corrected MACE plan is hereinafter referred to as "EMT Electric MACE Plan" and EMT's initial MACE Plan is hereinafter referred to as "Original EMT Electric MACE Plan"). The approved EMT Electric MACE Plan excludes a collection of measures that EMT noted in its exceptions were inadvertently contained in the Original EMT MACE Plan proposal. Those measures have been removed from the Electric MACE Plan because they had significant fossil fuel savings benefits that were relied upon to screen positive for cost-effectiveness. EMT Exception No. 9 at 14-15. The Recommended Electric MACE Plan that we approve in this order is 75% of EMT's Electric MACE Plan, as discussed in detail below in Section IV.D.

[3] Funding Statutes are the statutes referenced in 35-A M.R.S. § 10104(4)(D) of the Efficiency Maine Trust Act that generate resources that may be used as sources of funding to implement EMT's Triennial Plan. These statutes include the long-term contracting statute (section 3210-C), the Electric Efficiency and Conservation Program statute (section 10110), the Natural Gas Conservation Program (section 10111), and the Heating Fuels Efficiency and Weatherization Fund (section 10119).

We do not approve the portion of EMT's proposed MACE Plan that pertains to natural gas MACE or distributed generation MACE, but we permit EMT to submit an updated natural gas and/or distributed generation MACE proposal that we will consider at a future date, if and when it is filed.

Finally, pursuant to 35-A M.R.S. § 10110, we recommend that the Legislature's Joint Standing Committee on Energy, Utilities, and Technology approve an increase to the electric system benefit charge (SBC) that would result in SBC collections of $20,808,484 in Fiscal Year (FY) 2014, $26,148,100 in FY 2015 and $29,683,677 in FY 2016 to provide funding forthe Recommended Electric MACE Plan, as discussed in more detail below.[4]

II. PROCEDURAL HISTORY

A. Overview of Efficiency Maine Trust Act and Triennial Plan

In 2009, the Legislature enacted the Efficiency Maine Trust Act (Act), which removed Efficiency Maine from its prior role as a division within the Maine Public Utilities Commission and established EMT as an independent agency for the purposes developing, planning, coordinating and implementing programs to promote energy efficiency and increased use of alternative energy resources in the State. 35-A M.R.S. § 10101 *et seq.*

The Act directed EMT to develop a Triennial Plan, in consultation with entities and agencies engaged in delivering efficiency programs in the State, to lay out EMT's program implementation strategies and budgets over a prospective three-year planning period (Plan Period). 35-A M.R.S. § 10104(4). The Act requires that the Triennial Plan be approved by the Efficiency Maine Trust Board (EMT Board) and that, upon approval by the Board, the Triennial Plan be submitted to the Commission for review and approval.[5]

---

[4] Our recommendation regarding the increased electric SBC funding for Recommended Electric MACE represents the Commission's assessment of the level of efficiency measures and programs for which we have a high level of confidence that ratepayer money would be used cost-effectively. Our recommendation does not constitute an opinion regarding the Legislature's policy decisions with respect to the use of ratepayer funds. Additionally, our recommendation regarding the amount of Electric MACE that should be funded by Maine's ratepayers through an increase in the SBC as reflected in the Recommended MACE Plan does not limit EMT from implementing programs to achieve MACE at the levels included in EMT's Electric MACE Plan if some other source of funding other than the Funding Statutes is obtained (e.g. federal funding).

[5] One of the components of the Commission's review is a determination of whether the Plan complies with the requirements of the Capacity Resource Adequacy statute under 35-A M.R.S. § 3210-C (Long-Term Contract Statute), the Electric Efficiency and Conservation Program under 35-A M.R.S. § 10110 (Electric

In June 20, 2012, the Commission approved EMT's Second Update to its First Triennial Plan, which covered fiscal years (FY) 2011 through 2013, and approved a remaining portion related to Regional Greenhouse Gas Initiative (RGGI) Trust funded programs in September 11, 2012.

B. Comments Regarding Commission's Oversight Role

On September 17, 2012, in anticipation of EMT's filing of the Second Triennial Plan (Plan) for approval by the Commission, we opened this docket (2012-00449) and provided an opportunity for comment on the Commission's role in reviewing the Plan and other related oversight issues. The Commission Staff sought comments from interested persons on the Commission's interpretation of its statutory review obligation and on whether there are additional or different elements of a review that the Commission should be undertaking based on the statutory requirements, as well as the basis for any changes. The Commission also sought comment on the extent to which the Commission is statutorily obligated to independently verify the accuracy and reasonableness of the content of the Triennial Plan. Finally, the Commission sought comment on whether the Commission has an obligation to provide ongoing monitoring of EMT between Triennial Plan review proceedings and the basis for that obligation.

The Maine Community Action Association (MCAA) and the Office of the Public Advocate (OPA) submitted joint comments on September 27, 2012. The OPA and MCAA stated that while EMT is not a public utility, the statute grants the Commission extensive authority to oversee EMT and in this way is tantamount to the scope of regulatory oversight of a public utility in Maine. However, they noted limits on how substantive the Commission's review should be. For example, the OPA and MCAA contended that there is nothing in the Act that compels the Commission to verify the data inputs for energy savings estimates in EMT's proposed Plan, to ratify each program choice that the EMT Board has made, or to ensure fulfillment of each statutory performance target set out in section 10104(4)(F). The OPA and MCAA asserted that the Commission's role is to approve the proposed plan unless it "fails to reasonably explain" how the Plan's components will comply with the statute, but stated that they do not believe the Commission is required to propose a better or "more reasonable" outcome. Finally, they found value in the notion that the Commission should fund an EMT monitoring effort between Triennial Plans, but stated that the Commission is not required to do so.

The OPA/MCAA Comments also attached comments from the Regulatory Assistance Project (RAP). RAP advised that the general public interest for utility consumers is best served if the Commission is able to judge whether the energy efficiency plan and associated budget is likely to maximize value to consumers, not just

---

Conservation Statute), the Natural Gas Conservation Program statute under 35-A M.R.S. § 10111 (Natural Gas Conservation Statute), and the Heating Fuels Efficiency and Weatherization Fund under 35-A M.R.S. § 10119 (Heating Fuels Efficiency Statute). All of these statutes are hereinafter collectively referred to as Funding Statutes.

to avoid supply resources, but also to manage in the short and the long terms the transmission and distribution systems under the control of the utilities supervised by the Commission. RAP asserted that this is consistent with the Commission's role to ensure least cost, reliable service to support customers in the State.

On September 28, 2012, Douglas Baston submitted comments on behalf of North Atlantic Energy Advisors. Baston stated that other states not only review and approve energy efficiency plans, but they also establish performance metrics that are monitored on a continuing basis, either by commission staff or consultants or independent stakeholder bodies. Baston asserted that this ongoing professional oversight is beneficial because commissioners receive continuous feedback on program activity and results, exposure to outside ideas preventing insularity, and allows highly technical programs to be evaluated by technically proficient experts.

Environment Northeast (ENE) also submitted comments on September 28, 2012, stating that the Commission must review the Plan to ensure it has been designed to achieve the statutory targets set forth in Section 10104(4)(F). ENE asserted that the Commission also has the expertise and duty to review the Plan to ensure that it is in the ratepayers' best interest and that fulfilling this responsibility will involve examining the Plan to make sure that it lowers customers' electricity and natural gas bills to the maximum extent possible, and in a manner that does so at the lowest possible cost. ENE also stated that the Commission is required to ensure that the electric utility assessment will realize all available cost-effective energy efficiency and demand reduction resources and, if it will not, to recommend an increase to the Legislature to ensure that it will.

The Conservation Law Foundation (CLF) filed comments on September 28, 2012 agreeing with ENE's position and specifically emphasized the need for the Commission to develop a complete record supporting these determinations through discovery, technical conferences, and comments by Commission staff and stakeholders.

On September 28, 2012, Natural Resources Council of Maine (NRCM) submitted comments which agreed with the comments of the OPA and MCAA on the scope of the Commission's jurisdiction. NRCM stated that the most central obligation for the Commission is to approve or reject the Plan based on whether or not it reasonably explains how it will advance the statutory savings targets. NRCM agreed that the Commission does not need to ensure that EMT has optimized every management decision or allocation.

Additionally NRCM's commented on what the Commission should do differently from its review of the First Triennial Plan. First, NRCM stated that the Commission should make a clear finding or recommendation about capturing all achievable cost-effective efficiency resources for ratepayers. Second, NRCM asserted that the Commission should undertake a more formal process for review of the Plan than during the first review. Finally, NRCM contended that the Commission does not need to provide the very detailed review of each and every statutory requirement on

Efficiency Maine, nor does it need to provide the kind of low-level detailed review of the Plan that the Commission's consultant, Navigant, provided during the First Triennial Plan review.

The Commission's conclusions concerning our oversight role are included in Section III, Legal Standard of Review.

C. Second Triennial Plan

On November 27, 2012, the Efficiency Maine Trust submitted its Petition for Approval of the Triennial Plan for Fiscal Years 2014-2016 (Second Triennial Plan or Plan). The Plan describes the programs that EMT intends to deliver over FY 2014-2016 (Plan Period) and sets forth the budgets required to implement those programs and the performance metrics for assessing the programs' impact on energy efficiency. The Plan includes budgets for a base level of funding (Base Plan) and for a level of funding that would put EMT on the road to achieving the maximum achievable cost-effective level of energy efficiency (MACE) through 2021 (MACE Plan). The Plan includes proposed budgets for all available cost-effective electricity energy efficiency (Electric MACE) and natural gas energy efficiency (Natural Gas MACE).

In support of the Plan, EMT filed a Statement of Findings from the EMT Board indicating that the Plan is consistent with the statutory requirements. The Findings also provided an assessment of the EMT's progress toward, and the achievability of, the Statutory Targets. EMT filed other supplemental documents in support of the Plan including the Assessment of Energy-Efficiency and Distributed Generation Baseline and Opportunities by Cadmus Group, Inc. (2012) that estimates the maximum potential cost-effective energy efficiency available in Maine; the "Avoided Energy Supply Costs in New England – 2011 Report," conducted by Synapse Energy Economics, Inc., (2011) that provides the avoided energy supply costs to be used in estimating benefits associated with electric efficiency measures; the "Summary Report of Recently Completed Potential Studies and Recommendations for Maine's Energy Efficiency Programs," by Summit Blue Consulting LLC and ACEEE (2010) that estimates the cost-effective potential to save natural gas in Maine over the period of a decade; and all EMT program evaluations completed since approval of the First Triennial Plan.

On November 30, 2012, EMT filed budget and performance metric spreadsheets (Budget Spreadsheets) for each fiscal year of the Plan, which itemize the total budgets for each program by statutory and other funding source and provide the performance metrics (including energy savings) by program.

D. Discovery

Although our Triennial Plan proceedings are non-adjudicatory and our review of the First Triennial Plan was a relatively informal process, in response to requests and comments made by NRCM, ENE and CLF in the pre-Plan comment phase, we structured our process for reviewing EMT's Second Triennial Plan much

more like an adjudicatory case with technical conferences, prefiled testimony, a hearing, post-hearing briefing and an Examiner's Report.

Over the course of the discovery period, EMT responded to five sets of data requests from the Commission Staff, one set of data requests issued by ENE and one set of data requests issued by NRCM. EMT and the other interested parties also provided responses to two sets of oral data requests.

The Commission held a technical conference on December 11, 2012 where EMT and its consultants responded to questions about the Plan and EMT's initial data responses.

E. Prefiled Testimony

1. EMT Comments

On December 21, 2012, EMT responded to a Staff request for comments from EMT on its interpretation of the RGGI Trust Fund statute. 35-A M.R.S.A § 10109. EMT stated that it complies with the requirements of the RGGI statute with respect to the allocation of RGGI funds to programs that give priority to measures with the highest benefit-to-cost ratio and with respect to the expenditure of RGGI funds predominantly on the basis of a competitive bid process for long-term contracts. EMT pointed out, however, that it does not consider the RGGI funds to be generated by an assessment upon ratepayers.

EMT also commented that under the Electric Conservation Statute, the Legislature can only consider or approve EMT's budget or any increase to the electric system benefit charge assessment after the Commission first determines what the assessment should be and recommends it to the Legislative committee of jurisdiction. EMT pointed to the Plan and consultant reports in the record to assist the Commission in its consideration of "what is the maximum cost-effective savings that is available in Maine, what is an appropriate level of funding necessary to capture that available savings, and, by extension, what is an appropriate assessment to recommend."

2. ENE Prefiled Testimony

On December 28, 2012, ENE submitted the prefiled testimony of Dr. Abigail Anthony. Dr. Anthony recommends that the Commission approve EMT's MACE Plan because the Base Plan scenario will not achieve maximum achievable cost-effective efficiency and is not consistent with best practices that have been adopted by leading states that are strategically investing in all cost-effective energy efficiency. Dr. Anthony states that Maine's current level of energy efficiency funding ($23.5 million in 2012) lags behind other New England states such as Rhode Island ($91 million in 2014), Massachusetts ($82 million in 2012) and Vermont ($63 million in 2014).

Dr. Anthony states that according to its ENE-CLEAN Center 2009 Engine analysis, every $1 invested in cost-effective energy efficiency boosts Maine's

gross state product (Mane GSP) by between $4.90 and $12.40, and every $1 million in energy efficiency program spending creates between 59 and 133 job-years of employment. Dr. Anthony asserts that investing in the MACE Plan will: (i) reduce residential ratepayer bills by 6.2-6.7% ($60-$65) per year by 2025, (ii) increase Maine GSP by $1,405 million by 2025, and (iii) create 16,629 job years by 2025. Dr. Anthony states that similar to funding statutes in other states, 35-A M.R.S. § 10110(5) directs the Commission to make assessments as necessary to realize all energy efficiency that is cost-effective.

3. CLF and NRCM Prefiled Testimony

On December 28, 2012, CLF and NRCM submitted the prefiled testimony of Thomas Lyle of Optimal Energy, Inc. Mr. Lyle states that the base scenario does not provide EMT with the necessary resources to properly invest in all cost-effective energy efficiency and, because it would cause EMT to miss efficiency opportunities that would be costly to recoup in the future or lose opportunities altogether, it will actually increase the cost of energy efficiency in the long run. Mr. Lyle asserts that the MACE scenario funding and goals are cost-effective, reliable and feasible, and that the MACE scenario funding and goals are actually conservative. He notes that program administrators in other states that have historically achieved high annual savings rates, and plan to continue acquiring all cost-effective energy efficiency in the future, invest nearly twice as much as Maine does in energy efficiency programs.

4. Northern Utilities

On December 28, 2012, Northern Utilities, Inc. d/b/a Unitil (Northern) filed the prefiled testimony of Mark Lambert and Cindy Carroll (collectively Northern's witnesses). Northern's witnesses support a majority of the proposed programs in the Plan that are funded through the Natural Gas Conservation Program. However, Northern's witnesses have concerns regarding program design as it relates to the delivery of natural gas energy efficiency programs for residential customers who do not qualify for low-income programs.

Northern's witnesses point out that its customers are currently the only natural gas utility customers who pay the natural gas conservation assessment pursuant to § 10111 because Northern is the only utility that is currently serving more than 5,000 residential customers. Northern's witnesses state that it is unclear how funding from this assessment and programs delivered through EMT's Home Energy Savings Program will specifically benefit Northern's customers at a level commensurate with the contributions of Northern's customers into the Natural Gas Conservation fund. Northern's witnesses assert that as the only funders of the Natural Gas Conservation statute funds, Northern's customers deserve assurances that the benefits funded with those funds will flow to them. Northern's witnesses point out that the Home Energy Savings Program is a program to assist with air sealing – a benefit not exclusively related to the consumption of natural gas.

Additionally, Northern's witnesses indicate that it supports the funding contained in EMT's Base Plan, but not the additional funding proposed in the

MACE Plan. Northern's witnesses state that its customers are already subject to two energy efficiency assessments (the natural gas conservation assessment pursuant to 35-A M.R.S. § 10111 and the base electric efficiency conservation assessment pursuant to § 10110(4)) and there is a lack of clarity regarding the allocation of benefits of the natural gas-specific energy efficiency programs to Northern's customers, who bear the cost of the programs through the natural gas assessment. Northern's witnesses suggest that residential natural gas customers who do not qualify for low-income programs must be guaranteed access to § 10111-funded energy efficiency programs with a clear connection to the consumption of natural gas.

5. Hans Nicolaisen Comments

On January 4, 2013, the Commission received comments from Hans Nicolaisen, an interested citizen. Mr. Nicolaisen states that he has serious doubts about the effectiveness of some EMT's programs and that it would be a mistake to approve the MACE Plan without better auditing EMT's past performance. He asserts that much of the money that is awarded for Trust projects is done without sufficient thought.[6] On January 7, 2013, Mr. Nicolaisen submitted further comments, contending that EMT should have performed a more thorough analysis before awarding ARRA funds to towns through the Energy Efficiency and Conservation Block Grant Program.

F. Hearing

On January 8, 2013, the Commission held a hearing regarding EMT's proposed Plan and the prefiled direct testimony. Michael Stoddard, Elizabeth Crabtree and Ian Burnes of EMT, Max Chang and Rick Hornby from Synapse, and Bob Fratto and Jeffrey Huber from GDS appeared as witnesses on behalf of EMT. Thomas Lyle of Optimal Energy appeared as a witness on behalf of NRCM and CLF, Dr. Abigail Anthony testified on behalf of ENE, and Cindy Carroll testified for Northern Utilities.

G. Summary of Post-Hearing Arguments

1. Efficiency Maine Trust Post-Hearing Brief

On January 15, 2013, EMT submitted its brief in support of its Petition for approval of the Second Triennial Plan. EMT argues the Plan reasonably explains how the programs will achieve the objectives and implementation requirements of the statute and the performance metrics.

EMT states that the Legislature intended for the Commission to determine MACE so that the Commission could then set the appropriate assessment sufficient to fund programs at a level that would capture all available cost-effective energy efficiency. Additionally, EMT contends that the Commission should accept the

[6] On January 7, 2013, EMT Executive Director, Michael Stoddard, responded to Mr. Nicolaisen's comments. Mr. Stoddard notes that programs are screened for cost-effectiveness and third-party evaluations are conducted to cross-check the EMT's assumptions about savings and cost.

calculation of MACE offered by EMT and order adjustments to be made as new information becomes available. EMT states that the three-year budgets and energy savings provided in the Plan are supported by the modeling and the best data available to EMT at the time. EMT believes that ongoing program tracking, annual reporting, and periodic evaluations should provide sufficient opportunity for EMT and the Commission to identify programs that are not cost-effective.

EMT states that if the Commission finds that MACE is an amount that is greater than what can be achieved with funds identified in the Base funding scenario, then the Commission must calculate and establish an assessment on electric utilities. EMT believes the statute requires that the Legislature approve the increased amount of the assessment through the Biennial Budget process. EMT states that the statute also provides two ways that funding could be increased to help capture MACE in addition to, or in place of, an added assessment. One way would be to "top off" whatever amounts are needed to bridge the funding gap and would ultimately require Legislative approval under 35-A M.R.S. § 3210-C(12). The other way would be to approve one or more isolated contracts for particular programs under Section 3210-C(3). For the Natural Gas Conservation Fund, EMT does not read the statute to require special legislative approval for an increased assessment.

2. ENE Post-Hearing Brief

On January 15, 2013, ENE submitted its post-hearing brief. ENE states that the acquisition of all cost-effective electric and natural gas energy efficiency is required by law and that one of the objectives of the Plan is to design programs that meet the statutory targets set forth in Section 10104(4)(F), which includes "capturing all cost-effective energy efficiency resources available for electric and natural gas utility ratepayers." Section 10104(4)(F)(5). ENE contends that only the MACE funding level proposed by EMT is able to achieve the legislative requirement to capture all cost-effective electric and natural gas energy efficiency.

ENE states that the primary objective of the Act is to lower the cost of Maine's energy system by investing in low cost efficiency resources instead of expensive supply resources. ENE argues that MACE funding will result in lower electricity costs, will help create jobs and bolster the Maine economy, and will provide environmental benefits. Additionally, ENE asserts that the Commission could establish an oversight role for the Commission to participate in the evaluation, measurement and verification process of the Plan.

ENE believes EMT's Plan and potential study are reasonable and appropriate and that the study by the Cadmus Group/GDS Associates is credible. However, if the Commission believes that some of the underlying assumptions used in that study were not reasonable, ENE argues the Commission can substitute different assumptions.

While ENE did not perform an analysis of the economic benefits for increasing investment in natural gas energy savings programs, ENE expects that

natural gas customer's energy bills will decline and macroeconomic benefits will be realized under the MACE funding scenario.

ENE urges the Commission to approve the Triennial Plan and the MACE budget, and to recommend increasing the assessment on electric and natural gas rates to allow investment in all cost-effective energy efficiency programs.

3. CLF and NRCM Post-Hearing Brief

CLF and NRCM support approval of the Plan and funding consistent with the MACE case. CLF and NRCM state that the Commission has a legal obligation to ensure the capture all cost-effective electrical energy efficiency for ratepayers and that MACE is in the economic interests of ratepayers. CLF and NRCM argue that the MACE case will significantly reduce the total energy costs borne by Maine ratepayers, compared to either no efficiency programs or the Base Case savings. Additionally, CLF and NRCM state that while the Commission would be justified in approving the Plan at the MACE level based solely on the total projected reduction in costs, the MACE economic benefits go beyond that, and are broadly distributed and will render system-wide benefits for all ratepayers. CLF and NRCM state that if the Base scenario is implemented instead, it will yield higher ratepayer costs over the long term.

CLF and NRCM argue that the MACE savings projections are reliable and feasible and that EMT has a strong track record of achieving projected savings. Additionally, CLF and NRCM state that EMT's proposed level of MACE savings were properly derived and are consistent with industry practices.

CLF and NRCM state that the Commission should approve MACE as proposed and use periodic true-ups to adjust savings targets and budgets and that upon approval of the Plan, the Commission should continue to monitor both energy savings and program budgets to ensure cost-effectiveness.

4. Northern Utilities Post-Hearing Brief

On January 15, 2013, Northern filed its post-hearing brief. Northern continues to have concerns regarding the single, state-wide program proposed for all residential gas and electric customers who do not qualify for the Low Income Residential Program. Northern requests that a separately segregated program for residential natural gas customers, who are also paying the electric assessment, be required.

Northern argues that due to concerns regarding lack of clarity with respect to program design for residential natural gas customers, Base funding should be selected for natural gas programs in the Plan. Should Northern's concerns regarding program design for residential natural gas customers be resolved through a separately segregated natural gas program, Northern believes that the MACE funding scenario for natural gas should still be rejected because it would be too rapid an increase in funding. Northern is willing to consider a different level of funding other than Base, in the future, once more program design specifics and the effectiveness of various natural gas

programs are known. Northern contends that the Plan, in its current formulation as it relates to natural gas, fails to reasonably explain how the residential natural gas program would achieve the objectives and requirements of Section 10111. Additionally, Northern believes that, should the Commission recommend MACE funding, that recommendation is not self-actuating in the natural gas context and must be presented to the Legislature for approval.

5. Comments of Hans Nicolaisen

On January 21, 2013 Hans Nicolaisen submitted a third round of comments. Mr. Nicolaisen questions the effectiveness of past EMT spending and states that without proper analysis of past EMT programs, it is difficult to determine what the MACE level should be.

H. Distributed Generation MACE

On February 25, 2013, EMT submitted revised Budget Spreadsheets, Benefit-Cost Models, and updated Plan tables that included MACE funding for distributed generation that had previously been inadvertently omitted from the Plan.

I. Examiner's Report and Exceptions

The Hearing Examiner issued the Examiner's Report on January 31, 2013. EMT, CLF, ENE, and NRCM filed exceptions to the Examiner's Report on February 12, 2013. Northern submitted a letter indicating that they did not intend to file exceptions or comments regarding the Examiner's Report.

As discussed below in more detail, EMT's exceptions contained a modification to EMT's Electric MACE Plan to account for the removal of a collection of measures that EMT noted in its exceptions were inadvertently contained in the original EMT MACE Plan proposal.

The Commission considered the Examiner's Report and CMP's exceptions at its deliberative session on February 19, 2013.

III. LEGAL STANDARD OF REVIEW

The statutory standard of review for the Triennial Plan addresses two primary areas, EMT's Plan budget and the performance metrics. 35-A M.R.S. § 10104(4)(D) requires that the Commission reject elements of the Plan that propose to use money generated from capacity resource, associated energy or associated renewable energy credit contracts under 35-A M.R.S. § 3210-C, the Electric Efficiency and Conservation Program under section 10110, the Natural Gas Conservation Program under section 10111, or the Heating Fuels Efficiency and Weatherization Fund under section 10119 (Funding Statutes), if the Plan fails to reasonably explain how the elements of the

program would achieve (i) the objectives and implementation requirements of the programs established under those sections, or (ii) the measures of performance.[7]

Additionally, 35-A M.R.S. § 10120 provides that the Commission shall ratify the measures of performance incorporated in the Plan if it finds that the measures satisfy the requirements of the Act[8] and are in the public interest. Section 10104(3) requires EMT to develop quantifiable measures of performance for all of the programs that EMT administers. These measures will be the standards to which EMT will hold accountable all recipients of funding from EMT and recipients of funds used to deliver energy efficiency and weatherization programs administered or funded by EMT. Section 10120 further requires that the measures of performance define the electricity, natural gas and heating fuel savings targets established in 35-A M.R.S. § 10104(4)(F) (Statutory Targets), and specify the measures for assessing progress in meeting the Statutory Targets.[9]

Finally, we must consider whether to recommend or approve any proposed increase to the electric system benefits charge or natural gas assessment to fund EMT programs at a level consistent with obtaining the maximum achievable cost-effective energy efficiency. As set forth in the Act, it is an objective of the Triennial Plan to advance the eight statutory targets, one of which is to capture "all cost-effective energy efficiency resources available for electric and natural gas utility ratepayers." 35-A M.R.S. § 10104(F)(5). All cost-effective available energy efficiency resources is also referred to as "maximum achievable cost-effective" energy efficiency resources, or MACE.

The Electric Conservation Statute contains explicit direction regarding MACE. The statute provides that the Commission, in accordance with the Triennial Plan, "shall

---

[7] Notably, the Act does not explicitly include the statutory provision relating to the Regional Greenhouse Gas Initiative (RGGI) Trust Fund, 35-A M.R.S. § 10109, in its requirement that the Plan reasonably explain how the programs funded by the Funding Statutes achieve the objectives of those Statutes. This issue is addressed below in Section IV.B.4.

[8] The requirements of the Act are set forth in Chapter 97 of Title 35-A, codified as 35-A M.R.S. §§ 10101 through 10121.

[9] The applicable Statutory Targets set forth in 35-A M.R.S. § 10104(4)(F) that must be quantified by the performance measures are: (1) weatherizing 100% of residences and 50% of businesses by 2030; (2) reducing peak-load electric energy consumption by 100 megawatts by 2020; (3) reducing the State's consumption of liquid fossil fuels by at least 30% by 2030; (4) by 2020, achieving electricity and natural gas savings of at least 30% and heating fuel savings of at least 20% as defined in and determined pursuant to the measures of performance ratified by the Commission under section 10120; and (5) capturing all cost-effective energy efficiency resources available for electric and natural gas utility ratepayers.

assess each transmission and distribution utility . . . as necessary to realize all available energy efficiency and demand reduction resources in this State that are cost-effective, reliable and feasible" after consideration of other sources of funding for conservation programs described in the statute. 35-A M.R.S. § 10110(5).[10] The Electric Conservation Statute prohibits the Commission from increasing the electric system benefit charge, however, until the Legislature has approved EMT's budget. *Id.*

The Natural Gas Conservation Program statute does not directly address MACE. Rather, it provides that the Commission shall assess each gas utility that serves 5,000 residential customers an amount that is no less than 3% of the gas utility's delivery revenues. 35-A M.R.S. § 10111(2). The statute does provide that the Commission *may* assess a higher amount in accordance with the Triennial Plan. *Id.* Unlike the electricity statute, however, the natural gas statute appears to leave the determination of whether to increase the assessment entirely to the Commission and does not explicitly require legislative approval of the increased assessment or EMT's budget prior to any assessment going into effect.[11] *Id.*

The first question to be addressed is whether the Commission can or should make judgments about EMT's Triennial Plan's choice of programs and the allocation of ratepayer funding if the programs are all within the statutory categories and are cost-effective.

As discussed above, the Act carves out specific determinations that the Commission must make with respect to the Triennial Plan's compliance with Funding Statute requirements, performance metrics, and assessments to fund MACE. The Act places the Commission in an oversight role presumably to act as a check on the Triennial Plan and the reasonableness of the ratepayer funding for EMT's activities. As such, the Commission is granted independent authority under the Act to make a determination as to whether the Plan meets the requirements of the Act. While we give EMT or the EMT Board's findings with respect to such compliance great weight, there is no indication in the Act that the Commission is required to defer to their judgment as to these determinations.

Accordingly, we take an independent review of the information presented to determine whether the Plan, under both the Base and the MACE scenarios, presents a

---

[10] Other sources of funding include (A) the amount of assessment under the base electric system benefit charge pursuant to § 10110(4); (B) the funding for conservation programs provided by the Regional Greenhouse Gas Initiative (RGGI) Trust fund pursuant to 10119; (C) the amount of payments received from the forward capacity market as a result of conservation programs funded under the Act; and (D) any other predictable sources of funding for or investment in conservation programs. *Id.*

[11] Accordingly, a Commission recommendation regarding MACE (and the resulting assessments to get to MACE) could be self-actuating if the Commission does not independently condition its approval of natural gas MACE and approval of the increased natural gas assessments on approval by the Legislature.

reasonable description of cost-effective efficiency measures and how those measures comply with the requirements of the Act. As we stated in the First Triennial Plan proceeding, we have declined to make judgments on the design of EMT's efficiency programs or the allocation of funds among the various programs and have otherwise avoided micro-management of EMT's activities as long as the EMT and the Plan meet the requirements of the Act. June 20, 2012 Order Approving Second Update to First Triennial Plan, Docket No. 2010-116 at 3-4.

Another question is whether the Commission must make a recommendation regarding efficiency funding to achieve MACE and if so, what is the nature of that recommendation. During the First Triennial Plan we declined to make a recommendation to the Legislature as to whether the electric SBC and natural gas assessments should be increased to provide EMT's requested funding for the Plan and we deferred that determination to the Legislature.

Upon further examination of this issue and after receiving input from various interested parties, we find that where EMT has proposed a Plan for achieving MACE, we have an independent responsibility to determine, with a high level of confidence, whether and the extent to which the amount of MACE proposed to be funded by an increase to the electric or natural gas SBC is adequately supported by the evidence in the record and represents a cost-effective use of these funds.

As discussed below, a finding of cost-effectiveness of programs and measures depends on the underlying assumptions comprising both the costs and the benefits of particular efficiency measures. While the term cost-effective is defined in EMT's Rule, it cannot be measured with precision and there is a range of cost-effectiveness that represents varying degrees of confidence in the likelihood of the realization of the underlying assumptions. Accordingly, in order to determine whether the Plans comply with the Act, we make certain findings regarding the cost-effectiveness of the electricity and natural gas programs and measures. However, for the purpose of making a section 10110(5) finding regarding recommended increase to the electric SBC, we conduct an additional analysis of whether we have a high degree of confidence that the use of ratepayer money is warranted.

In order to determine with a high degree of confidence that the MACE to be funded through additional SBC assessments is likely to be a cost-effective use of ratepayer funds, the Examiner's Report analyzed the underlying measures and programs using conservative measure-level benefit-cost and net-to-gross assumptions to arrive at the Recommended Electric MACE Plan that we approve in this Order. We consider testimony and evidence proffered by EMT and interested parties with respect to the reasonableness of the MACE assumptions and how much additional ratepayer SBC funding is needed to achieve MACE, but we find that as an oversight agency, we are not required to defer to EMT's judgment in this respect as such deference would vitiate the effectiveness of the Commission's oversight role.

Although the Electric Conservation Statute does not dictate what kind of recommendation the Commission may make, if any, with respect to an increase in the

electric SBC assessment, we construe our recommendation obligation regarding the increase in SBC funding proposal for Electric MACE as an obligation to propose an alternative level (or range) of Electric MACE that should be funded through the electric SBC in the event that we do not agree with EMT's assessment.

We do not agree with Northern's post-hearing argument that the Commission may only approve, reject in total, or reject elements of the Plan.. We believe that 35-A M.R.S. § 10104(4)(D) authorizes us to reject aspects of the Plan that do not comply with the Funding Statute requirements or the Act and that this authorization allows us to modify the Plan in part by disapproving portions of it as we have done in this case.

IV. DISCUSSION AND RECOMMENDATION TO LEGISLATURE

There is a persistent tension between "rates" (dollars per kWh) and "bills" (i.e. money spent on electric energy per unit of output). While from a purely economic approach, it is best to focus on bills (less money spent per unit of output), in the "real world" of attracting jobs and public perception, there is an inevitable concern with rates as well. There is no agreed-upon principle to guide policy makers in establishing the balance. Moreover, while efficiency will likely have the effect of reducing overall energy consumption, there are complexities in assessing the overall effect of efficiency actions: if, for example, money saved on bills goes to buying energy-consuming gadgets, or higher efficiency leads to lower air conditioner settings, the overall effect of efficiency programs on usage is not so clear.

Making judgments about spending for efficiency is also complicated by the fact that if people always behaved in accord with their economic interests, no governmental program spending would be needed. But people as a whole clearly do not. The essential value of spending for efficiency is that it can "buy down" the discount rates of consumers (residential and business alike) and produce a result that benefits Maine as a whole – and even most of the customers in the state – by reducing the amount of money that is exported for energy.

Adding further complexity to this calculation is that both the value of efficiency, and the likelihood that people will act without support, vary with the cost of alternatives. If, for example, electric energy is very cheap, very few measures would be cost-effective. On the other hand, if electric energy is very expensive, efficiency measures will be installed without subsidy because the pay-back period will be much shorter. The trick is to find the programs that are within the "sweet spot" – i.e. they provide support where clearly needed to offset customers' short pay-back periods, and remain cost-effective over a reasonably broad range of energy price futures.

In this context, we have made a distinction between our approval of the Recommended Electric MACE plan for the purposes of a recommendation to the legislature concerning the appropriate SBC level, and a conclusion that EMT's Electric MACE plan presents a reasonable description of cost-effective efficiency measures. For the purposes of providing advice to the legislature concerning how much money should be collected from ratepayers for EMT's programs, we have, as described below, followed the advice in the Examiner's Report and have made aggressive and

asymmetrical assumptions that limit the likelihood that the money collected from ratepayers will be spent unnecessarily or on programs with marginal benefit. We have also, however, concluded that if EMT finds funding outside the SBC, it should be free to pursue the measures described in its Triennial Plan proposal up to the budgets that it set forth in EMT's Electric MACE proposal because under alternative assumptions or scenarios, those measures may be cost-effective. If, for example, funding similar to the recent American Recovery and Reinvestment Act (ARRA) funding became available, or EMT otherwise secures federal monies, under this approach the EMT could use that money for programs (or spending levels within programs) beyond what it is able to do with SBC funding without further review and approval by the Commission.

To put it differently, the confidence in the cost-effectiveness and accounting for free-ridership that we have concluded is necessary to recommend that we assess Maine ratepayers for efficiency programs, is higher than the level of confidence that is needed to conclude that, if some other source of funding is found, EMT should be allowed to move ahead with the collection of the "higher hanging fruit." The MACE budget proposed by EMT may well include additional measures that are cost-effective but which include the "higher hanging fruit" than the high confidence level measures included in the Recommended MACE Plan.

A. Overview of Plan

The Second Triennial Plan (Plan) presents the programs that EMT would deliver during fiscal years (FY) 2014 through 2016 and the budgets required to deliver those programs. Attachment 1 includes a list of all of the programs included in the Plan, as well as a list of programs from the First Triennial Plan that EMT would discontinue.

The Plan includes three scenarios: one for Base energy efficiency amounts (at essentially status quo funding levels) and two MACE funding scenarios. The first MACE funding is a low cost MACE scenario that assumes EMT's costs per kWh remain the same as the past three years (MACE LOW). The second MACE scenario is a high cost MACE scenario that assumes EMT's program costs (including marketing, delivery and incentives) will increase as programs reach more remote areas of the state and move less commonplace equipment into the marketplace (MACE HIGH). Under the High Cost MACE scenario, EMT's budget would be four to five times greater than status quo funding levels.

EMT provided a correction to its Electric MACE Plan in its exceptions that removed a collection of measures that had significant fossil fuel savings benefits which were relied upon to screen positive for cost-effectiveness. This correction reduced the supplemental electric SBC included in EMT's original Electric MACE Plan by $8.1 million in FY 2014, $8.7 million in 2015, and $9.3 million in 2016.

The MACE scenarios presented in the Plan represent the first three years of a ten-year period over which EMT would ramp up to total Maine MACE, which it estimates to be about 2.1 million MWh per year of electricity, or about 16% of total usage, and about 1.1 million Dekatherms per year of natural gas at the end of the ramp-up period.

B. Plan Compliance with Statutory Requirements

35-A M.R.S. § 10104(4)(D) requires that the Commission reject elements of the Plan that propose to use money generated from the Funding Statutes if the Plan fails to reasonably explain how the elements of the program would achieve the objectives and implementation requirements set forth in the statutes.

In the Findings submitted by the EMT Board in support of the Plan, the Board found that the Plan is consistent with the statutory authority for each fund that will be used to implement the Plan. Findings at 1-2. Specifically, the Board found that the statutory authority for each fund used to implement the Plan was described in Section 1.2 of the Plan and observed that the descriptions were crafted to be consistent with the statutory requirements of the funds used to fund each program. The Board then made specific findings as to the allocations of the electric and natural gas conservation funds that we address in the sections below.

As discussed in detail below, based upon our review of the Plan and the Board's Findings, we find that EMT's Base Plan, Recommended Electricity MACE Plan (as set forth in Section IV.D of this Examiner's Report), and EMT's MACE Plan comply with the statutory requirements of the two Funding Statutes that serve as the main sources of ratepayer based funding for the Second Triennial Plan, the Electric Conservation Statute (section10110) and the Natural Gas Conservation Statute (section 10111). We also address the Plans' compliance with the Long-Term Contract Statute (section 3210-C) and the RGGI Trust Fund Statute (section 10109). Since there is no Heating Fuels Efficiency and Weatherization Fund money used in the Plans for EMT programs, we do not need to address whether the Plan complies with 35-A M.R.S. § 10119.

1. Electric Conservation Statute

The Electric Conservation Statute requires that expenditures of the electric system benefit charge (electric SBC) assessed pursuant to section 10110(4) shall: (i) target at least 20% of fund to programs for low-income residential customers as defined by the board by rule; (ii) target at least 20% of funds to programs for small business consumers as defined by the board by rule; and (iii) to the greatest extent practicable, apportion the remaining funds among customer groups and geographic areas in a manner that allows all other customers to have a reasonable opportunity to participate in one or more conservation programs. 35-A M.R.S. § 10110(2)(B).[12] The Electric Conservation Statute further requires that the programs funded by the assessments generated pursuant to the fund be cost-effective.

Under EMT's Base Plan, the electric SBC generated pursuant to section 10110(4) is expected to generate $38.9 million over the three-year Plan Period to be applied toward cost-effective electric efficiency. As stated in the Findings of the

[12] Since this requirement applies to the electric SBC assessments generated pursuant to section 10110(4), the requirement does not apply to supplemental electric SBC assessments proposed to fund the MACE Plan pursuant to section 10110(5).

EMT Board, the Plan provides that over the three-year Plan Period, $5.5 million will be spent on the Low Income Weatherization Program for electrically heated homes, which is referred to in the Plan as the Residential Low Income Program (electric). Additionally, $2.4 million will be directed toward the lighting initiative in the Residential Retail Products program over the Plan Period. EMT's Board further found that the Plan budgets $25.1 for the Business Incentive Program, which has paid approximately 43% of its total financial incentives to small businesses over the past few years.

Based upon the Board's findings and our review of the Budget Spreadsheets provided by EMT that show where EMT will apply the electric SBC funds, we find that both the Base and the EMT Electric MACE Plan target at least 20% of electric SBC funds assessed pursuant to section 10110(4) to low-income residential and small business customers over the Plan Period. Since this requirement applies to the electric SBC assessments generated pursuant to section 10110(4), the requirement does not apply to supplemental electric SBC assessments proposed to fund the MACE Plan pursuant to section 10110(5) and therefore the Recommended MACE Plan, which will have the same base electric SBC funding built in to it as the EMT MACE Plan, meets the 20% requirements of the Electric Conservation Statute as well.

The Base and the EMT Electric MACE Plan both show that the remaining electric system benefit charge funds generated under section 10110(4) are used to fund the Residential Retail Products Program, the Business Incentive Program, and Cross-Cutting initiatives and administration. The Residential Retail Products program targets all Maine residential consumers by giving incentives and markdowns on lighting, appliances, electronics and supplemental heating systems. Plan at 61. The Business Incentive Program targets all non-residential customers including commercial, industrial, municipal, non-profit and institutional customers to provide them access to technical assistance and financial incentives for the installation of energy efficient equipment. Plan at 45. Finally, the Cross-Cutting Programs provide educational and innovative initiatives that span all customer sectors. Plan at 80-91.

In addition, the EMT Electric MACE Plan provides that a portion of the supplemental electric SBC money will be applied to the Other Residential Program under the MACE Plan.[13] Although this "Other Residential" program is not specifically described in the Plan, based upon the information contained in the GDS Model and data responses provided by EMT for the MACE funding scenario and EMT's exceptions, it appears that this money will be spent on measures that will expand retail markdown opportunities.

Based upon our review of the descriptions of these programs contained in the Plan, we find that both the Base and the EMT Electric MACE Plan, to the greatest extent practicable, apportion the remaining funds among a variety of customer groups and geographic areas in a manner that allows all other customers to

[13] The Budget Spreadsheets, as modified by EMT in its Exceptions, indicate that approximately $4.2 million of supplemental electric SBC money will be applied to "Other Residential" programs in FY 2014, $5.8 in FY 2015, and $7.5 in FY 2016.

have a reasonable opportunity to participate in one or more conservation programs. In order to confirm that this requirement is met for Recommended Electric MACE, however, we direct EMT to file with the Commission revised Budget Spreadsheets that reflect the allocation of funds for various programs during the Plan Period pursuant to the Recommended Electric MACE level.

Finally, the Electric Conservation Statute requires that programs developed and implemented by EMT and funded with electric conservation money shall "help reduce energy costs for electricity consumers in the State by the maximum amount possible" and shall be cost-effective as defined by EMT's rules. 35-A M.R.S. § 10110(2). The Statute also states that in defining cost-effective, the Board may consider the extent to which a program promotes sustainable economic development or reduces environmental damage to the extent that those effects can be quantified or otherwise reasonably identified. 35-A M.R.S. § 10110(2). EMT's rules provide that EMT will use the modified societal test to determine whether a program is cost-effective. Ch. 380, § 4.

We have reviewed the benefit-cost ratios for each of the programs funded by the electric SBC as provided by EMT in Table 14 of the Plan, the Base Plan Budget Spreadsheets, and the benefit-cost ratios the programs in the Base Plan contained in the models provided by EMT's consultant, GDS. Commission Staff also conducted sensitivity analyses on the benefit-cost ratios contained in the Base Plan GDS models using lower avoided energy and T&D costs and a higher discount rate pursuant to the methodology discussed below for the sensitivity analyses conducted on the MACE Plan. Even under Staff's sensitivity scenarios, the programs included in the Base Plan all maintained a benefit-cost ratio of greater than 1.

Figure 1: Combined Effect of Staff Scenario Analysis on EMT Base Plan

Combined Effect of Staff Scenario Analysis Adjustments on EMT Base Case
Staff Discount Rate @ 7%

0.65	NPV Benefits		Program		Participant Costs		B/C Ratio		
	EMT Triennial Plan	Staff Scenario Analysis	EMT Triennial Plan	Staff Scenario Analysis	EMT Triennial Plan	Staff Scenario Analysis	EMT Triennial Plan	Staff Scenario Analysis	Percent Difference
Residential	148,872,739	62,850,635	25,921,157	25,921,157	660,508	429,330	5.6	2.4	-57.4%
Commercial	115,191,102	48,823,566	25,115,618	25,115,618	17,649,879	11,472,421	2.7	1.3	-50.5%
Industrial	152,578,553	63,598,379	19,967,631	19,967,631	29,823,731	19,385,425	3.1	1.6	-47.3%
Total	416,642,393	175,272,579	71,004,406	71,004,406	48,134,117	31,287,176	3.5	1.7	-51.0%

Combined Effect of Staff Scenario Analysis Adjustments on EMT Base Case
Staff Discount Rate @ 10%

0.65	NPV Benefits		Program Costs		Participant Costs		B/C Ratio		
	EMT Triennial Plan	Staff Scenario Analysis	EMT Triennial Plan	Staff Scenario Analysis	EMT Triennial Plan	Staff Scenario Analysis	EMT Triennial Plan	Staff Scenario Analysis	Percent Difference
Residential	148,872,739	56,043,233	25,921,157	25,921,157	660,508	429,330	5.6	2.1	-62.0%
Commercial	115,191,102	42,075,421	25,115,618	25,115,618	17,649,879	11,472,421	2.7	1.1	-57.3%
Industrial	152,578,553	54,446,248	19,967,631	19,967,631	29,823,731	19,385,425	3.1	1.4	-54.9%
Total	416,642,393	152,564,902	71,004,406	71,004,406	48,134,117	31,287,176	3.5	1.5	-57.4%

Notes:
1. EMT (GROSS) amounts from Triennial Plan, Table 1.3
2. All amount reflect 3-year budget.
3. Staff Avoided Energy Cost Scenario based on reference case natural gas price forecast per EIA 2013 Annual Energy Outlook.
4. Staff Avoided T&D Cost Scenario reflects 50% of EMT assumed avoided T&D cost ($40 per kW-year rather than $80 per kW-year).
5. Staff Discount Rate Scenario reflects discount rate of 7% and 10% rather than the 4.5% assumed by EMT.
6. Staff Water Benefits Scenario reflects reduced water benefits (50% of EMT)
7. Net-to-Gross Ratio assumed to be .65, based on EMT evaluations and data responses (ODR 01-01).

The only exception occurred with the Low-Income Program, whose benefit-cost ratio dropped below 1 when Staff included a 35% free ridership rate pursuant to the methodology Staff used to conduct sensitivity analyses on the MACE Plan as discussed in Section IV.D below.[14] However, we acknowledge that the free ridership effect in the Low-Income Program is likely to not be as significant as in other programs because of the likelihood that, if not for the EMT funding these projects, participation in the program would likely not occur. Accordingly, we accept the recommendation of the Examiner's Report and find that the programs funded by the Electric Conservation Statute under the Base Plan comply with the statutory cost-effectiveness requirement.

[14] We recognize that free-ridership (i.e. program participants who receive support, but who would have implemented the efficiency measures without that support) is not, strictly speaking, a factor in determining the benefit-cost ratio of a program, when the cost is measured by the total amount expended. Staff's analysis does, however, provide important guidance in our assessment of the degree to which ratepayer funding will clearly produce beneficial results.

We also find that the programs funded by the Electric Conservation Statute under the Recommended Electric MACE Plan are cost-effective. As shown in the Examiner's Report, Staff reviewed the cost-effectiveness of the electric conservation programs funded by the electric SBC by reviewing the benefit-cost ratios of each program and the underlying efficiency measures as presented in the models provided by EMT's consultant, GDS. Based upon this review, we find that the programs and measures contained in EMT's Recommended Electric MACE Plan have B/C ratios that are greater than 1 and, accordingly, are cost-effective.

As discussed in more detail below in Section IV.D, Staff also examined the cost-effectiveness of the programs and individual efficiency measures comprising EMT's Electric MACE Plan for purposes of making a recommendation to the Legislature about how much the electric SBC should be increased to fund MACE. As described in detail in that section, we find that the amount of efficiency to be funded by ratepayers through the electric SBC should be less than the level proposed by EMT in its Electric MACE Plan, but more than the level that would be funded by the Base Plan (Recommended Electric MACE). Accordingly, we recommend that the SBC be increased to the level of funding needed for the Recommended Electric MACE level as described below in Section IV.D.

To the extent that EMT is able to obtain funding from sources other than the electric SBC to support EMT's Electric MACE scenario (e.g. federal funding), we find that EMT's Electric MACE Plan sufficiently complies with the requirements of the Electric Conservation Statute to allow those funds to be used to achieve cost-effective savings above the level included in the Recommended MACE Plan.

As we have explained in prior Orders approving EMT's First Triennial Plan, we have not conducted a full-scale evaluation of each program to independently verify all of the data underlying the benefit-cost ratios contained in the Plan. EMT has committed to conducting comprehensive evaluation and verification activities of its major programs every five years as required by statute. Additionally, EMT has indicated that it aims to conduct those evaluations approximately every two years. January 8, 2013 Hearing Tr. at 33:12-15. We rely upon EMT's commitments to engage independent third-parties to conduct these assessment and evaluation activities to provide further assurance that the programs included in the Plan will be cost-effective. We expect EMT to continuously monitor the results of these assessment and evaluation activities and to make the needed adjustments if there is any indication that a program is not cost-effective.

Mr. Nicolaisen states in his comments that he has serious doubts about the cost-effectiveness of some EMT's programs and that it would be a mistake to approve the MACE Plan without better auditing EMT's past performance. As described in detail in Section IV.D, we have conducted a reasonable investigation of the B/C Ratios of EMT's programs as part of its determination of what is the appropriate MACE level to be funded by ratepayer assessments. There is a reasonable basis to find that EMT's programs under the Recommended Electricity MACE Plan and EMT's Electric MACE are cost-effective and we continue to rely upon third-party evaluations to hold

EMT to a high standard of cost-effectiveness moving forward. We have reviewed the third-party evaluations conducted to-date and, viewed as a whole, do not find a sufficient basis on this record that would lead us to question the adequacy of the evaluation process or the quality of the evaluations themselves.

We do note, however, that there were instances where evaluators conducted field verifications and found new energy efficient equipment as expected, but were unable to find any documentation on the old replaced equipment.[15] This left the evaluator in the position of making the assumption that the old equipment was equivalent to a statistical baseline. The evaluator used the "baseline" to calculate energy savings of the new equipment. EMT assures the Commission that they have taken steps to remedy such occurrences. With respect to program evaluations, we recommend that EMT develop evaluation plans in conjunction with their program plans to the maximum extent possible. The value of developing the evaluation plan in concert with the program plan is that EMT can effectively write into the program plan specific data needs, couple evaluation goals with program goals, budget appropriately for the scope of the evaluation, pre-identify sampling design, determine to what extent they will evaluate net-to-gross related issues, establish data standards, statistical methods, and confidence/precision requirements. This approach should help eliminate the type of data deficiencies that are revealed in some of the evaluations.

2. Natural Gas Conservation Fund

The Natural Gas Conservation Program statute requires that EMT apportion funds generated from the natural gas assessment such that a "reasonable percentage" of the funds is directed to programs for low-income residential customers and programs for small business consumers. 35-A M.R.S. § 10111(B). The statute provides that EMT shall establish the percentage based on an assessment of the opportunity for cost-effective conservation measures for such consumers. *Id.* The statute also provides that, to the greatest extent possible, the remaining available funds be apportioned in a manner that allows all other consumers to have a reasonable opportunity to participate in one or more conservation programs. *Id.*

EMT's rule requires at least 10% of natural gas conservation funds to be targeted toward low-income consumers and 20% toward small businesses. Ch. 480, § 3(A)(2). EMT's Board Findings state that $317,487 (or 20%) of the natural gas fund are apportioned to low-income customers out of $1,587,434 natural gas funding over the three-year Plan Period. The Findings also state that $734,188 of the natural gas conservation funds are apportioned to the Business Incentive Program, which traditionally experiences 70% participation from small business customers. *Id.* Based upon these findings, and the Budget Spreadsheets provided by EMT that indicate where the natural gas conservation funds are allocated under the Plan, we find that the Plan allocates approximately 20% of the natural gas assessment funds to low-income

[15] Evaluation of EMT Business Incentive Program, November 30, 2011, Opinion Dynamics Corporation, p. 4.

customers and 28% of the funds to small businesses under the Base Plan over the Plan Period.

Although the Board did not make any findings with respect to whether a reasonable percentage of natural gas conservation funds are allocated to low income and small business customers under the MACE Plan, our review of the Budget Spreadsheets provided by EMT indicates that, for the MACE Plan, approximately 20% of the natural gas conservation funds will be allocated to low-income and 28% of the funds will be allocated to small business over the Plan Period. Accordingly, we find that both the Base Plan and the MACE Plan satisfy the statutory requirement that a reasonable percentage of natural gas conservation funds be applied to low-income and small business customers.

The Plan further describes the target markets and vehicles for the delivery of the remaining natural gas conservation funds through the Residential Direct Install and the Business Incentive Programs. The Plan states that the Natural Gas Conservation funds are presently used to promote home weatherization among Northern's residential customers and to rebate a portion of the cost of new, high efficiency gas equipment installed by Northern's business customers. These programs collectively target all Maine residential customers and all non-residential customers including commercial, industrial, municipal, non-profit, and institutional customers. Based upon these descriptions, we find that the Plan complies with the requirement that remaining funds, to the greatest extent possible, be apportioned in a manner that allows all other customers to have a reasonable opportunity to participate in one or more conservation programs. Given that only Northern's customers are subject to the natural gas assessment, we find that it is appropriate for the Natural Gas Conservation funds to be applied for the benefit of those customers.[16]

The Natural Gas Conservation statute also requires that the programs funded by the natural gas conservation funds be cost-effective. 35-A M.R.S. § 10110(1). In determining whether the program is cost-effective, the statute permits EMT to consider whether the program promotes economic development or reduces greenhouse gas emissions to the extent that EMT can quantify or otherwise reasonably identify such effects.

Although the Base Plan and the Budget Spreadsheets include information that the Low-Income, Residential Direct Install and the Business Incentive Program funded by the natural gas conservation funds are cost-effective, EMT did not provide any specific information to establish the specific benefit-cost ratios for the natural gas portions of those programs. EMT instead explained that, given the relatively

[16] The Natural Gas Conservation Statute limits the assessment to those gas utilities serving at least 5,000 residential customers. 35-A M.R.S. § 10111(2). At this time, only customers in the territory served by Northern pay the assessment for this fund and, according to EMT, only those customers are eligible for its use. EMT states in the Plan that Bangor Gas Company and Maine Natural Gas Company customer do not participate in the programs paid from this fund.

small amount of natural gas funding, EMT used benefit-cost ratios from similar programs in other jurisdictions to ensure that the money went to program implementation rather than being consumed through third-party evaluations or MACE studies.[17] It appears that the benefit-cost ratios of natural gas programs in other states such as Rhode Island, New Hampshire and Massachusetts have benefit-cost ratios of significantly greater than 1. While it is unclear from the record which of those programs from other states are similar to the natural gas programs funded by the Maine natural gas conservation funds and implemented by EMT, we are willing to rely upon EMT's representation that these benefit-cost ratios are an accurate reflection of the benefit-cost ratios of EMT's natural gas programs in light of the small amount of funds generated by the Natural Gas Conservation Statute under the Base Plan. Accordingly, for purposes of the Base Plan, we find that EMT's natural gas conservation programs in the Plan will satisfy the cost-effective requirements of the Natural Gas Conservation Statute.

Under the MACE funding scenario, the natural gas conservation funding increases from the $526,000 in the first year of the Plan Period to $3.5 million. Given this level of proposed funding, there is a heightened burden on EMT to show benefit-cost ratios for its natural gas programs so that the Commission can determine whether those programs are cost-effective. It appears that there is insufficient evidence in the record to establish benefit-cost ratios for EMT's natural gas programs under the MACE scenario. Accordingly, we are unable to find that EMT's MACE Plan reasonably explains how its natural gas programs will satisfy the cost-effective requirement set forth in the Natural Gas Conservation statute. We do not rule out the possibility that such a showing could be made, either in the next Triennial Plan filing or in the interim. In that case, we would reevaluate whether ratepayer funding for natural gas efficiency programs should be increased.

3. Long-Term Contracting Statute

The Base Plan also includes $5 million in funding per year from a long-term contract to be executed pursuant to 35-A M.R.S. § 3210-C. This funding would be applied toward the Large Customer Program to continue EMT's "Enhanced Financing Initiative," which is a loan forgiveness component of a revolving loan fund used to incentivize participation in the Program. Plan at 60; *EMT Petition for the Procurement and Delivery of Energy Efficiency Capacity Resources*, Docket No. 2012-408, December 19, 2012 Recommended Decision at 1-2.

---

[17] The Act requires independent evaluations of major programs to be conducted at least once every five years. Under the evaluation statute, a major program is defined as one with an annual budget of more than $500,000. Since the annual amount of natural gas conservation funding ranges between $526,000 and $531,000 during the Plan Period and those funds are divided into three different natural gas programs, independent evaluations are not required for the natural gas programs. 35-A M.R.S. § 10104(10).

Neither the Plan nor the supplemental information provided by EMT during discovery provide a sufficient basis for us to conclude whether or not the Plan complies with the requirements of the long-term contact statute set forth in 35-A M.R.S. § 3210-C. The Plan contains very little detail about the long-term contract.[18] As EMT explained during the technical conference, EMT has not yet submitted a proposal to the Commission for approval of the long-term contract(s) that would provide the $5 million annual funding contemplated by the Plan, but EMT indicated that it expects to do so at a later time after consideration of a number of factors, including whether the Commission approves the pending request for long-term contract funding in the First Triennial Plan in Docket No. 2012-00408. Dec. 11, 2012 Tr. at 149:6-150:1.

Although there is an insufficient basis to make a finding about statutory compliance at this time based on the Second Triennial Plan filing, the Commission will have an opportunity to make a determination as to whether the long-term contract funding proposed by EMT satisfies the requirements of section 3210-C statute when it decides whether or not to approve the contract. Accordingly, we make no finding at this time whether the Plan reasonably explains how the requirements of the long-term contract statute will be met and defer that determination to a subsequent proceeding to consider EMT's Second Triennial Plan long-term contract proposal.

We note, however, that we approved EMT's long-term contract proposal to fund the loan forgiveness component of the Large Project Program under the First Triennial Plan in an Order dated on February 14, 2013. In that Order, we found that the proposal satisfied the statutory requirements of § 3210-C(12). We subsequently forward the long-term contract proposal to the Legislature for approval as provided for in the statute with a recommendation that the contract proposal be approved. We anticipate that the Legislature's disposition of the EMT long-term contract proposal before it now (under the First Triennial Plan) will provide guidance to both EMT and the Commission concerning the long-term contract elements of the Second Triennial Plan.

4. Regional Greenhouse Gas Initiative Trust Fund

The Commission's obligation to review the Triennial Plan to determine whether it complies with the statutory requirements set forth in the Funding Statutes is governed by 35-A M.R.S. § 10104(4). Section 10104 specifically provides that the Commission, in making this determination, shall look at the objectives and implementation requirements of section 3210-C (the long-term contracting statute), the Electric Efficiency and Conservation Program under section 10110, the Natural Gas Conservation Program under section 10111, and/or the Heating Fuels Efficiency and

[18] EMT filed a long-term contract proposal for funding for the *First* Triennial Plan in a separate docket, 2012-408. *EMT Petition for the Procurement and Delivery of Energy Efficiency Capacity Resources*, Docket No. 2012-408. It is not yet clear whether that long-term contract proposal filed under the First Triennial Plan is going to be the same as the long-term contract proposal for funding in the Second Triennial Plan, although it is likely to be similar.

Weatherization Fund under section 10119. The Regional Greenhouse Gas Initiative Trust Fund established under section 10109 is not included in this list.

In our order approving the Second Update to the Triennial Plan,[19] we acknowledged this omission, but observed that the update provision contained in the Act required us to approve "significant changes" to programs using funds generated by assessments under the Efficiency Maine Trust Act. We included the RGGI funded programs as part of our budgetary review of the Second Updated Plan because we stated that RGGI funds were generated by assessments under the Act. *See* 35-A M.R.S. §§ 10104(4)(D), 10104(6).

In a December 13, 2012 Procedural Order in this proceeding, Staff asked EMT to file comments regarding how EMT's allocation of RGGI funding in its Second Triennial Plan budget complies with the requirements of the RGGI statute, 35-A M.R.S. § 10109. EMT filed responsive comments on December 21, 2012. In the Comments, EMT points out that the RGGI funds are not generated by assessments under the Act because they funds come from the proceeds of an action of carbon allowances which may be purchased by eligible generators or others. December 21, 2012 EMT Comments at 7. EMT further states that the proceeds of the auction are transferred directly to EMT. *Id.*

We agree with EMT that the RGGI funds are not generated by assessments under the Act. Unlike the Electric Conservation and the Natural Gas Conservation statutes, which direct the Commission to "assess the transmission and distribution utilities" and refer to the charges as "assessments," the RGGI statute refers to the money in the RGGI fund as "revenue resulting from the sale of carbon dioxide allowances." *See* 35-A M.R.S. §§ 10109(2), 10110, 10111. Additionally, in practice, the electric and natural gas SBC funds are generated in a very different manner than the RGGI funds. The electric and natural gas SBC funds are generated from charges that are passed directly from the utilities to their customers as a line-item charge on each customers' electric bill. In contrast, the RGGI funds are generated from money that certain generators pay into an auction in exchange for emission allowances. While the costs associated with RGGI compliance are likely included in electric supply bills at some level, it not a direct connection and, in our view, should not be characterized as an "assessment" on electric customers.

Accordingly, we find that our section 10104(4)(D) review obligation to determine whether the Plan reasonably explains how the Plan will achieve the objectives of the Funding Statutes does not extend to the RGGI Trust Fund Statute in section 10109 of the Act because it is not included in the list of Statutory Funds and because RGGI is not an assessment. If the Legislature seeks to have this Commission oversee EMT's and the Triennial Plan's compliance with RGGI requirements, the

[19] *Maine Public Utilities Commission Review of Efficiency Maine Trust Triennial Plan,* Docket No. 2010-116, Order Approving Second Update to Triennial Plan (June 20, 2012).

language of section 10104(4)(D) should be amended to make that clear. Until that time, oversight responsibility for compliance with the RGGI statute rests with the EMT Board.

C. Reasonableness of Performance Metrics

35-A M.R.S. §10104(3) requires EMT to develop quantifiable measures of performance for all of the programs that EMT administers. These measures will be the standards to which EMT will hold accountable all recipients of funding from EMT and recipients of funds used to deliver energy efficiency and weatherization programs administered or funded by EMT. Section 10120 further requires that the measures of performance define the electricity, natural gas and heating fuel savings targets established in 35-A M.R.S. § 10104(4)(F) and specify the measures for assessing progress in meeting the Statutory Targets.

Those Statutory Targets advanced by the Triennial Plan are:

1) Weatherizing 100% of residences and 50% of businesses by 2030;

2) Reducing peak-load electric energy consumption by 100 megawatts by 2020;

3) Reducing the State's consumption of liquid fossil fuels by at least 30% by 2030;

4) By 2020, achieving electricity and natural gas savings of at least 30% and heating fuel savings of at least 20% as defined in and determined pursuant to the measures of performance ratified by the commission under section 10120l;

5) Capturing all cost-effective energy efficiency resources available for electric and natural gas utility ratepayers;

6) Saving residential and commercial heating consumers not less than $3 for every $1 of program funds invested by 2020 in cost-effective heating and cooling measures that cost less than conventional energy supply;

7) Building stable private sector jobs providing clean energy and energy efficiency products and services in the State by 2020; and

8) Reducing greenhouse gas emissions from the heating and cooling of buildings in the State by amounts consistent with the State's goals established in Title 38, section 576.[20]

35-A M.R.S. § 10104(4)(F).

Section 10120 provides that the Commission shall ratify the measures of performance incorporated in the Plan if it finds that the measures satisfy the requirements of the Act and are in the public interest. We have generally interpreted this obligation as requiring an assessment of whether the performance metrics appear to be reasonable in light of the program budgets and whether the performance metrics

[20] 10% below 1990 levels by 2020.

adequately track EMT's progress toward the Statutory Targets. In light of the 60-day statutory period for reviewing the Plan and EMT's obligation to obtain periodic third-party evaluations of all of its major programs which includes an examination of the performance metrics, we do not consider the Act to require the Commission to perform an independent verification of the performance metric information provided by EMT.

1. Performance Metrics in the Plan

The Second Triennial Plan sets forth the annual kWh savings by program for each fiscal year of the Plan Period, as well as a total kWh savings for all three years of the Plan Period, under both the electric Base and the EMT Original Electric MACE Plan funding scenarios. For the Natural Gas programs, the Plan also provides the Dekatherm savings by program for each fiscal year of the Plan Period and a combined savings of all three years of the period under the natural gas Base and MACE funding scenarios.

Section 2.5 of the Plan quantifies the Statutory Targets set forth in 35-A M.R.S. § 10104(4)(F) and discusses EMT's progress toward the Statutory Targets over the First Triennial Plan Period and the additional progress expected as a result of the Second Triennial Plan. Additionally, EMT submitted Budget Spreadsheets for both the Base and MACE budgets that include the following information for each program and total across all programs for each fiscal year of the Plan Period:

- Energy Savings
- Homes weatherized (as a percent of the total target)
- Summer peak electric load reduction
- Annualized electricity savings
- Annualized natural gas savings
- Annualized liquid fossil fuel savings
- Annualized CO2 reductions

Finally, the Statement of Findings by EMT's Board submitted in support of the Plan found that the overall Plan advanced the Statutory Targets and quantified for each Statutory Target, the progress expected during the Second Triennial Plan Period. The Board further addressed the attainability of each specific Statutory Target and found that the following Statutory Targets are attainable:

- Reducing peak-load electric energy consumption by 100 megawatts by 2020
- Capturing all cost-effective electric and gas savings
- Saving consumers $3 for each $1 of heating and cooling incentives
- Building private sector jobs

The Board also found that certain Statutory Targets are not attainable from a technology and cost-effective standpoint. Specifically, the Board found that:

- The Statutory Target to "weatherize 100% of residences and 50% of businesses by 2030" is not attainable because (1) not all homeowners and businesses may be willing to weatherize their properties, especially without significant levels of incentives that would not be available unless funded from additional revenues; and (2) there is not a universally accepted standard for what constitutes a completed "weatherization" for purposes of reaching the target.
- The Statutory Target to "achieve electricity and natural gas savings of at least 30% and heating fuel savings of at least 20%" by 2020 is not attainable because there are not sufficient cost-effective measures to reach the electricity and natural gas savings levels and because there is insufficient funding to reach the heating fuels savings target.
- The Statutory Target to "reduce the State's consumption of liquid fossil fuels by at least 30% by 2030" is not attainable because liquid fossil fuel consumption is decreasing due to natural market forces and therefore there are fewer total gallons of fuel usage from which EMT can achieve savings.
- The Statutory Target to "reduce greenhouse gas emissions by 10% below 1990 levels by 2020 from heating and cooling of buildings in the state" is not attainable solely due to actions by EMT because this is a statewide goal that would require, among other things, significant changes in the transportation sector and the agricultural and forestry sector, which are outside of the scope of EMT's programs.

The Board recommended that the Legislature review the Statutory Targets and amend them as needed to reflect the Board's findings, but stated that it interprets the Statutory Targets to be desired levels of performance rather than minimum requirements of performance. Findings at 3.

2. Analysis

Based upon our review of the Plan, the Budget Spreadsheets and the Board Findings, we find that the EMT's Base Plan and EMT's Original Electric MACE Plan provide clear and reasonable measures for each program over the Plan Period in light of the budgets presented and we agree with the Board's finding that the performance measures satisfy the Principles of Administration set forth in 35-A M.R.S. § 10104(2). Additionally, we find that EMT has clearly defined the Statutory Targets in quantifiable terms and has provided specific standards that to which the Plan can be held in terms of assessing EMT's progress in meeting the Targets. Accordingly, we find that the measures of performance are in the public interest.

We reiterate, however, that although we have reviewed the budgetary numbers and performance metrics in order to determine whether they are reasonable and consistent with the requirements of the Efficiency Maine Trust Act, we

did not conduct of a full-scale evaluation of each program to independently verify the performance metrics in the Plan. As stated above, the Act requires a third-party evaluation of each major program at least once every five years and EMT has testified that it aims to conduct independent evaluations approximately every two years. The evaluation must include an accounting audit of the program and an evaluation of the program's effectiveness in meeting the goals of the Efficiency Maine Trust Act. EMT has noted that it takes into account third-party evaluators' suggestions in updating its Technical Resource Manual (TRM). We rely upon these third parties to conduct these assessments and we direct EMT to submit any future program evaluations to the Commission with each Annual Report, or as soon as the evaluations become available. Further, we expect EMT to continuously monitor the results of these assessments and evaluation activities and to make needed adjustments if there is any indication that a program is not cost-effective or that the performance metrics need to be modified (subject to Commission approval where appropriate).

To the extent that the measures of performance are different in EMT's Corrected Electric MACE Plan (due to the removal of certain measures as discussed above) and the Recommended Electric MACE Plan, EMT shall revise the performance metrics to reflect these Plans pursuant to the same methodology used to develop the Base Plan and EMT's Original Electric MACE Plan performance metrics that we approve here. EMT shall file these revised performance metrics with the Commission within a reasonable time after they are developed. Absent a further Commission order, such submission shall not constitute a significant change to the Plan and shall not constitute an updated Plan pursuant to 35-A M.R.S. § 10104(6).

Finally, although we agree with the EMT Board that the Statutory Targets set forth in section 10104(4)(F) are statutory goals and not minimum requirements, we make no independent finding about whether those Statutory Targets are attainable or whether the Legislature should amend the Targets as recommended by the EMT Board.

D. Electricity MACE

The term MACE applies to estimated energy savings from efficiency measures that are (1) technically possible, (2) cost-effective, and (3) achievable after factoring in barriers in the market and other adoption barriers. To estimate electricity MACE for Maine, EMT retained the Cadmus Group and GDS Associates to perform a detailed assessment of Maine's residential, commercial and industrial sectors. *See* Cadmus and GDS Report, *Assessment of Energy Efficiency and Distributed Generation Baseline and Opportunities* at pp. 4, 9 (September 2012) (Cadmus Report).

There are a number of uncertainties that are inherent in any exercise which attempts to forecast savings a decade into the future. These uncertainties include market acceptance rates, customer behavior, and usage rates which vary widely from assumptions of "typical" usage. As the Cadmus Report observed, these uncertainties grow in the out years due to "insufficient information about emerging technology choices . . . ." and the Cadmus study therefore concludes that "[c]onsequently, the availability and

magnitude of future impacts inherently must be considered speculative." Cadmus Report at 5.

With this in mind, any recommendation should be conservative in nature to account for the speculative long-term predictions that are being made. There should be no presumption that MACE can be defined with any level of certainty. What is MACE today is probably not MACE five years from now because of technological advances of which we have no knowledge. Although according to Dr. Anthony's hearing testimony it is important to move from arbitrary funding levels to funding levels based on MACE, based upon the findings from the Cadmus report stated above and the dependence on out-year savings, in practicality, the distinction between arbitrary levels of funding and "MACE funding" is not terribly clear.

EMT proposes to reach MACE by ramping up efficiency penetration levels over the ten-year period beginning July 1, 2013. Cadmus and GDS estimate that over this ten-year period, capturing MACE would have the cumulative effect of saving 2.1 million MWh of the forecasted sales in the tenth year, or about 16% of total electricity usage in that year. In order to create a yearly electric MACE target, Cadmus and GDS divide the efficiency savings into equal increments for each year of the ten year period resulting in electricity savings of about 210,000 MWh/year, or 1.6% of forecasted sales in each year between now and 2021, including each of the three years included in the Second Triennial Plan.

To fund Electric MACE, EMT originally proposed to increase the total SBC over the 3-year Plan Period from the current level ($40 million) to $130 million, or perhaps more depending on whether the MACE LOW or MACE HIGH budget scenario assumptions prevail.[21] At the current assessment level, the base electric SBC generates just over $13 million per year. Under EMT's Corrected Electric MACE Plan, the electric SBC would increase by $14.6 million in year 1 (FY 2014), by an additional $7 million in year 2 (FY 2015), and then by another additional $4.5 million in year 3 (FY 2016), so that by the end of the Triennial Plan Period, the electric SBC assessment (including the base and supplemental electric SBC) would be $40 million per year and the total SBC assessment for over the Plan Period would be $102 million. EMT has also included other sources of additional funding in its electricity MACE scenarios, denoted as "Federal/Other"; however, the availability of those funds is not known at this time. The funding scenarios are summarized below in Figure 2:

[21] As noted above, EMT presented two MACE budgets – one assuming program delivery costs remain at current levels (MACE LOW) and another assuming program delivery costs increase, *e.g.*, due to increased program costs (including marketing, delivery and incentives) as programs try to reach more remote areas of the state and move less commonplace equipment into the marketplace (MACE HIGH).

Figure 2[22]

EMT Triennial Plan Funding Sources - Electricity Only
(As proposed in Triennial Plan with adjustment to Supplemental SBC per EMT Exceptions, Table 4)

BASE							
Fiscal Year	Base SBC	Supplemental SBC	RGGI	MPRP	FCM	Federal/ Other	TOTAL
2014	13,098,660	0	3,765,000	1,652,609	2,336,276	5,000,000	25,852,545
2015	13,264,909	0	3,765,000	1,652,609	3,276,278	5,000,000	26,958,796
2016	13,414,389	0	3,765,000	1,652,609	3,947,952	5,000,000	27,779,950

MACE HIGH							
Fiscal Year	Base SBC	Supplemental SBC	RGGI	MPRP	FCM	Federal/ Other	TOTAL
2014	13,098,660	14,645,984	3,765,000	1,652,609	2,336,276	11,282,243	46,780,772
2015	13,264,909	21,599,254	3,765,000	1,652,609	3,276,276	16,493,249	60,051,297
2016	13,414,389	26,163,847	3,765,000	1,652,609	3,947,952	19,098,752	68,042,549

The Electric Conservation Statute requires that the Commission, in accordance with the Triennial Plan, shall assess each T&D utility as necessary to realize all available energy efficiency and demand reduction resources in the State that are cost-effective, reliable and feasible after considering other sources of funding listed in the statute. 35-A M.R.S. § 10110(5). The statute provides that the Commission shall present any recommended increase in the assessment to the Legislature.[23]

As discussed above, we have an independent responsibility to ratepayers to find, with a high level of confidence, that the amount of MACE proposed to be funded by ratepayers through an increase to the electric SBC is adequately supported by the evidence in the record and reflects a cost-effective use of these ratepayer funds.

In order to make this determination, the Examiner's Report analyzed EMT's Electric MACE Plan and the underlying assumptions, and in certain cases (described below), used more conservative assumptions that are reasonably supported by the record in order to determine a Recommended MACE level for purposes of calculating the amount of increase in the SBC to recommend to the Legislature. As discussed in more detail below, we find that this is a reasonable approach and we accept the recommendation of the Examiner's Report regarding Recommended MACE.

As noted above, Cadmus and GDS determined MACE using a three-step process. First, as described in the Cadmus Report, Cadmus and GDS determined what

[22] EMT provided Budget Spreadsheets for the Base and MACE High scenarios. Accordingly, the record does not include a breakdown of funding sources for the MACE LOW scenario.

[23] We understand the statute to mean that any increase in the SBC assessment on electricity customers must be ratified by the Legislature.

level of savings is technically feasible over the ten-year time period. Second, they determined what portion of the savings that are technically feasible are actually cost-effective, or have a benefit-cost ratio of greater than one. And third, Cadmus and GDS determined what portion of the savings are both technically feasible and cost-effective are actually achievable savings in light of potential barriers to adoption of efficiency measures.[24]

To address the question of whether EMT's MACE estimates are reasonable, the Examiner's Report focused on the cost-effectiveness step. The Examiner's Report did not analyze whether the savings are technically feasible (step 1) or whether the efficiency measures will actually be adopted (step 3), since the methodology used in the Cadmus Report appears to be reasonable and, to some extent, steps (1) and (3) may be self-correcting. In other words, if amounts included in the MACE estimates turn out to be not technically feasible or not achievable due to barriers on the consumer, regulatory or administrative side, the corresponding costs to encourage them will not likely be spent.

The benefit-cost (B/C) ratios that determine whether each particular measure is cost-effective and thus incorporated into the second phase of the MACE calculation is determined pursuant to a model developed by GDS for use by EMT that computes the benefits and costs associated with each measure and develops a benefit-cost ratio pursuant to the total resource cost test. There are several different methods for assessing the cost-effectiveness or B/C Ratios of efficiency measures. The tests vary by what cost factors and benefit factors are included, and from whose perspective the effects would be viewed. Although EMT's rule allows EMT to use the modified societal test, EMT has used the "total resource cost test" (TRC test) for determining whether the measures that comprise MACE are cost-effective. Ch. 380, § 4(A)(1)(e). The TRC test is a widely used and accepted approach, although it is narrower in scope.[25] Accordingly, we find that EMT's use of the TRC test is a more conservative valuation of the benefits of energy efficiency than if it had valued all of the types of benefits allowed for inclusion pursuant to EMT's rule, Chapter 380.[26]

---

[24] Adoption barriers referenced in the Cadmus Report included financial, political and regulatory barriers; administrative and marketing costs associated with efficiency programs; and the capability of programs and administrators to ramp up activity over time.

[25] For example, the modified societal test includes non-resource benefits such as economic development benefits and environmental benefits, to the extent that they can be reasonably quantified and valued. Chapter 380, § 4(A)(1)(e). EMT testified at the Technical Conference that although the EMT rule state that EMT will use the modified societal test to determine whether a program is cost-effective, the practice in Maine has been to only rely upon the economic impacts of the energy elements of the measure, which essentially is the TRC test. December 11, 2012 Tr. at 8:19-9:1.

[26] The benefits allowed for consideration in the societal benefit test under Chapter 380 that EMT did not count in its TRC test calculation include customer cost reductions in operation and maintenance, deferred replacement costs, business productivity

The objective of the TRC test is to measure costs and benefits from the perspective of electricity ratepayers. Pursuant to the TRC test, the costs and benefits of each efficiency measure are estimated to establish a B/C Ratio. Because EMT primarily uses a "replace on burnout" approach, whereby measures would be replaced only at the end of their lives, costs are simply the incremental costs of the more efficient measures. Benefits include the associated electricity cost savings, such as from avoided energy and capacity, as well as non-electric cost savings, such as from the reduced water use of more efficient clothes washers.[27] Efficiency measures with a B/C Ratio of greater than one are deemed to be "cost-effective" and, thus, are included in MACE.

Although the mechanics of the TRC test are fairly straightforward, the results are highly dependent on the underlying assumptions. In reviewing the EMT MACE estimates, the Examiner's Report focused on certain, and by no means all, of these assumptions. Specifically, the Staff examined the underlying assumptions related to: (1) the avoided costs of energy and transmission and distribution (T&D); (2) the non-electric benefits; (3) the discount rate used to determine net present value (4) the measure lives; and (5) the "net-to-gross" ratio.

Staff did not independently verify the detailed technical data and assumptions that EMT used to form the basis of the kWh and kW savings, such as measure performance and penetration levels, nor the assumed measure and program costs. In large part, this is because of the review and audit processes that already occur (including by independent evaluators), and the measurement and verification of savings required by ISO-NE as part of EMT's participation in the Forward Capacity Market.[28]

---

improvements, and economic developments such as state economic and employment growth and environmental benefits including reduced pollution and enhanced public health.

[27] Non-electric savings are distinct from the non-resource environmental benefits included in the modified societal test because non-electric savings accounted for in the MACE Plan are environmental benefits (such as reduced water usage) that flow directly to participants as a result of the efficiency measure. In contrast, the non-resource environmental benefits are benefits to the wider society such as reduced air pollution or increases in jobs.

[28] As required by statute, evaluations of EMT's major programs are conducted by independent third-party evaluators at least once every five years. The evaluations analyze the individual programs in order to evaluate their cost-benefit ratio and the program's effectiveness in meeting the goals of the Efficiency Maine Trust Act. The evaluators then present a written report on the success of the individual program, along with suggestions on how it can be improved or modified. EMT has stated that it typically incorporates the suggestions made in the evaluation report into the Technical Resource Manuals (TRM). For each measure, the residential and commercial TRMs provide a measure overview, energy savings algorithms, baseline assumptions, deemed parameter values for inputs to savings algorithms, measure life and incremental costs,

Rather, using the GDS B/C Models, Staff conducted sensitivity analyses around the five assumptions noted above, and recalculated the net present value (NPV) benefits and aggregate B/C Ratios using our high-confidence level with more conservative assumptions than those used by EMT and its consultants to establish a Recommended MACE.[29] As shown in Figure 3, using the more conservative assumptions as discussed in more detail below, results in NPV Benefits and B/C Ratios that are on the order of 50% to 75% below those included in EMT's Original Electric MACE Plan.

---

and factors for calculating adjusted gross savings and net savings. If a third-party evaluator suggests that the measure life or baseline assumptions that EMT is currently using in its TRM are inaccurate, it may suggest to EMT that it needs updating.

[29] The aggregate B/C ratios are the B/C ratios for each sector under the EMT's high MACE scenario as included in the GDS models provided by EMT. Although the tables included in this section of the Examiner's report reflect the effect of Staff's sensitivity analyses on the aggregate B/C ratios, Staff's sensitivity analyses were run through the GDS models, which applied the sensitivities first to the individual measures, which were then "rolled up" by the GDS model one level into the B/C ratios at the program level, and were then "rolled up" by the GDS model one more level to the aggregate B/C ratio for each customer sector. Although Staff input different sensitivities into the GDS model as discussed in this section, Staff did not alter the underlying functioning of the GDS model in any way.

Figure 3: Summary of Staff Scenario Analysis

Combined Effect of Staff Scenario Analysis Adjustments on EMT MACE HIGH Scenario, Year 1
Staff discount rate @ 7%
Dollars in millions

0.65	NPV Benefits		Program Costs		Participant Costs		B/C Ratio			Results of Measure Life Sensitivity
	EMT Triennial Plan	Staff Scenario Analysis	EMT Triennial Plan	Staff Scenario Analysis	EMT Triennial Plan	Staff Scenario Analysis	EMT Triennial Plan	Staff Scenario Analysis	Percent Difference	B/C Ratio Percent Difference
Residential	$115.5	$50.6	$23.7	$23.7	$11.3	$7.3	3.30	1.63	-50.6%	-62.6%
Commercial	$86.1	$36.3	$19.8	$19.8	$7.2	$4.7	3.19	1.48	-53.5%	-63.3%
Industrial	$38.5	$15.7	$6.6	$6.6	$2.2	$1.4	4.38	1.96	-55.2%	-71.0%
TOTAL	$240.1	$102.6	$50.1	$50.1	$20.7	$13.5	3.39	1.62	-52.4%	

Effect of Staff Adjustments on EMT MACE HIGH Scenario, Year 1
Staff discount rate @ 10%
Dollars in millions

0.65	NPV Benefits		Program Costs		Participant Costs		B/C Ratio			Results of Measure Life Sensitivity
	EMT Triennial Plan	Staff Scenario Analysis	EMT Triennial Plan	Staff Scenario Analysis	EMT Triennial Plan	Staff Scenario Analysis	EMT Triennial Plan	Staff Scenario Analysis	Percent Difference	B/C Ratio Percent Difference
Residential	$115.5	$41.5	$23.7	$23.7	$11.3	$7.3	3.30	1.34	-59.5%	67.6%
Commercial	$86.1	$30.9	$19.8	$19.8	$7.2	$4.7	3.19	1.26	-60.5%	67.3%
Industrial	$38.5	$13.1	$6.6	$6.6	$2.2	$1.4	4.38	1.84	-62.6%	74.5%
TOTAL	$240.1	$85.5	$50.1	$50.1	$20.7	$13.5	3.39	1.34	-60.3%	

Notes:
1. EMT MACE HIGH (GROSS) amounts from Triennial Plan, Table 18.
2. All amounts reflect Triennial Plan Year 1, MACE HIGH scenario.
3. Staff Avoided Energy Cost Scenario based on reference case natural gas price forecast per EIA 2013 Annual Energy Outlook.
4. Staff Avoided T&D Cost Scenario reflects 50% of EMT assumed avoided T&D costs ($40 per kW-year rather than $80 per kW-year).
5. Staff Discount Rate Scenario reflects discount rates of 7% and 10% rather than 4.5% assumed by EMT.
6. Staff Water Benefits Scenario reflects reduced water benefits (50% of EMT)
7. Net-to-Gross Ratio assumed to be .65, based on EMT evaluations and response to ODR-01-01
8 Measure Life Sensitivity reflects 70% of EMT's assumed lives for all measures.

1. Avoided Costs

To estimate MACE, EMT used avoided electricity supply costs calculated by Synapse as described in the AESC 2011 report. These avoided costs are intended to reflect electricity supply costs at the retail level that are avoided by virtue of the kWh and kW reductions resulting from the efficiency measures. There are several components to these avoided costs, of which wholesale electric energy costs are the most significant. In the New England market, wholesale energy prices are largely driven by natural gas. As stated in response to EX-04-02, the AESC 2011 relied upon natural gas prices from the New York Mercantile Exchange (NYMEX) as of March 18, 2011 for the years 2011 through 2014 and upon natural gas prices from the 2010 Annual Energy Outlook (AEO) of the U.S. Energy Information Administration (EIA) (High Shale Case) to determine the wholesale electric energy costs that underlie the avoided electricity supply costs.

The EIA recently released its 2013 AEO, which, as shown in Figure 2 below, projects substantially lower prices for natural gas. In most years covered by the two natural gas forecasts, the updated natural gas prices shown in the 2013 AEO were between 28% to 41% lower than the 2010 AEO natural gas prices used by Synapse and incorporated into the B/C ratios used to estimate EMT's Electric MACE.

Figure 4: Comparison of 2010 and 2013 EIA AEO Forecasts[30]

EIA Natural Gas Price Forecasts
2013 vs. 2010 Annual Energy Outlook
Henry Hub Natural Gas, 2011 $/MMBTU

	2010 AEO (High Shale Case)	2013 AEO (Reference Case)	Percent Change
2011	4.37	3.98	-8.9%
2012	4.91	2.62	-46.6%
2013	5.10	3.25	-36.3%
2014	5.29	3.12	-41.0%
2015	5.91	3.12	-47.2%
2016	5.96	3.57	-40.1%
2017	5.93	3.70	-37.6%
2018	5.95	3.96	-33.4%
2019	5.98	4.05	-32.3%
2020	6.06	4.13	-31.8%
2021	6.16	4.26	-30.8%
2022	6.25	4.48	-28.3%
2023	6.52	4.67	-28.4%
2024	6.72	4.79	-28.7%
2025	6.78	4.87	-28.2%

For purposes of Recommended MACE, Staff developed a revised set of avoided energy costs to reflect the current 2013 AEO forecast and reran the GDS B/C Models using the revised values.[31] Staff used the Original EMT Electric MACE HIGH Scenario (Triennial Plan Year 1) for the model rerun, although the effects would be comparable for other EMT scenarios and years. The reductions in avoided energy costs

[30] As shown in Figure 2 of EMT's exceptions, our reductions to the Avoided Energy Costs, as reflected in the sensitivity analysis, were less than the above changes in in the AEO forecasts in 2011-2014, due to the use of the NYMEX natural gas price forecasts in that same period.

[31] Staff's revised set of avoided energy cost adjustments are attached to this Examiner's report as Attachment 5. Staff's avoided energy cost sensitivity is included in the Staff GDS MACE Model previously referenced as Attachment 3.

reduced program benefits by 15%, from $240 million to $204 million, and reduced the aggregate B/C Ratio by the same 15%, from 3.17 to 2.70.

EMT also included avoided transmission and distribution (T&D) costs as a benefit. The value ascribed to this benefit was $80/kW-year for each kW of peak demand reduction, escalated at inflation. ODR-01-04; EX-05-01. Although this value may have been used in prior MACE studies, it does not appear to have been adequately examined. In response to ODR-02-14, EMT noted that it did not have the information even to identify what the $80 value was intended to measure, such as whether it included pool transmission facility costs, local transmission costs and/or distribution system costs.

We agree that efficiency measures can reduce the need for new transmission investment, and that this is a benefit that should be included in B/C ratios, to the extent it can be reasonably estimated. We also agree with the Examiner's Report, however, that the record in this case does not provide sufficient information to determine whether the value used by EMT is reasonable, or, if not, what a reasonable estimate would be. Lacking any basis to confirm or modify EMT's transmission avoided costs, for purposes of Recommended MACE Staff tested the sensitivity of the analysis to the assumption regarding the avoided T&D costs. Staff reran the GDS B/C model using a value of $40/kW-year rather than $80/kW-year. The 50% reduction in the avoided T&D costs had the effect of reducing program benefits and B/C ratios by 5%, thus indicating the results are not strongly sensitive to this assumption.

2. Discount Rate

The cost-effectiveness of energy efficiency (and most other) investments is typically considered on a net present value (NPV) basis. This ensures that the "time value of money" related to costs and benefits is appropriately captured. The discount rate used to calculate the net present value can be a major driver of B/C Ratios because of the very different time periods involved for costs vs. benefits. Typically, energy efficiency program costs are incurred up front, while the energy savings and associated benefits accrue over a future period of time corresponding to the lives of the measures. Thus, all else equal, using a lower discount rate will create less of a reduction in benefits and result in a higher B/C Ratio than if a higher discount rate is used.

For its Triennial Plan analysis, EMT used a nominal discount rate of 4.5%, which reflects a real discount rate of 2.5% and assumed 2% inflation. This appears to be based on EMT's Chapter 380, which specifies the use of a "Modified Societal Test" (MST) (rather than the TRC), and a discount rate equal to current yield for long-term U.S. Treasury securities adjusted for inflation. Chapter 380, § 4(A)(3).

We acknowledge that EMT's rule, Chapter 380, provides that the discount rate to be used by EMT is current yield of long-term (10 years or longer) U.S. Treasury securities, adjusted for inflation. Ch. 380, § 4(A)(4); ODR-02-15. We also acknowledge that the Commission itself used that discount rate when the Efficiency Maine Trust was part of this agency. However, the rule also provides that the "Commission," which arguably is now EMT since EMT is the administrator of the efficiency programs, "may consider an alternative discount rate when characteristics of a

program are inconsistent with use of long-term U.S. Treasury securities." It may be that the rate specified in Chapter 380 is intended to reflect a "societal discount rate", which would appear to be appropriate for use with the MST. However, as noted above, in this case EMT has used the TRC, which looks at cost-effectiveness from a ratepayer (not societal) perspective. EMT's use of the TRC rather than the MST may weigh in favor of using a higher discount rate for purposes of calculating B/C ratios used in evaluating MACE.

As discussed in the Examiner's report, a 2008 whitepaper issued by the U.S. Environmental Protection Agency (EPA) regarding the cost-effectiveness of energy efficiency programs asserted that since each cost-effectiveness test portrays a specific stakeholder's view, each cost-effectiveness test should use the discount rate associated with its perspective.[32] The EPA further stated that the Total Resource Cost test should reflect the utility weighted average cost of capital and the social discount rate (typically the lowest discount rate) should be used for the Societal Cost Test to reflect the benefit to society over the long term. *Id.*

In evaluating various types of investments made using electricity ratepayer funds, the Commission regularly confronts questions about what discount rate to use. Typically, the Commission evaluates investments using the utility's weighted average cost of capital (WACC), or a rate intended to reflect the time value of money from the perspective of the utility's customers. Determining an electric utility WACC is fairly straightforward, and based on current conditions would be in the range of 9% to 10%. The Commission typically uses a 7-10% discount rates in cases where we evaluate benefits over a longer period of time, such as in the case of economic benefits associated with a long-term contract for energy and capacity from a renewable generation facility. Determining a discount rate from to reflect the perspective of customers is much less straightforward, although the need for subsidies and incentives such as those provided by EMT suggest that customers' discount rates are relatively high.

Accordingly, there appear to be three discount rate options: the the long-term U.S. Treasury rate adjusted for inflation that was used by EMT, the payer's discount rate which is potentially high, and the 7-10% discount rate that the Commission typically uses to evaluate benefits over a long period of time in situations where ratepayers bear, at least in some part, the costs of a particular transaction. In light of the fact that we are using ratepayer money to fund these programs and that that we are taking a conservative approach to determine Recommended MACE, we find that it is reasonable to adopt the approach of the Examiner's Report and use the 7-10% discount rate.

As discussed in the Examiner's Report, Staff reran the EMT MACE analysis using a discount rate of 7% and a discount rate of 10%. The Examiner's Report indicated that Staff's analysis found that increasing the discount rate from a 4.5% to 7%

[32] *Understanding Cost-Effectiveness of Energy Efficiency Programs: Best Practices, Technical Methods, and Emerging Issues for Policy-Makers, A Resource of the National Action Plan for Energy Efficiency*, U.S. Environmental Protection Agency at ES-2 (November 2008).

resulted in a 15% reduction of the NPV benefits and the aggregate B/C Ratios. Increasing the discount rate from 4.5% to 10% resulted in a 30% reduction of the NPV benefits and the aggregate B/C Ratios.

3. Non-Electric Benefits

Pursuant to the TRC and EMT's Rules (Chapter 380, § 4(A)(1)), the benefits used to estimate electricity MACE may include non-electric benefits that would result from the electricity efficiency measures. The two types of non-electric benefits EMT included are (1) cost savings from reduced water use, such as by more efficient clothes washers and (2) cost savings from reduced use of other fuels, such as heating oil. Water savings are included primarily for residential measures and for non-residential measures where installation of an energy efficiency measure such as commercial clothes washers and low-flow pre-rinse spray valves result in reduced water use. Other fuels savings are included for both residential and commercial measures.

Although it is reasonable to include these types of savings, we have concerns about how they have been estimated and applied. With respect to water savings, according to EMT's response to ODR-02-12, EMT makes no distinction between purchased water and water sourced from privately-owned wells. Rather, EMT uses water costs applicable to customers of Portland Water District to value all water use in Maine. Given that approximately half of Maine households are supplied by private wells[33] for which there would be little if any costs or savings from incremental water use, we agree with the approach contained in the Examiner's Report and find that it is appropriate to use a more conservative figure for the benefits associated with water savings. As discussed in the Examiner's Report, Staff conducted a sensitivity analysis that reduced the water savings benefits by 50%. This change reduces the benefits and B/C Ratios of Residential Appliance Coupon Program by 7%. EMT's other programs appear to be unaffected by this issue. The resulting impact of a 7% reduction in the benefits and B/C Ratios of the Appliance Coupon Program is a 1% decrease in the overall NPV Benefits and aggregate B/C Ratio, which does not materially alter our conclusions.

EMT points out in its exceptions that there are some benefits associated with water savings even in instances where residences rely upon private wells to supply their water (e.g. reduced maintenance costs and deferred replacement costs). While we agree that these benefits may result from reduced water usage, there is no evidence in the record to calculate these benefits. Accordingly, for purposes of determining Recommended MACE, we accept the approach taken by the Examiner's Report and do not include those benefits in the sensitivity analyses used to arrive at Recommended MACE.

With respect to the non-electric fuel savings, the Examiner's Report indicated that the electricity MACE scenarios and proposed budgets for this Triennial Plan

[33] Maine CDC – December 2007 https://www.maine.gov/dhhs/mecdc/phdata/district-profile-pdf-doc/Central%20DHP%20-%20Environmental%20Health%20-%20Water.pdf.

Period appeared to include substantial program costs for building envelope measures for which the benefits flow predominantly from reduced heating oil use. By way of example, in EMT's MACE Scenario Year 1, the proposed budget for residential *electricity* programs appears to include $4.5 million for attic insulation even though virtually all of the benefits are from reduced heating oil use.

EMT acknowledged in it Exceptions that it had inadvertently included in its Original Electric MACE Plan a collection of measures that had significant fossil fuel savings benefits that were relied upon to screen positive for cost-effectiveness. EMT acknowledged that these measures should not be included in the Electric MACE Plan and proposed that they be removed, resulting in a reduction in electric SBC funding of $8.1 million in FY 2014, $8.7 million in FY 2015, and $9.3 million in FY 2016. The EMT Electric MACE Plan and the Recommended Electric MACE Plan approved in this Order reflect those adjustments.

4. Net-to-Gross Ratio

The net-to-gross ratio is used to measure what portion of efficiency savings are a result of the program. The net savings amount eliminates savings from so-called "naturally occurring efficiency," including, but not limited to, factors that from "free-riders,"[34] so that savings that would have occurred anyway are netted out, as are any associated participant costs. Net-to-gross ratios can also reflect additional or "spillover" savings that result indirectly from the program.[35] EMT's third-party program evaluations generally take free-ridership into account through participant surveys, but the effects of spillover (which would serve as an off-set to free-ridership) are difficult and expensive to quantify and have not been included in the third-party evaluations. EMT's program evaluations estimate free-ridership rates ranging from 14-38%.[36]

In addition to free-ridership and spillover effects, net-to-gross ratios should account for a number of factors which include:

- Installation Rates: Customers who take advantage of an EMT program, but never complete the installation. This is typically seen in residential lighting programs where new bulbs are on the shelf instead of in the fixture.

[34] Free-riders are people that would have incorporated or adopted the efficiency measure anyway, regardless of EMT's energy efficiency programs or incentives.

[35] As EMT's Director Michael Stoddard testified at the Technical Conference, "spillover" is when a customer implements more efficiency measures than those measures that EMT is promoting, but that, nonetheless, result in an efficiency gain.

[36] *E.g.* November 30, 2011 Evaluation of EMT Business Incentive Program, Opinion Dynamics (November 30, 2011) Table 5-8. Free-Ridership Scores, FY2011 Compared to 2006, at 62; EMT Residential Lighting Evaluation – Final Report, The Cadmus Group (November 1, 2012), Figure 21 Comparison of upstream CFL Program net-to-gross ratios, at 29.

- Failures: Some equipment will fail prematurely due to defects and will not meet its useful life.
- Rebound Effect: This is a customer behavior impact in that customers may use the efficient equipment for more hours than they used their old inefficient equipment.
- Take-back Effect: Customers see a reduction in their bills and use the savings to increase their plug load in other areas.

All of these issues highlight items that are real, but are extremely difficult to measure. The extent to which EMT's program evaluations include these factors, which would serve to decrease the net-to-gross ratio, is unclear.

The B/C Ratios and MACE amounts in the Triennial Plan reflect adjusted gross savings, or the change in energy consumption/demand that results directly from program-related actions taken by participants in an efficiency program regardless of why they participated.[37] Adjusted gross-savings is the same as a net-to-gross ratio of 1 and does not account for free-ridership or spillover effects. As such, all of the savings from efficiency measures in Maine over the 10-year MACE study period are included, including those that would have occurred without any subsidy or incentive.

While we understand and agree that there is a theoretical universe of potential energy savings and that the total amount of "efficiency" is unaffected by net-to-gross calculations, this does not answer the question: What is the actual budget that EMT requires to implement MACE? The record does little to establish with any precision the causal relationship between EMT's budget and the goal of achieving MACE.

EMT's explanation for using gross savings rather than net savings is that it provides a more stable and predictable basis, as well as that it is the approach used to report savings to the ISO-NE Forward Capacity Market. EMT notes that, in the context of a TRC, free-ridership is irrelevant in that the TRC test is simply comparing the total costs to the total benefits of a given efficiency measure. The exceptions filed by EMT, NRCM and ENE also stated that net-to-gross ratios should be applied at the program level, rather than at the measure level.

We agree that the net-to-gross ratios in the record are operational measurements at the program level and not at the measure level. Notwithstanding this point, however, when determining what levels of efficiency savings and types of measures should be subsidized with ratepayer dollars, consideration should be given to whether the subsidies are actually needed and whether the use of the ratepayer funds is reasonably likely to be cost-effective. Even if certain levels of efficiency and particular measures appear to be cost-effective from a total resource or societal perspective, funding them with

---

[37] In the case of adjusted gross savings, the savings levels resulting from the participants' efficiency program related actions are adjusted for factors such as data errors, installation and persistence rates, and hours of use, but it does not adjust for free-ridership or spillover effects.

ratepayer money could nonetheless be unreasonable, particularly given potential alternative uses of those ratepayer dollars. For example, if a particular efficiency measure was clearly cost-effective from a total resource or societal perspective, but the market was sufficiently transformed such that the measure was already standard and people would use that measure even without an EMT program or subsidy, using ratepayer funds to promote or provide a subsidy would not be a prudent use of the funds-unless the funds are targeted to submarkets where the measure is not being used..

Although the effects of free-ridership may not be easy to measure with certainty, the record indicates that free-ridership is both real and substantial. In response to ODR-01-01, EMT provided free-ridership rates for certain of its programs, as well as for programs in other jurisdictions. These indicate free-ridership rates in the range of 35% for EMT programs, and as high as 55% in other jurisdictions.

As noted above, net-to-gross ratios can also reflect additional savings from spillover effects. However, based on our review of the EMT third-party evaluations, spillover either has not been quantified due to the difficult and costly effort to measure spillover, or, in some programs, was found to be diminimus.[38] Given that there is insufficient evidence in the record to determine the level of spillover that might exist, we agree with the approach of the Examiner's Report that did not factor spillover into the analysis for purposes of using net-to gross ratios to determine whether the use of ratepayer money to fund MACE will be cost-effective.

To determine the extent to which MACE measures and programs would be a cost-effective use of ratepayer funds when benefits (and participant costs) are considered on a net basis, the Examiner's Report examined the effect of free-ridership on the amount of ratepayer funding for MACE through the electric SBC. As discussed in the Examiner's Report, Staff adjusted EMT's Original Electric MACE gross program benefits and participant costs to reflect a net-to-gross ratio of 65%. Stated another way, Staff excluded the benefits and participant costs associated with a free-ridership rate of 35%. The effect of this adjustment from adjusted gross savings to net savings alone reduced EMT's estimated benefits by 35%, and its B/C Ratios by 28%. When combined with the staff sensitivity adjustments to avoided energy costs, avoided T&D costs, discount rates and water benefits, compared to the EMT MACE scenario, the NPV benefits and B/C ratios decreased by 57% and 53%, respectively, using a 7% discount rate, and by 64% and 60%, respectively, using a 10% discount rate. See Figure 3. As a result of all of the adjustments described above, the overall B/C Ratio for EMT's MACE Scenario Year 1

[38] Residential Lighting Program Evaluation: Final Report, Cadmus Group (Nov. 1, 2012) at 26; Evaluation of the Efficiency Maine Trust Business Incentive Program, Opinion Dynamics (Nov. 30, 2012) at 62-63; Commercial Projects Grant Program Evaluation, Navigant (Jan. 30, 2012) at 2-7; Home Energy Savings Program Final Evaluation Report, Cadmus Group (Nov. 30, 2011) at 32; Large Projects Grant Program Evaluation, Navigant (April 9, 2012) at 2-7; Retro-Commissioning Pilot Program, Cadmus Group (Dec. 28, 2012) at 4.

decreased from 3.39 to 1.62 (at 7% discount rate) and to 1.34 (at 10% discount rate) See Figure 3.[39]

5. Measure Life

Measure life is the length of time that a measure is expected to be in place and providing savings. It is one of the inputs that affect the result of the TRC test and the resulting B/C ratios for each measure because the measure life determines for how long the efficiency benefits of a particular measure accrue. All else equal, longer measure life assumptions will increase the benefits and thus produce higher B/C ratios.

In determining measure lives, EMT testified that it relied on, among other things, the manufacturers' listings for the expected life of the product, warrantees, what other states use in their terminations, third-party evaluations as well as their own experience and that of industry experts. January 8, 2013 Tr. at 147.

In EMT's response to discovery requests, EMT stated that the measure lives in the aggregate contained the MACE scenario are almost twice that in the Base funding scenario due, in large part, to LED lighting programs, because LED lighting measures have a 20 year measure life. *See* ODR-01-12. EMT did not specifically address non-LED lighting measures. Based upon our review of the assumptions in the GDS models, it appears that EMT assumed longer lives for many of the other efficiency measures under the MACE Plan than it assumed for the same measures in the Base Plan.

For example, under the residential measures included in the GDS models, EMT refrigerator measure life was assumed to be 10 years under the Base Plan and 17 years under the MACE Plan. Similarly, the measure life for clothes washers increased from 10 years under the Base Plan to 14 years under the MACE Plan, and the measure life for electric hot water heaters increased from 10 years under the Base scenario to 13 years under the MACE scenario. The increase in measure life from the Base case to the MACE case was not as pronounced in the commercial and industrial sectors, although we observed longer measure lives in the MACE modeling for those sectors.

After considering the Record, we agree with the Examiner's Report that the variances between the assumptions between the Base and MACE cases is not well explained or supported. In its exceptions, EMT indicated that there are different fact-specific reasons for the differences in measure lives between the Base and MACE scenarios. For example, in the MACE scenarios, CFL light bulbs penetrate less used areas of the home and therefore tend to last longer. While we understand that there may be differences in how long a measure will last before it wears out or is removed under the Base and MACE scenarios, for purposes of determining the level of ratepayer funding for MACE that will be cost-effective, it is also relevant to consider how long owners of the measure will use it before replacing or abandoning it – something that EMT did not factor in its Plan because they used a replace-on-burnout approach.

[39] See footnote 14 above.

Accordingly, we find that it is reasonable to use more conservative assumptions with respect to measure life.

As discussed in the Examiner's Report, to test the effect of the measure life issue on MACE, Staff performed a sensitivity analysis in which measure lives were reduced by 30% compared to EMT's MACE scenario, which results in measure lives that more closely reflect the estimates used in the Base Plan.

When this measure life adjustment is combined with all of the adjustments discussed above, the results indicate B/C Ratios of between 1.42 to 1.04, which are from 62% to 75% lower than those estimated by EMT. The magnitude of the B/C Ratio reductions vary by whether a 7% or 10% discount rate is used, and also vary by customer sector, with the largest effects shown for the industrial program modeled at a 10% discount rate.

6. Effect of Adjustments on MACE Estimates

The Examiner's Report observed that the Staff adjustments to avoided costs, water benefits, discount rate, net-to-gross ratio and measure lives resulted in substantial reductions to the NPV Benefits and B/C Ratios, the effect on total MACE MWhs is not directly proportional. This is because such a large portion of MACE comes from measures with relatively high B/C Ratios. As such, they remain cost-effective even with substantial reductions to the assumed benefits.

Using the measure-level detail in the Cadmus Study Appendix C and the observed changes to B/C Ratios from the scenarios described above, Staff adjusted B/C Ratios at the measure level to examine by how much EMT's estimate of MACE should be reduced to arrive at a more conservative estimate. This analysis indicated that MWh savings in EMT's MACE scenario should be decreased by up to 20% if a discount rate of 7% is used and by up to 28% if a discount rate of 10% is used. Including the adjustment for measure lives indicates a potential reduction of MACE by 30% to 32%, depending upon the discount rates used, to arrive at a conservative level of MACE to be funded through ratepayer money. The results of Staff's analysis are summarized in Figure 5 below.[40]

[40] MACE is reduced by the most in the residential sector and the least in the industrial sector.

FIGURE 5: EFFECT OF STAFF ADJUSTMENTS ON MACE

All Staff adjustments; discount rate @ 7%; EMT measure lives

Summary of MACE Levels (Year 2021, Annual MWhs)
Comparison of MACE Under Staff Sensitivity Analysis Assumptions vs. CADMUS Study

Reduce B/C Ratio by:	Residential	Commercial	Industrial
	51%	54%	55%

Sum of MWhs from All Measures by Class, 2021 Annual Totals

Class	CADMUS Study MWh	Staff Sensitivity MWh	Delta MWh	Delta Percent
Residential	964,389	738,288	(226,101)	-23.4%
Commercial	816,357	694,343	(122,014)	-14.9%
Industrial	318,006	255,359	(62,647)	-19.7%
TOTAL	2,098,752	1,687,990	(410,762)	-19.6%

All Staff adjustments; discount rate @ 10%; EMT measure lives

Summary of MACE Levels (Year 2021, Annual MWhs)
Comparison of MACE Under Staff Sensitivity Analysis Assumptions vs. CADMUS Study

Reduce B/C Ratio by:	Residential	Commercial	Industrial
	60%	61%	63%

Sum of MWhs from All Measures by Class, 2021 Annual Totals

Class	CADMUS Study MWh	Staff Sensitivity MWh	Delta MWh	Delta Percent
Residential	964,389	631,845	(332,544)	-34.5%
Commercial	816,357	628,338	(188,019)	-23.0%
Industrial	318,006	242,275	(75,731)	-23.8%
TOTAL	2,098,752	1,502,458	(596,294)	-28.4%

All Staff adjustments; discount rate @ 7%; 70% of EMT measure lives

Summary of MACE Levels (Year 2021, Annual MWhs)
Comparison of MACE Under Staff Sensitivity Analysis Assumptions vs. CADMUS Study

Reduce B/C Ratio by:	Residential	Commercial	Industrial
	63%	63%	71%

Sum of MWhs from All Measures by Class, 2021 Annual Totals

Class	CADMUS Study MWh	Staff Sensitivity MWh	Delta MWh	Delta Percent
Residential	964,389	592,118	(372,271)	-38.6%
Commercial	816,357	625,095	(191,262)	-23.4%
Industrial	318,006	238,601	(79,405)	-25.0%
TOTAL	2,098,752	1,455,814	(642,938)	-30.6%

All Staff adjustments; discount rate @ 10%; 70% of EMT measure lives

Summary of MACE Levels (Year 2021, Annual MWhs)
Comparison of MACE Under Staff Sensitivity Analysis Assumptions vs. CADMUS Study

Reduce B/C Ratio by:	Residential	Commercial	Industrial
	68%	67%	75%

Sum of MWhs from All Measures by Class, 2021 Annual Totals

Class	CADMUS Study MWh	Staff Sensitivity MWh	Delta MWh	Delta Percent
Residential	964,389	579,311	(385,078)	-39.9%
Commercial	816,357	616,706	(199,651)	-24.5%
Industrial	318,006	230,396	(87,610)	-27.5%
TOTAL	2,098,752	1,426,414	(672,338)	-32.0%

7. Recommendation Regarding Electric MACE and Electric SBC Assessment

The Electric Conservation Statute provides that, in accordance with the Triennial Plan, the Commission shall assess T&D utilities as necessary to realize all available energy efficiency and demand reduction resources in Maine that are cost-effective, reliable and feasible after consideration of other sources of funding for or investment in conservation programs. 35-A M.R.S. § 10110(5). The Statute further provides that the Commission shall present any recommended increase in the assessment to the Legislature. *Id.*

As explained above, in an effort to determine what recommendation to make with respect to an increase in the electric SBC under the supplemental assessment provision, Staff conducted a series of sensitivities on EMT's MACE calculations to account for reasonable, conservative alternatives to the avoided energy and T&D cost, non-electric benefit, discount rate, and measure life assumptions employed by EMT.

The Examiner's Report acknowledged, however, and we agree that these sensitivities are by their very nature, imprecise, and that as a result, any alternative recommendation regarding a Recommended MACE will be similarly imprecise.

Given that Staff's sensitivity analyses resulted in savings levels that are 20-30%, below the savings levels include in the EMT's Original Electric MACE Plan, we agree with the Examiner's Report that a reasonable recommendation for MACE is somewhere between that 20% and 30% mark. Accordingly, based upon the evidence in this proceeding and Staff's analysis as presented in the Examiner's Report, we find that a conservative but reasonable level of MACE to be funded by ratepayers through an increase to the electric SBC is approximately 75% of EMT's Electric MACE Plan and we approve the Triennial Plan subject to that cap (Recommended Electric MACE). By scaling the savings estimates in the EMT Electric MACE scenario, Recommended Electric MACE translates to approximately 1.6 million MWh of annual savings (or about 12% of total usage) at the end of the 10-year phase-in period. In each of the ten years, then, incremental savings would be about 160,000 MWh/year, compared to the EMT estimate of 210,000 MWh/year.[41]

Given that section 10110(5) of the Act requires that the electric SBC assessment be increased to achieve MACE as reflected in the Triennial Plan approved by this Commission, we recommend that the Legislature increase the electric SBC from the current base assessment amount of $0.00145 per kWh (0.145¢ per kWh) to $0.00230 per kWh (0.230¢ per kWh) in Plan Year 1 (FY 2014), $0.00289 per kWh (0.289¢ per kWh) in Plan Year 2 (FY 2015), and $0.00329 per kWh (0.329¢ per kWh) in Plan Year 3 (FY 2016).[42]

---

[41] Given that EMT revised its Original Electric MACE Plan in its Exceptions to remove certain efficiency measures, we have recalculated Recommended MACE as 75% of EMT's Corrected Electric MACE.

[42] The current SBC level is set forth in 35-A M.R.S. § 10110. The recommendation in this Order is for the approval of a supplemental assessment under 35-A M.R.S. § 10110(5). 35-A M.R.S. § 10110(4), which establishes the base SBC assessment, also governs the amount that may be recovered from electricity customers under the Ocean Energy Act. An Act to Implement the Recommendations of the Governor's Ocean Energy Task Force (Ocean Energy Act), P.L. 2009, ch. 615. We believe that an assessment under § 10110(5) would not impact the permitted assessment under the Ocean Energy Act. In the event that the Legislature chooses to modify 35-A M.R.S. § 10110(4) in response to this Order, however, the Legislature

As shown in Figure 6, below, funding electric MACE at a level of 75% of EMT's Electric MACE means that the total EMT funding from the electric SBC (including the Base assessment pursuant to § 10110(4) and the supplemental assessment pursuant to § 10110(5)) will be $20.8 million in Plan Year 1, $26.1 million in Plan Year 2, and $29.7 million in Plan Year 3.

This Recommended Electric MACE level of funding will result in a cost to the average residential customer of $14 per year in the First Year (a 0.6% increase in their total electric bill compared to funding at the Base electric SBC level), $18 per year in the Second Year (a 1.0% increase in their total electric bill compared to funding at the Base electric SBC level), and $21 per year in the Third Year of the Plan Period (a 1.3% increase in their total electric bill compared to funding at the Base electric SBC level). This Recommended Electricity MACE level of funding will result in a greater impact on Large Commercial and Industrial Customers, with an increase of 1.1%, 1.8% and 2.3% in the total electricity bill paid by the average C&I customer during Plan Years 1, 2, and 3, respectively, compared to funding at the Base electric SBC level.

should be cognizant of the impact such an amendment would have on the assessments permitted in the Ocean Energy Act.

Figure 6: SBC and Customer Bill Effects[43]

Electricity SBC Budget Scenarios

EMT MACE Budgets are "MACE HIGH" versions; EMT Correction per Exceptions, p 24

	BASE SBC						
	SBC $$	SBC Rate ($/ kWh)	% Inc. in SBC Rate (vs. BASE)	Residential Customer Cost/ Yr	% Inc in Total Bill (vs. BASE)	Large C&I Customer Cost/ Yr	% Inc. in Total Bill (vs. BASE)
Year 1	$13,100,000	0.00145	0.0%	$9	0.0%	$8,700	0.0%
Year 2	$13,300,000	0.00145	0.0%	$9	0.0%	$8,700	0.0%
Year 3	$13,400,000	0.00145	0.0%	$9	0.0%	$8,700	0.0%
TOT/AVG	$39,800,000	0.00145	0.0%	$27	0.0%	$26,100	0.0%
	ORIGINAL EMT MACE SBC (TRIENNIAL PLAN)						
	SBC $$	SBC Rate ($/ kWh)	% Inc. in SBC Rate (vs. BASE)	Residential Customer Cost/ Yr	% Inc in Total Bill (vs. BASE)	Large C&I Customer Cost/ Yr	% Inc. in Total Bill (vs. BASE)
Year 1	$35,918,766	0.00398	174.2%	$25	1.8%	$23,854	3.2%
Year 2	$43,602,685	0.00483	232.8%	$30	2.4%	$28,958	4.2%
Year 3	$48,887,746	0.00541	273.2%	$34	2.8%	$32,467	5.0%
TOT/AVG	$128,409,197	0.00474	226.7%	$89	2.3%	$85,279	4.1%
	CORRECTED EMT MACE SBC (FOSSIL MEASURES REMOVED)						
	SBC $$	SBC Rate ($/ kWh)	% Inc. in SBC Rate (vs. BASE)	Residential Customer Cost/ Yr	% Inc in Total Bill (vs. BASE)	Large C&I Customer Cost/ Yr	% Inc. in Total Bill (vs. BASE)
Year 1	$27,744,645	0.00307	111.8%	$19	1.2%	$18,426	2.0%
Year 2	$34,864,133	0.00386	166.1%	$24	1.7%	$23,154	3.0%
Year 3	$39,578,236	0.00438	202.1%	$27	2.1%	$26,285	3.7%
TOT/AVG	$102,187,014	0.00377	160.0%	$71	1.7%	$67,865	2.9%
	75% OF CORRECTED EMT MACE SBC						
	SBC $$	SBC Rate ($/ kWh)	% Inc. in SBC Rate (vs. BASE)	Residential Customer Cost/ Yr	% Inc in Total Bill (vs. BASE)	Large C&I Customer Cost/ Yr	% Inc. in Total Bill (vs. BASE)
Year 1	$20,808,484	0.00230	58.8%	$14	0.6%	$13,819	1.1%
Year 2	$26,148,100	0.00289	99.6%	$18	1.0%	$17,366	1.8%
Year 3	$29,683,677	0.00329	126.6%	$21	1.3%	$19,714	2.3%
TOT/AVG	$76,640,261	0.00283	95.0%	$53	1.0%	$50,898	1.7%

NOTES: Residential usage @ 520 kWh/month; average price @ 14 cts/kWh
C&I usage @ 500,000 kWh/month; average price @ 8 cts/kWh

[43] To the extent that EMT program costs are more comparable to those included in the MACE LOW scenario rather than the MACE HIGH Scenario, this level of electric SBC funding will generate more savings.

As Staff's analysis in the Examiner's Report has shown, changes in factors that affect B/C Ratios, such as shifting market forecasts for the avoided cost of energy supply, can materially affect the benefits of efficiency measures, the B/C Ratios of those measures, and may ultimately change the level of MACE in the future. We expect EMT to monitor the factors that affect MACE estimates, to revisit whether the MACE levels approved here are still valid or whether they need to be changed to reflect updated information. Unless there is a significant change to the Plan in the meantime, we will revisit MACE and the appropriate assessments to achieve MACE when EMT files the Third Triennial Plan (for FY 2017-2019) for approval.

EMT asserts in its post-hearing brief that the Commission should accept the calculation of MACE offered by EMT and order adjustments to be made as new information becomes available. EMT states that the three-year budgets and energy savings provided in the Plan are supported by the modeling and the best data available to EMT at the time. While we understand that there is an inherent difficulty inserted into this process by virtue of the fact that the available information changes quickly, we have a responsibility to make our determination based upon the best data available to us at the time we are making our decision, and we are satisfied that we have done so here.

E. Natural Gas MACE

The Triennial Plan relies on 2010 Report for the MPUC by Summit Blue and American Counsel for an Energy Efficient Economy (ACEEE) to establish MACE for natural gas related efficiency (Summit Blue Study). The Summit Blue Study drew from MACE potential studies conducted between 2004 and 2009 for Pennsylvania, New Hampshire, Connecticut and Massachusetts, and used the results to calculate a "best fit" level of MACE for Maine in percentage of load terms. Based on the Summit Blue Study, EMT defines MACE to be about 1.1 million dekatherms (Dth), which amount would be the annual savings after a ten year phase-in period.[44] During the 2014-2016 Triennial Plan Period, EMT proposes to achieve incremental savings of about 118,000 dekatherms (Dth) per year, with an annual budget of about $3.5 million per year, compared to the current funding level of about $530,000 per year and annual savings of about 54,000 Dth.

Figure 7

NATURAL GAS ASSESSMENT FUNDING*

Fiscal Year	Base Scenario	MACE	MACE Savings(Dth)
2014	$ 526,509	$ 3,559,447	109,000
2015	$ 529,140	$ 3,550,145	109,000
2016	$ 531,786	$ 3,529,508	109,000

[44] This assumes that Northern Utilities d/b/a Unitil is the only Maine LDC participating.

Total	**$ 1,587,435**	**$ 10,639,100**	**327,000**

* Natural gas assessment is made only on the customers of Northern Utilities d/b/a Unitil.

We have several concerns about natural gas MACE. First, even if the survey/"best fit" approach were reliable, the Summit Blue Study, even though released in 2010, relied upon a survey of older studies conducted between 2004 and 2009. Thus, given the passage of time, it would not reflect current sales levels, gas prices, technologies, costs, and other factors relevant to natural gas MACE.

More fundamentally, however, relying solely on findings in other jurisdictions, and then exporting those findings in percentage of load terms to define MACE for Maine, is in our view, not a sufficiently reliable guide to justify the substantial funding increases being sought by EMT. Our concern in this regard is heightened by the fact that EMT's existing natural gas programs have not recently been evaluated because they are not major programs subject to the statutory evaluation requirement in 35-A M.R.S. § 10104(10),[45] nor, as discussed above in Section IV.B.2, has EMT provided B/C Ratios for these specific programs.

Northern has raised other concerns about the natural gas programs, and opposes any increase to the SBC at this time. Northern's concerns include the fact that natural gas programs are not sufficiently segregated to ensure that its customers receive the full benefit of the funds they provide, as well as the lack of specificity in program design and effectiveness necessary to support such an increase to the SBC.

We do not agree with Northern that it is necessary to segregate the natural gas programs activities that are funded by and the Natural Gas Conservation Statute assessment into a separate program for Northern's customers because we find credible EMT's hearing testimony that it tracks and spends all of the money that it collects from Northern's customers pursuant to the Natural Gas Conservation Statute assessment on efficiency measures that directly benefit Northern's customers. We do agree with Northern, however, that in light of the fact that Northern's customers are subject to two efficiency assessments (one under 35-A M.R.S. § 10110(4) and another under § 10111(2)), it is reasonable to scrutinize the proposed increase in funding for natural gas programs and require that EMT provide additional information to establish the cost-effectiveness of those programs.

[45] In the December 11, 2012 Technical Conference, Michael Stoddard testified that EMT relied upon the Summit Blue Study to determine MACE for natural gas because it would cost several hundred thousand dollars to conduct an independent MACE study for natural gas – which would blow a substantial portion of EMT's natural gas budget. EMT's natural gas revenues under the Base funding scenario are approximately $530,000 per year.

Given these issues, we find that EMT has not provided adequate evidence for us to make a determination as whether the level of MACE that EMT proposes for natural gas in Maine is reasonable and whether the natural gas SBC assessment should be increased to fund EMT's MACE proposal. Accordingly, we recommend no change to the natural gas SBC at this time. This determination is without prejudice; if EMT submits additional information at any time over the Plan Period to support natural gas MACE and an associated increase in the natural gas SBC to fund EMT's efforts to achieve progress towards MACE over the remaining Plan Period, the Commission will reconsider its decision not to recommend an increase in the natural gas SBC assessment.

Any information that EMT submits to supplement its case for natural gas MACE should include, at a minimum, a third-party or EMT assessment of the B/C ratios for EMT's natural gas programs and a MACE assessment that uses updated natural gas pricing for purposes of calculating avoided energy supply costs. In light of the smaller magnitude of the natural gas efficiency program budget relative to the electricity efficiency program budget, we do not require EMT to submit a potential study with the level of detail comparable to that in the Cadmus Report.

F. EMT Supplemental Proposal for Distributed Generation MACE

On January 25, 2013, after the competition of discovery and the hearing, EMT filed a separate MACE estimate for distributed generation (DG) and provided B/C Ratios and Budget Spreadsheets that include the DG MACE proposal.

In light of the timing of the filing, we have not had an adequate opportunity to analyze this proposal. Accordingly, we will not address it here.

To the extent that EMT seeks to include the DG MACE proposal in its MACE funding, the Commission will conduct a subsequent proceeding to consider it more fully.

G. Ongoing Oversight Role

In its exceptions, ENE suggested that the Commission should conduct ongoing oversight of EMT regarding program design, monitoring, and evaluation. ENE also suggested that the Commission should oversee an annual review process to incorporate new information into EMT's Triennial Plan. We decline to increase the level and frequency of our oversight of EMT. Absent additional direction from the Legislature, we find that we should not reexamine these elements until the next triennial review, unless, of course, we are requested to do so in an updated Plan filing. To the extent that there is a significant change to the Second Triennial Plan as approved by this Order, the Act provides an opportunity for EMT to file an updated Plan. Any ongoing, more frequent oversight is a more appropriate role for the EMT Board, which has its own technical expertise.

EMT noted in its exceptions that the Commission should use the statutorily allowed allocation of funds to hire expert resources to perform in-depth analyses and reviews of EMT filings. The Commission is aware of the availability of

these funds and as the time for filing the Third Triennial Plan approaches, we will consider whether hiring a third-party or in-house expert to assist in the review of EMT's Third Triennial Plan will be an effective and efficient use of ratepayer money.

V. CONCLUSION

We accept the recommendation of the Examiner's Report and approve EMT's Base Triennial Plan and Recommended Electric MACE Triennial Plan. We also approve EMT's Electric MACE Plan to the extent that EMT is able to obtain funding from sources other than the Funding Statutes to make up the difference between the Recommended MACE and EMT's Electric MACE. We find that the Plans comply with the requirements of the Efficiency Maine Trust Act and reasonably explain how the programs funded by the Funding Statutes will satisfy the requirements of those statutes and that the performance metrics included in the Plans are reasonable and in the public interest.

We do not approve the portion of EMT's proposed MACE Plan that pertains to natural gas MACE or distributed generation, but we permit EMT to submit an updated natural gas and/or distributed generation MACE proposal that we will consider at a future date, if and when it is filed.

Finally, we recommend that the Legislature's Joint Standing Committee on Energy, Utilities, and Technology approve EMT's budget, as modified by this Commission's approval of the Recommended Electric MACE Plan (which includes less funding than was proposed in EMT's MACE Plan) and disapproval of EMT's natural gas MACE proposal. We recommend that the Legislature approve an increase in the electric SBC pursuant to 35-A M.R.S. § 10110(5) sufficient to fund the Recommended MACE Plan.

Accordingly, we

ORDER

1. That Efficiency Maine Trust's Base Triennial Plan and Recommended Electric MACE Plan are approved.

2. That EMT's Corrected Electric MACE Plan is approved to the extent that EMT is able to obtain funding from sources other than the Funding Statutes to make up the difference between the Recommended MACE and EMT's Electric MACE Plans.

3. That we recommend to the Legislature in accordance with 35-A M.R.S. § 10110(5), that the electric system benefit charge be increased to fund energy efficiency programs at the levels contemplated in the Recommended Electric MACE Plan as set forth in this Order.

4. That EMT shall file with the Commission revised Budget Spreadsheets that reflect the allocation of funds for various programs during the Plan Period pursuant to the Corrected EMT Electric MACE Plan and the Recommended Electric MACE Plan. Both of these Budget Spreadsheets shall include Natural Gas programs at the Base funding scenario and shall not include the Distributed Generation MACE funding scenario.

5. To the extent that the measures of performance are different in EMT's Corrected Electric MACE Plan and the Recommended Electric MACE Plan, EMT shall revise the performance metrics to reflect these Plans pursuant to the same methodology used to develop the EMT's Original MACE level performance metrics that we approve here. EMT shall file these revised performance metrics with the Commission within a reasonable time after they are developed.

Dated at Hallowell, Maine, this 6th day of March, 2013.

BY ORDER OF THE COMMISSION

/s/Nancy Goodwin

Nancy Goodwin
Acting Administrative Director

COMMISSIONERS VOTING FOR: Welch

Littell (concurring in part)

Vannoy

CONCURRENCE OF COMMISSIONER LITTELL

I agree with the approval of EMT's Base and Recommended Electric MACE Triennial Plan, as well as the approval of EMT's Electric MACE Plan to the extent that EMT can obtain alternative funding sources for the funding gap above Recommended Electricity MACE. I also join with the Commission for a unanimous recommendation to the Legislature that it approve an increase in the electric SBC to support energy efficiency at the level represented by Recommended Electric MACE.

I acknowledge, however, that for purposes of determining Recommended MACE, I also could have supported an alternative discount rate at a level equivalent to the current yield on long-term U.S. Treasury securities, adjusted for inflation, rather than the 7-10 percent discount rate range that the Commission adopted. EMT Rules, Ch. 380, § (4)(A)(3). Using a lower rate, as opposed to modifying the discount rate to something more akin to a typical utility weighted cost of capital at 10 percent, would have the impact of increasing the Recommended MACE level and has the benefit of consistency, conformance to EMT's own rules and this Commission's past practice. Using a lower discount rate is also consistent with discounting practices in other New England States for evaluating energy efficiency. My review of the EPA White Paper referenced in the majority opinion supports using a lower, societal discount rate.

I concur with the opinion's recognition that net-to-gross is primarily an operational measure to evaluate and improve program effectiveness. Net-to-gross is not a discount on program effectiveness.

Using an estimate of free-ridership to evaluate achievable efficiency for purposes of evaluation of the benefits is fraught with difficulty because it uses an operational management concept for a purpose it is not intended across all efficiency programs to produce a reduction to detailed program-by-program efficiency potential estimates already conservatively calculated.

The application of net-to-gross and free-ridership was subject of substantial examination at the hearing. All witness testimony was consistent that: Free-ridership evaluations are used to recalibrate incentives, target new sub-markets, and shift funding to other program when free-ridership reaches high levels. Jan. 8, 2013 Hearing Transcript, p. 65. As Mr. Fratto of GDS Associates testified at the hearing, "Net-to-gross ratio is a programmatic statistic. It doesn't really affect the potential that's out there." *Testimony of Robert Fratto*, Jan. 8, 2013 Transcript, p. 183. Free-ridership is highly dependent on the program, meaning how the program is designed and delivered. *Id.* Because free-ridership is used operationally to calibrate program effectiveness and because it can change with time, it is not stable measure.

Reducing program funding by free-ridership does not change the cost-effectiveness of efficiency that is achievable, nor does it in any manner correct for free-

ridership, it simply reduces the savings achievable from efficiency. *See NRCM Exceptions at p. 4.* Because it is concerned with total efficiency saving to the electrical grid, ISO-New England requires reporting of efficiency on a gross basis, rather than a net basis,[46] and comparability of reporting statistics from year to year supports using gross measures. Further, free-ridership is assessed by surveys that have a large subjective component. The surveys in which free-ridership is estimated are subjective for both the evaluator in phrasing the questions and the respondent in answering those questions. *Testimony of Michael Stoddard,* Jan. 8, 2013, Transcript, pp. 32, 208.

To the extent free-ridership is used to discount achievable efficiency, spillover must also be used to account for efficiency benefits. To save funds, the Trust has not asked its evaluators to measure spillover, but that does not mean spillover is *de minimis*. In fact, spillover may be substantial. The intent of the Act is to pursue transformational efficiency measures. Using the Maine Compact Fluorescent (CFL) bulb program as an example, ten years ago very few Maine citizens purchased CFLs. Now, as a result of successful CFL educational and rebate programs, the market is significantly transformed with many homeowners and businesses purposefully purchasing CFLs. So some of these purchases may be now considered free-ridership if they would make the purchase anyway without a rebate. But from a ten-year perspective, this free ridership in 2013 is spillover from the earlier CFL program education, outreach and effectiveness in prior years. Free-ridership in the current period is spillover from prior periods for a transformative program and it is a sign of successful transformation.

Where this leads me is to recognize that assessing net-to-gross ratios to minimize free-ridership, target subgroups, or shift funding to other programs when market transformation or saturation reaches sector and program specific levels is fundamentally an operational management and delivery concept. I accept the reduction in program effectiveness attributed to net-to-gross ratio for the purpose of setting a high standard for purposes of determining the amount increase in of ratepayer funding to support MACE, but caution against the precedent of discounting the benefits or cost-effectiveness for specific or all efficiency programs in this manner in the future.

In light of the importance of having a clear and unanimous set of recommendations to the Legislature, I leave this issue for a future day and concur with the Order.

[46] *Testimony of Michael Stoddard,* Jan. 8, 2013 Hearing Transcript, pp. 23-24.

ATTACHMENT 1

SECOND TRIENNIAL PLAN PROGRAM LIST

Residential Customers		
	Residential Retail Products Program - Electri	Plan at p. 61-63
	Residential Low Income Program - Electric	Plan at p. 64-65
	Residential Low Income Program – Natural Gas	Plan at p. 66-68
	Home Energy Savings Program	Plan at p. 69-74
Business Customers		
	Business Incentive Program - Electric	Plan at p. 45-48
	Business Incentive Program – Natural Gas	Plan at p. 49-51
	Small Business Direct Install	Plan at p. 52-54
	Commercial New Construction Program	Plan at p. 55-56
	Large Customer Program	Plan at p. 57-60
Alternative Energy		
	Renewable Rebate Program	Plan at p. 75-77
	Renewable and Efficiency Research, Development and Demonstration Projects	Plan at p. 78-79
	Innovation Program	Plan at p. 84-86
	Research and Evaluation	Plan at p. 87-89
	Database	Plan at p. 90-91

SECOND TRIENNIAL PLAN DISCONTINUED PROGRAMS

Residential Customers		
	Replacement Heating Equipment Rebate	
	Refrigerator Replacement	
	Low Income Refrigerator Replacement	
Business Customers		
	High Performance Schools	
	Commercial Grant Program	
	Municipal Grant Program	
	Maine Advanced Building Initiative	
	Retro-Commissioning	
	Multi-Family Retrofit	
	Small Business Audits Program	

NOTICE OF RIGHTS TO REVIEW OR APPEAL

5 M.R.S. § 9061 requires the Public Utilities Commission to give each party to an adjudicatory proceeding written notice of the party's rights to review or appeal of its decision made at the conclusion of the adjudicatory proceeding. The methods of review or appeal of PUC decisions at the conclusion of an adjudicatory proceeding are as follows:

1. Reconsideration of the Commission's Order may be requested under Section 1004 of the Commission's Rules of Practice and Procedure (65-407 C.M.R.110) within 20 days of the date of the Order by filing a petition with the Commission stating the grounds upon which reconsideration is sought. Any petition not granted within **20** days from the date of filing is denied.

2. Appeal of a final decision of the Commission may be taken to the Law Court by filing, within **21** days of the date of the Order, a Notice of Appeal with the Administrative Director of the Commission, pursuant to 35-A M.R.S. § 1320(1)-(4) and the Maine Rules of Appellate Procedure.

3. Additional court review of constitutional issues or issues involving the justness or reasonableness of rates may be had by the filing of an appeal with the Law Court, pursuant to 35-A M.R.S. § 1320(5).

Note: The attachment of this Notice to a document does not indicate the Commission's view that the particular document may be subject to review or appeal. Similarly, the failure of the Commission to attach a copy of this Notice to a document does not indicate the Commission's view that the document is not subject to review or appeal.