The Commonwealth of Massachusetts

DEPARTMENT OF PUBLIC UTILITIES

D.P.U. 08-50-A March 16, 2009

Investigation by the Department of Public Utilities on its own Motion into Updating its Energy Efficiency Guidelines Consistent with An Act Relative to Green Communities.

TABLE OF CONTENTS

I. EXECUTIVE SUMMARY

On July 2, 2008, Governor Patrick signed into law the Green Communities Act ("Act"), providing for a significant expansion of funding for energy efficiency programs in the Commonwealth. In today's Order, the Department of Public Utilities ("Department") updates portions of our existing Energy Efficiency Guidelines to be consistent with the Act, and to provide further guidance to stakeholders during this period of efficiency program expansion. The new Guidelines are built on the Department's existing Energy Efficiency Guidelines, which were established in 1999, and have supported the delivery of successful, cost-effective energy efficiency programs to the Commonwealth's citizens for well over a decade.

The Green Communities Act requires Program Administrators (the electric and gas distribution companies and municipal aggregators that provide the efficiency programs to customers) to develop three-year energy efficiency plans that include all cost-effective energy efficiency opportunities. These changes, together with other provisions of the Green Communities Act, will require the development and deployment of significantly expanded and more innovative energy efficiency programs beginning in 2010. Recognizing this, the Department opened this investigation in August 2008 to review its Guidelines, since these legislative changes will directly affect how Program Administrators develop their energy efficiency plans to be submitted to the Department for review this year.

The Department's investigation and this Order primarily focus on the criteria for determining energy efficiency program cost-effectiveness and shareholder performance incentive and penalty mechanisms. Today, the Department reaffirms that the Total Resource

Cost test -- which includes all costs and benefits associated with the energy system, as well as all costs and benefits associated with program participants -- continues to be the most appropriate test to use in analyzing energy efficiency cost-effectiveness, and is consistent with the requirements of the Green Communities Act. We also make the following findings:

- In general, cost-effectiveness evaluations of energy efficiency resources should be performed at the program level, instead of at the more narrow measure level or the broader portfolio level. However, hard-to-measure efficiency programs (i.e., those programs where benefits are difficult to quantify but are expected to be substantial), should be evaluated at the sector level.

- The costs of complying with reasonably foreseeable environmental laws and regulations (i.e., those costs that are, or are expected to be, included in electricity or gas prices) should be included in the Total Resource Cost test. Environmental externalities (i.e., those costs associated with environmental damages that are not, and are not expected to be, included in electricity or gas prices) should not be included in the Total Resource Cost test.

- The discount rate used for the Total Resource Cost test should be equal to the historic twelve-month average of the yields of ten-year United States Treasury notes.

- The benefits from demand-reduction-induced price effects in the wholesale energy and capacity markets should be included in the Total Resource Cost test, but only to the extent that those benefits accrue to Massachusetts electricity customers.

- Distribution companies may propose shareholder performance incentive mechanisms, with input from the Energy Efficiency Advisory Council, in their three-year energy efficiency plans. The Order presents a set of principles that the Department will use in reviewing the proposed incentive mechanisms.

- The three-year energy efficiency plans should include a comprehensive and well-documented assessment of average rate and bill impacts.

Our investigation also addressed issues regarding the Department's review of the three-year energy efficiency plans, as well as annual energy efficiency reports. A working group of interested stakeholders has been meeting to address these topics, by developing filing templates and model procedural schedules that will allow for expedited review of energy efficiency plans and programs. The working group's report is expected to be filed for Department review in the near future, and at that time the Department will review the report and incorporate its findings into our Guidelines as appropriate.

II. INTRODUCTION AND PROCEDURAL HISTORY

On July 2, 2008, An Act Relative to Green Communities, Acts of 2008, chapter 169 ("Green Communities Act" or "Act") was signed into law. The Green Communities Act mandates significant changes to the energy efficiency programs developed and administered by the Commonwealth's electric and gas distribution companies and municipal aggregators (together, "Program Administrators"). Specifically, Program Administrators are required to develop energy efficiency plans that will "provide for the acquisition of all available energy efficiency and demand reduction resources that are cost effective or less expensive than supply." G.L. c. 25, § 21(b)(1). To accomplish this goal, the Act directs Program Administrators to develop three-year, statewide energy efficiency plans, specifies the components of the energy efficiency plans, establishes a new Energy Efficiency Advisory Council ("Council"), and creates a new stakeholder and regulatory review process for the energy efficiency plans. G.L. c. 25, §§ 21, 22.

Given the Green Communities Act's significant changes related to the delivery of energy efficiency in the Commonwealth, the Department of Public Utilities ("Department") determined this to be an appropriate juncture to open the current investigation to update the energy efficiency guidelines that were established in Investigation to Establish Methods and

Procedures to Evaluate and Approve Energy Efficiency Programs, D.T.E. 98-100 (2000) ("Energy Efficiency Guidelines"). Accordingly, on August 22, 2008, the Department issued its vote and order opening Investigation by the Department of Public Utilities on its own Motion into Updating its Energy Efficiency Guidelines Consistent with An Act Relative to Green Communities, D.P.U. 08-50 (2008). This investigation is focused on reviewing the existing standards for energy efficiency cost-effectiveness, shareholder performance incentives, Department review of energy efficiency plans, and Department review of energy efficiency annual reports. D.P.U. 08-50, at 3. In furtherance of this investigation, the Department received comments from the following interested persons: the Attorney General of the Commonwealth of Massachusetts ("Attorney General"); the Associated Industries of Massachusetts, the Greater Boston Real Estate Board, the Massachusetts Chapter of the National Association of Industrial and Office Properties, and the Energy Consortium (collectively, "AIM"); the Cape Light Compact ("Cape Light"); Comverge; the Guidelines Consensus Group ("Consensus Group");[1] the Commonwealth of Massachusetts Department of Energy Resources ("DOER"); GasNetworks;[2] the Low-Income Weatherization and Fuel Assistance Program Network ("Low-Income Network"); Northeast Energy Efficiency

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1 The Consensus Group consists of the Conservation Law Foundation; Environment Northeast; Environmental Entrepreneurs; the Massachusetts Climate Action Network; and the Northeast Energy Efficiency Council.

2 GasNetworks is an unincorporated association consisting of: Bay State Gas Company; The Berkshire Gas Company; the National Grid Gas Companies (Boston Gas Company, Colonial Gas Company, and Essex Gas Company); Fitchburg Gas and Electric Light Company d/b/a Unitil; New England Gas Company - Fall River Service Area; New England Gas Company - North Attleboro Service Area; and NSTAR Gas Company.

Partnership, Inc. ("NEEP"); National Grid; NSTAR Electric Company and NSTAR Gas Company (collectively, "NSTAR"); Wal-Mart Stores East, L.P. ("Wal-Mart"); Western Massachusetts Electric Company ("WMECo"); and the Program to Advance Use of Sustainable Energy at UMass-Boston ("UMass-Boston"). Initial Comments were filed on September 22, 2008, technical conferences were conducted at the Department's offices on October 7 and 10, 2008, and reply comments were filed on October 14, 2008. The Department acknowledges the substantial contribution of all participants in the technical conferences and the thoughtful written comments submitted in this matter.

In this Order, the Department addresses: (1) the criteria for determining energy efficiency program cost-effectiveness; (2) shareholder performance incentive and penalty mechanisms; (3) Department review of three-year energy efficiency plans, including our review of rate impact analyses; and (4) Department review of annual energy efficiency reports. The Department has convened a working group, comprised of interested stakeholders, that is charged with proposing templates for both energy efficiency plans and energy efficiency annual reports, and proposing model procedural schedules for their respective reviews. The working group is ongoing and its report has not yet been filed. Thus, we reserve for a later date our findings regarding Department review of energy efficiency plans, energy efficiency annual reports and model procedural schedules. The Department anticipates issuing revised Energy Efficiency Guidelines once we have made such findings.

III. CRITERIA FOR ESTABLISHING PROGRAM COST-EFFECTIVENESS

A. Cost-Effectiveness Test

1. Department Proposal

In D.P.U. 08-50, the Department opined that the continued use of the Total Resource Cost test -- which includes all benefits and costs associated with the energy system, as well as all benefits and costs associated with the energy efficiency program participants -- is consistent with the Green Communities Act and proposed its continued use to determine the cost-effectiveness of energy efficiency programs. D.P.U. 08-50, at 15. The Department observed that the Act's references to the cost-effectiveness of energy efficiency and demand reduction resources in conjunction with the cost of supply appear to be consistent with the Total Resource Cost test. Id. at 16. This is so because the Total Resource Cost test relies on the avoided cost of supply as one of the most significant benefits of an energy efficiency program. Id.

The Department also noted that the Green Communities Act provides that the Department shall determine the cost of supply with consideration of the average cost of generation to all customer classes over the previous 24 months. Id., citing G.L. c. 25, § 21(a). The Department observed that our long-standing practice requires Program Administrators to use forecasts of energy supply costs that would be avoided by energy efficiency programs in determining program cost-effectiveness. Id. at 16-17. The Department explained that these forecasts of avoided costs are typically made for 20 to 30 years into the future -- to cover the expected lives of energy efficiency measures -- and include many factors as inputs, including the cost of generation in recent years. Id. at 17.

The Department proposed that: (1) energy efficiency plans include cost-effectiveness results for each year of the three-year planning period, as well as for the three-year term; and (2) a program would be considered cost-effective if it is demonstrated to be cost-effective for the three-year term, even if it is not cost-effective for one (or more) of the years of the term. Id. at 24. The Department sought comments on its proposals and requested that any interested person recommending an alternative approach discuss how such alternative approach is consistent both with the Green Communities Act and existing Department practice. Id. at 17.

2. Summary of Comments

a. Multiple Versus Single Cost-Effectiveness Tests

A majority of the commenters agree that the Department's proposal to continue using the Total Resource Cost test to screen energy efficiency programs for cost-effectiveness is appropriate and consistent with the Green Communities Act (Cape Light Initial Comments at 4-5; Comverge Initial Comments at 2; Consensus Group Initial Comments at 3-4; DOER Initial Comments at III.A.1; GasNetwork Initial Comments at 3; Low-Income Network Initial Comments at 1; NEEP Initial Comments at 2-3; National Grid Initial Comment at 2-3; NSTAR Initial Comments at 4; WMECo Reply comments at 5-6). Alternatively, the Attorney General and AIM advocate that the Department employ multiple cost-effectiveness tests (Attorney General Initial Comments at 5; AIM Reply Comments at 2-3). According to the Attorney General, subjecting energy efficiency programs to multiple cost-effectiveness screens would test them in different ways by exposing both strengths and weaknesses that may otherwise go undetected under a single test (Attorney General Initial Comments at 5-7). Similarly, AIM asserts that multiple cost-effectiveness tests would provide a new measure of transparency and additional data for decision makers and ratepayers (AIM Reply Comments at 3).

Those opposing multiple cost-effectiveness tests maintain that applying multiple tests would detract from the clarity and certainty that one test provides and could prove to be overly burdensome to Program Administrators (Cape Light Reply Comments at 4; Consensus Group Reply Comments at 3). Should the Department decide to apply multiple cost-effectiveness tests, NEEP requests that the Total Resource Cost test be accorded primacy over any other, thus maintaining transparency and consistency in the evaluation process (NEEP Reply Comments at 4).

b. Appropriate Type of Cost-Effectiveness Test

Cape Light, Comverge, Consensus Group, and WMECo support the Department's position that the Total Resource Cost test complies with the Green Communities Act's directive that energy efficiency program cost-effectiveness be determined in the context of the cost of supply (Cape Light Initial Comments at 5; Comverge Initial Comments at 2; Consensus Group Initial Comments at 4; WMECo Reply Comments at 5). WMECo observes that the Total Resource Cost test, which includes a comparison of total projected energy savings to the total cost of an energy efficiency program, is sufficient to meet the Green Communities Act's dual requirements that energy efficiency and demand reduction resources are cost-effective and are less expensive than the cost of supply (WMECo Reply Comments at 5).

DOER and NEEP urge the Department to consider incorporating quantifiable environmental externalities in the cost-effectiveness review (DOER Initial Comments at III.A.1; NEEP Reply Comments at 2) The Low-Income Network supports the inclusion of environmental benefits in the cost-effectiveness test and argues that the cost-effectiveness test should, over time, also account for economic development benefits that flow from energy efficiency programs (Low-Income Network Initial Comments at 1; Low-Income Network Reply Comments at 1-2). In opposing the inclusion of environmental externalities, AIM cautions that the goals corresponding to environmental externalities may change over time and that environmental externalities are difficult to quantify, which could result in a double counting of the associated benefits (AIM Reply Comments at 4).

When considering cost-effectiveness, NEEP urges the Department to concentrate on the effect of energy efficiency programs on customer bills rather than on rates (NEEP Reply Comments at 3). NEEP acknowledges that rates are likely to increase in the near term with the implementation of the Regional Greenhouse Gas Initiative ("RGGI"), the pursuit of all cost-effective energy efficiency, and revenue decoupling (id. at 3). NEEP argues, however, that energy efficiency as a less expensive resource than supply, will reduce customer bills on average, over time (id.).

c. Evaluation Level

Cape Light and the Consensus Group propose applying the cost-effectiveness test at the portfolio level, as opposed to the program level[3] (Cape Light Reply Comments at 5; Consensus Group Initial Comments at 6-7; Consensus Group Reply Comments at 5). Cape Light and the Consensus Group state that this approach is consistent with the longer term goals of the Green Communities Act, addresses some concerns regarding activities that may not have immediate or quantifiable savings, and supports the introduction of new types of energy efficiency measures (Cape Light Reply Comments at 5-6; Consensus Group Initial Comments at 6-7; Consensus Group Reply Comments at 5).

DOER proposes that the cost-effectiveness evaluation occur at the sector level (DOER Reply Comments at II.A.1). At the more granular end of the spectrum, the Attorney General advocates for cost-effectiveness screening at the measure level, stating that the Department has excluded non-cost-effective energy efficiency measures from energy efficiency programs (Attorney General Initial Comments at 9-10, citing Massachusetts Electric Company, D.P.U. 89-194/195, at 14 (1990)). The Low-Income Network notes that the Attorney

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3 In general, a three-year energy efficiency plan consists of a Program Administrator's energy efficiency programs as well as all supporting documentation. Collectively, the energy efficiency programs contained within the energy efficiency plan are referred to as the portfolio of energy efficiency programs. Each energy efficiency program, in turn, is made up of one or more discrete energy efficiency measures (e.g., compact fluorescent light bulbs). Program Administrators typically design energy efficiency programs that serve all customers, categorized by the following customer sectors: residential, residential low-income, and commercial and industrial. Annually, Program Administrators file energy efficiency reports regarding the prior year's energy efficiency plan implementation.

General's position relies on an 18-year old case that pre-dates the current rule, reflected in the Energy Efficiency Guidelines, by ten years; the Low-Income Network advocates for cost-effectiveness screening at either the program or portfolio level (Low-Income Network Reply Comments at 3). GasNetworks contends that screening each energy efficiency measure for cost-effectiveness could deter Program Administrators from pursuing technologies and measures that may not be cost-effective when viewed in isolation but that are either necessary for successful and safe program implementation or would have an overall benefit-cost value when integrated with other measures (GasNetworks Reply Comments at 6).

d. Discount Rate

Under the existing Energy Efficiency Guidelines, the discount rate is equal to the yield on 30-year United States Treasury ("Treasury") bonds available at the close of trading on the first business day of each year. Energy Efficiency Guidelines § 3.4. Commenters diverge on what they perceive to be the appropriate discount rate for the Department to apply in any cost-effectiveness test. The Attorney General asserts that the risks and economics of energy efficiency programs have changed dramatically as a result of changes in energy efficiency program investments and implementation under the Green Communities Act (Attorney General Initial Comments at 10). As such, the Attorney General argues that the discount rate used in the cost-benefit analysis should be the distribution company's overall weighted average cost of capital and not the Treasury bond rate (id. at 10-11). Cape Light notes that the average yield for 30-year Treasury bonds is similar to Cape Light's weighted average cost of capital and, therefore, argues that it appropriately takes into account the long-term nature of benefits accruing from energy efficiency measures (Cape Light Reply Comments at 10). The Low-Income Network asserts that the Green Communities Act represents a societal shift favoring investment in energy efficiency (Low-Income Network Reply Comments at 2). Thus, the Low-Income Network argues that the proper way to discount such societal investment is through a societal discount rate (i.e., a Treasury security rate) which represents the cost of capital for public investments (id.). The Low-Income Network, noting that energy efficiency measure life is closer to 20 years than to 30 years, suggests that the Department replace the 30-year Treasury bond rate with the 20-year rate (id.). Similarly, National Grid contends that the discount rate should be the average rate of the ten-year Treasury note for the last twelve months, arguing that the discount rate should reflect the risk associated with ratepayer investment and that average energy efficiency measure life is eleven to twelve years (National Grid Reply Comments at 4-5).

e. Presentation of Cost-Effectiveness Results

Cape Light, Comverge, the Consensus Group, DOER, GasNetworks, NEEP, and National Grid support the Department's proposal that energy efficiency plans include cost-effectiveness results for each year of the three-year planning period, as well as the total three years combined, with a program being deemed cost-effective if demonstrated to be cost-effective for the three-year term (Cape Light Initial Comments at 11; Comverge Initial Comments at 4; Consensus Group Initial Comments at 10; DOER Initial Comments at III.A.5; GasNetworks Initial Comments at 7; NEEP Initial Comments at 6; National Grid Initial Comments at 5). NSTAR contends that this three-year cost-effectiveness screening horizon will allow Program Administrators the flexibility to aggressively develop market initiatives that might otherwise not be deemed cost-effective (NSTAR Reply Comments at 8).

f. Measurement Units

NEEP contends that energy efficiency programs are moving towards whole building implementation strategies that capture broader benefits than the technology-specific programs that have traditionally been implemented (NEEP Reply Comments at 2). NEEP maintains that these programs often have cross-fuel benefits and, therefore, a fuel-blind calculation of energy efficiency program savings should be used (id. at 3). NEEP recommends that the Department encourage Program Administrators to measure and benchmark saving in British Thermal Units ("BTU") as a means to easily compare energy efficiency program benefits (id.).

3. Analysis and Findings

a. Multiple Versus Single Cost-Effectiveness Test

The Department's long-standing policy is to use a single test -- the Total Resource Cost test -- to evaluate the cost-effectiveness of energy efficiency programs. D.P.U. 98-100, at 15-16. The Attorney General and AIM urge the Department to use multiple tests in order to evaluate program cost-effectiveness from the distinctive perspectives offered by different tests (Attorney General Initial Comments at 6-8; AIM Reply Comments at 2-3).

Evaluating program cost-effectiveness from the perspectives of different tests could be useful to Program Administrators, the Council, and other stakeholders to the extent they wish to undertake diverse evaluations as they make decisions regarding the energy efficiency program designs and budgets that will be included in the energy efficiency plans. However, for the planning and program review process to proceed most efficiently, as it must given the 90-day review schedule imposed by the Green Communities Act, the Department must provide certainty and predictability to Program Administrators, the Council, and other stakeholders regarding the criteria we will use in our cost-effectiveness analysis. Applying multiple tests would create the uncertainty and unpredictability we seek to avoid. The Department's review of energy efficiency program cost-effectiveness should consist of an objective analysis based on a specified set of criteria and be as administratively simple as possible. This can best be accomplished through the use of a single cost-effectiveness test. Accordingly, we find that the incremental value that may accrue from the use of multiple cost-effectiveness tests is outweighed by the simplicity, clarity and efficiency that the continued use of a single cost-effectiveness test brings.

b. Appropriate Type of Cost-Effectiveness Test

The Department reaffirms that the Total Resource Cost test is the appropriate test for evaluation of the cost-effectiveness of ratepayer-funded energy efficiency programs. As stated above, because the Total Resource Cost test includes the avoided cost of supply as one of the most significant program benefits, use of this test satisfies the Green Communities Act's requirement that, among other things, energy efficiency programs be less expensive than supply.

With respect to environmental externalities, in Massachusetts Electric Company v. Department of Public Utilities, 419 Mass. 239 (1994), the Supreme Judicial Court addressed the circumstances under which the Department may require electric distribution companies to consider environmental impacts in evaluating energy resources. In the underlying case, Massachusetts Electric Company, D.P.U. 91-131, at 14-16 (1992), the Department required electric distribution companies to consider the consequences of various environmental externalities when selecting new electric power generation sources. The Supreme Judicial Court held that any consideration of environmental externalities by the Department must be based on a direct grant of regulatory authority from the Legislature. 419 Mass. 239, at 241. As such authority did not exist, the Supreme Judicial Court found that the Department could not require electric distribution companies to consider environmental externalities in evaluating energy resources. Id. at 241.

However, in that same case, the Supreme Judicial Court was careful to distinguish between the costs of complying with reasonably foreseeable environmental laws (i.e., those costs that are, or are expected to be, internal to electricity prices) and the costs of environmental externalities (i.e., those costs associated with environmental damages that are not, and cannot reasonably anticipated to be, covered by future laws and thereby included in electricity prices). Id. at 246.[4] Accordingly, without legislative authority, the Department

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[4] The Supreme Judicial Court found that the Department

> has regulatory authority over an electric utility's rates, and reasonable costs to be incurred in protecting the environment, whether mandated or voluntary, may be reflected in a utility's approved rates. In its rate regulatory function, therefore, the [D]epartment may direct the avoidance of conditions that a utility might experience, provided that reasonably anticipated future circumstances will impose costs on the utility that will be detrimental to the interests of ratepayers. Thus, if it reasonably appears that the current emission of a pollutant in lawful amounts will be affected in the foreseeable future by a prohibition, new

(continued...)

cannot directly require Program Administrators to include the cost of environmental externalities in the cost-effectiveness evaluations of energy efficiency programs, and we decline to do so here. We may, however, require Program Administrators to include reasonably foreseeable environmental compliance costs in evaluating energy resources. This authority is reflected in our existing Energy Efficiency Guidelines where we require Program Administrators to include in the Total Resource Cost test environmental compliance costs that are reasonably projected to be incurred in the future. Energy Efficiency Guidelines § 3.3.2(d).

Regarding environmental compliance costs, the avoided cost study currently used by Program Administrators includes costs associated with current and reasonably anticipated future environmental compliance requirements.[5] Recent legislation suggests that future environmental compliance requirements for the electric sector in Massachusetts and the rest of New England may be more stringent than those currently assumed in energy efficiency avoided cost studies. In particular, in August 2008, Governor Patrick signed into law the Global

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4 (…continued)

> restrictions, costly regulation, or pollution penalties or taxes, for example, the [D]epartment has the authority as a rate regulator to consider the appropriateness of avoiding that reasonably foreseen change and requiring that the utility pursue a course likely to be less costly to ratepayers in the long term.

419 Mass. 239, at 246.

5 These include the cost of purchasing carbon dioxide allowances under RGGI through 2012 and the cost of purchasing carbon dioxide allowances under a future federal cap and trade program (which is assumed to be more stringent than RGGI) beginning in 2013. Synapse Energy Economics, Inc., Avoided Energy Supply Costs in New England: 2007 Final Report (2007).

Warming Solutions Act of 2008, Acts of 2008, chapter 298 ("GWSA"),[6] which requires the creation of enforceable limits on greenhouse gas emissions for the years 2020, 2030, 2040 and 2050. G.L. c. 21N, § 3. The GWSA also provides for interim greenhouse gas emissions targets before 2020. G.L. c. 21N, § 6C. At the federal level, President Obama has committed to establishing limits on greenhouse gas emissions, and proposals for federal climate change legislation are under consideration in both the United States House of Representatives and the United States Senate. The Department considers existing state law and likely federal measures to control greenhouse gases to constitute reasonably anticipated environmental compliance costs that will be reflected in future electricity prices in the Commonwealth. Consequently, the Department expects Program Administrators to include estimates of such compliance costs in the calculation of future avoided energy costs.

The Low-Income Network recommends that Program Administrators account for the economic development benefits that flow from energy efficiency programs when evaluating their cost-effectiveness. The Green Communities Act permits Program Administrators, with Council approval, to prioritize projects that have economic development, job creation, or job retention benefits. G.L. c. 25, § 21(b)(2). We recognize the value of energy efficiency programs in promoting economic development and job benefits and encourage Program Administrators to work with the Council to identify and pursue such benefits in designing their energy efficiency programs. Given this express grant to the Council and Program Administrators to consider the value of such benefits in their prioritization of projects, we will

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6 Codified at G.L. c. 21N, §§ 1-18.

not mandate that such benefits be included in the definition of what represents a cost-effective energy efficiency resource.

The Attorney General suggests that the Rate Impact Measure test[7] be used to evaluate program cost-effectiveness as part of her proposed multiple-test approach. As described above, Program Administrators will continue to use the Total Resource Cost test as the sole measure of cost-effectiveness. We note, however, that the Green Communities Act requires the Department to consider the effect of any rate increases on residential and commercial customers when reviewing proposals for increased funding, through distribution rates, of energy efficiency activities. G.L. c. 25, § 19(a). Consequently, in reviewing energy efficiency program implementation the Department will consider the effects of increased distribution charges and average bill impacts, as we typically do with respect to any proposal for a change in a rate, tariff or charge jurisdictional to the Department. However, the Department finds that the Rate Impact Measure test is too limited and an inappropriate tool for the Department's review. Rather, we will require Program Administrators to provide for the Department's review a more comprehensive analysis of rate and average bill impacts than the Rate Impact Measure test allows. This rate and average bill impact analysis and the filing requirements to support it are discussed in Section VI.A, below.

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[7] The Rate Impact Measure test assesses the impact on customers who do not participate in energy efficiency programs.

c. Evaluation Level

The Department's existing Energy Efficiency Guidelines address cost-effectiveness at the program level and do not require that cost-effectiveness analyses be applied at the measure level. Energy Efficiency Guidelines § 3.5.[8] Since issuing D.P.U. 98-100, the Department has not required Program Administrators to include in their energy efficiency plans information supporting the cost-effectiveness of individual energy efficiency measures.

As a general rule, Program Administrators should implement energy efficiency measures whose benefits exceed their costs. However, the Department recognizes that there are circumstances in which it may be appropriate for an energy efficiency program to include individual measures that are not cost-effective on their own (e.g., a measure that may be integral to the success of a program that is cost-effective; a measure that would represent a lost opportunity if not installed at the time of an installation visit; or a measure that is integral to a whole house approach to efficiency installation).

The Green Communities Act indicates that energy efficiency measures should be evaluated at the program level. Pursuant to the Act, a "program included in the plan shall be screened through cost-effectiveness testing which compares the value of program benefits to the program costs… ." G.L. c. 25, § 21(b)(3) (emphasis added). Accordingly, the

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[8] In 1990, the Department's Order in Massachusetts Electric Company, D.P.U. 89-194/195, at 114 (1990), stated that only cost-effective measures should be included in energy efficiency programs. Nine years later, however, the Department did not include this requirement in the Energy Efficiency Guidelines. Investigation to Establish Methods and Procedures to Evaluate and Approve Energy Efficiency Programs, D.T.E. 98-100, at 4 (November 1999).

Department will not allow for energy efficiency cost-effectiveness screening at only the portfolio level, as some parties have suggested.

Therefore, the Department finds that cost-effectiveness screening for the energy efficiency plans should be performed at the program level, with the exception of hard-to-measure energy efficiency programs as discussed in Section III.B, below. Nonetheless, the Department will require Program Administrators to include sufficient information, where possible, in their three-year energy efficiency plans that will allow the Department to consider cost-effectiveness at the measure level. This will provide the Department with the ability to investigate, if necessary, how different measures contribute to the overall cost-effectiveness of energy efficiency programs.

d. Discount Rate

The cost-effectiveness of an energy efficiency program is determined by whether its benefits exceed its costs, in present value terms. In establishing the existing Energy Efficiency Guidelines, the Department determined that the discount rate to be used in cost-effectiveness tests should be equal to the yield on the 30-year Treasury bond at the close of trading on the first business day of each year. Energy Efficiency Guidelines § 3.4. The Department noted that energy efficiency activities were a low-risk investment and that using available rates on 30-year Treasury bonds was an appropriate method to estimate the proper discount rate. D.P.U. 98-100, at 3 (November 1999).

Citing the dramatic changes in the risks and economics of energy efficiency programs that will result from the Green Communities Act, the Attorney General suggests that the

Department adopt a discount rate that is equal to a distribution company's weighted average cost of capital (Attorney General Initial Comments at 10-11). We disagree. First, the cost component of the Total Resource Cost test includes costs to program participants as well as costs to the distribution company. Thus, the discount rate used in the Total Resource Cost test should reflect some combination of the opportunity costs to both the distribution company and ratepayers. Second, energy efficiency expenditures are low-risk investments from the perspectives of both the distribution company and the ratepayers. Distribution companies recover their energy efficiency costs directly from funds received through the Independent System Operator-New England's forward capacity market ("forward capacity market") and RGGI, and through charges to distribution customers within the year that they are spent and, thus, there is little risk and few carrying costs associated with these expenditures, unlike the risk and carrying costs that are associated with a distribution company's capital expenditures. Therefore, we find that a low-risk discount rate -- such as that represented by the yield on Treasury securities -- remains appropriate for calculating the present value of the costs and benefits in the Total Resource Cost test.

Several parties note that energy efficiency measures typically have lives shorter than 30 years and, therefore, argue it would be more appropriate to use the yield from the 20-year Treasury bond or the ten-year Treasury note as the discount rate. National Grid urges the Department to consider the yield from the ten-year Treasury note in determining the appropriate discount rate because the term is closer to the average energy efficiency measure life of eleven to twelve years (National Grid Reply Comments at 4-5). The Department agrees that the term of the Treasury security should be consistent with the measure lives of the energy efficiency programs and accepts that the average measure life is ten to twelve years. Accordingly, we direct Program Administrators to use the yield from the ten-year Treasury note in determining the appropriate discount rate for energy efficiency cost-effectiveness evaluations.

National Grid also recommends that the discount rate be based on the average of the previous twelve months of yields for Treasury notes, as it argues that this is a more appropriate indication of opportunity costs than a Treasury note yield that exists at the close of trading on the first business day of the planning year (id. at 5). Experience in recent months indicates that Treasury securities can be somewhat volatile, yet Program Administrators need to use discount rates that apply for a three-year planning period and apply these rates to efficiency measures whose savings extend many years beyond that. A historic twelve-month average of the Treasury note yield is likely to be a better indicator of long-term opportunity costs than that of a single day. Accordingly, we find that Program Administrators should use a discount rate that is equal to a twelve-month average of the historic yields from the ten-year Treasury note. Because Program Administrators require lead time to prepare their energy efficiency plans, which must be filed with the Council in April of the filing year, we find that Program Administrators should use the previous calendar year to determine the twelve-month average Treasury note yield.

The Department also recognizes that economic conditions can change significantly from year to year and that yields on Treasury securities have varied considerably over time. For example, during the late 1970s and early 1980s, the yields on Treasury securities (ten-, 20-, and 30-year terms) were significantly higher than they are today, reaching peaks in excess of 13 percent. Such variation could have a non-de minimis impact on the presumed value of energy efficiency, and the perceived risk of energy efficiency investments, and it will be important to review these conditions during each energy efficiency plan cycle. Therefore, if future yields on ten-year Treasury notes increase significantly relative to those of recent years, Program Administrators may propose other relevant indicators of low-risk opportunity costs that reflect the low-risk nature of energy efficiency investments and that could be used to determine discount rates. Such proposals must be approved by the Department before the submission of a three-year energy efficiency plan.

e. Presentation of Cost-Effectiveness Results

Many commenters support the Department's proposal that would find an energy efficiency program cost-effective if shown to be cost-effective for the three-year planning period, even if it is not cost-effective for one (or more) of the years of the three-year term. There were no objections to this proposal. Therefore, we will consider a program to be cost-effective as long as it is estimated to be cost-effective for the three-year planning period. Nonetheless, we will require each Program Administrator to include in its energy efficiency plan, cost-effectiveness results for each year of the three-year plan period, as well as for the three-year term.

f. Measurement Units

NEEP proposes that both gas and electric energy savings be expressed in BTUs, rather than in therms and kilowatt-hours ("kWh"), so that energy efficiency benefits from gas and electric efficiency programs can be easily compared (NEEP Reply Comments at 3). NEEP asserts that this approach would foster the movement of energy efficiency programs towards holistic, whole building implementation strategies (id. at 2).

The Department acknowledges that this comparison could provide interesting information and could assist with the integration of electric and fossil-fuel efficiency savings. Nonetheless, the Department will not require the expression of energy savings in BTUs at this time. We note that Program Administrators (or other interested persons) can readily perform the conversion calculations suggested by NEEP based on the electricity and fossil-fuel savings information contained in the energy efficiency plans.

B. Hard-To-Measure Energy Efficiency Programs

1. Department Proposal

The Green Communities Act allows energy efficiency plans to include some energy efficiency programs and activities that might not have immediate energy savings or whose energy savings may be difficult to quantify. G.L. c. 25, § 21(b)(2). These energy efficiency programs include: (1) programs for research, development and commercialization of efficiency products; (2) programs to support new appliance and product efficiency standards; (3) programs to integrate efficiency products with building energy codes or high performance sustainable buildings that exceed code; and (4) programs for public education regarding energy efficiency (collectively, "hard-to-measure energy efficiency programs"). G.L. c. 25, § 21(b)(2).

In D.P.U. 08-50, the Department proposed allowing Program Administrators to include the costs and benefits of hard-to-measure energy efficiency programs within the cost-effectiveness evaluation of the most relevant energy efficiency program, with the caveat that energy efficiency programs that include the costs and benefits of hard-to-measure energy efficient programs must still have a benefit-cost ratio greater than one in order to be considered cost-effective. D.P.U. 08-50, at 19-20. Moreover, the Department's proposal required that any such hard-to-measure energy efficiency program must be fully described in the energy efficiency plan and contain as much quantification of costs and benefits as possible, including a description of how the costs and benefits are accounted for in the most relevant energy efficiency program. Id. at 20.

The Department's proposal recognized that certain energy efficiency activities can be expected to lead to energy efficiency program savings and benefits, even though the realization of such savings may take several years or may be difficult to quantify. Id. at 18. Further, energy efficiency activities such as research and development of products or customer education of efficiency opportunities, may be necessary to support the implementation of other cost-effective energy efficiency programs and, thus, may indirectly result in cost-effective energy savings. Id. at 18-19.

2. Summary of Comments

AIM suggests caution when analyzing energy efficiency programs having savings that are difficult to quantify and that would require energy efficiency program reviewers to determine whether or not the energy efficiency programs will mature over time and demonstrate their cost-effectiveness (AIM Initial Comments at 9). Further, AIM would require that metrics be established for such hard-to-measure energy efficiency programs to ensure that their value can be determined (id.).

The Attorney General argues that hard-to-measure energy efficiency programs developed under the Green Communities Act should be evaluated for cost-effectiveness separately, so as not to hide their benefits and costs within some other energy efficiency program (Attorney General Initial Comments at 13). Were Program Administrators allowed to combine costs of a hard-to-measure energy efficiency program with another energy efficiency program, the Attorney General contends that the ability to understand the cost-effectiveness of either program would be diminished (id. at 14). Similarly, the Consensus Group opposes the Department's proposed approach, asserting that it would require Program Administrators to undertake a difficult and necessarily arbitrary process to determine which energy efficiency program is the "most relevant," as well as dampening innovation and flexibility (Consensus Group Initial Comments at 6-7). The Consensus Group argues that new activities that do not immediately fit into the program-by-program structure should be evaluated as part of the cost-effectiveness of the overall energy efficiency portfolio (Consensus Group Reply Comments at 6).

GasNetworks suggests Program Administrators be allowed the flexibility to allocate the costs of hard-to-measure energy efficiency programs among several applicable energy efficiency programs, instead of just one, and to screen for cost-effectiveness at the sector level (GasNetworks Initial Comments at 7). Additionally, GasNetworks advocates that Program Administrators be allowed to consider the non-quantifiable costs and benefits associated with the activities (GasNetworks Reply Comments at 5). GasNetworks cautions that if sector level review is not allowed, then Program Administrators would be deterred from pursuing energy efficiency programs that may not be cost-effective on their own but would have an overall positive cost-benefit value (id. at 6).

Cape Light, NSTAR and WMECo support the Department's proposal to allow Program Administrators to include the costs and benefits of hard-to-measure energy efficiency programs within the cost-effectiveness evaluation of the most relevant energy efficiency program associated with the activity (Cape Light Initial Comments at 7; NSTAR Reply Comments at 5-6; WMECo Reply Comments at 9). As a safeguard, Cape Light states that Program Administrators must clearly describe such efforts and be held to a one percent funding limit, as required by the Green Communities Act (Cape Light Initial Comments at 7, citing G.L. c. 25, § 21(b)(2)). As alternatives, Cape Light suggests that the Department: (1) exclude hard-to-measure energy efficiency programs from cost-effectiveness screening for a limited time; or (2) employ the Energy System test[9] to evaluate their cost-effectiveness (id. at 8).

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[9] The Energy System test considers the energy efficiency activity's costs and benefits to the energy system, excluding the costs and benefits associated with participating (continued...)

Along these lines, DOER proposes that hard-to-measure energy efficiency programs could be combined with other related energy efficiency programs to form "benefit groups," with periodic, independent evaluations of the costs, benefits, and goals associated with these hard-to-measure programs (DOER Initial Comments at III.A.2).

The Low-Income Network supports the Department's view that the cost-effectiveness for hard-to-measure energy efficiency programs should be considered across multiple years to account for cost penalties associated with ramp-ups of pilots and new energy efficiency programs (Low-Income Network Reply Comments at 2). The Low-Income Network, referring to the Green Communities Act, notes that with Council approval, the funding level of these programs is not limited to one percent of the budget (id. at 2, citing G.L. c. 25, § 21(b)(2)). While open to the idea, the Low-Income Network does not believe that the use of alternative tests for alternative technologies is appropriate at this time (id. at 2).

NEEP contends that a cost-benefit screening model may not be appropriate in all cases (NEEP Reply Comments at 5). NEEP stresses the importance of separating research and development programs, pilots, building energy codes, appliance standards, and new technology programs, from other energy efficiency programs in the portfolio in terms of the evaluation of cost-effectiveness (id.). NEEP also suggests that some new energy efficiency programs first be implemented as pilot programs and be exempt from cost-effectiveness testing (NEEP Initial Comments at 5).

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[9] (…continued)
customers. Before electric restructuring, this test was known as the Utility Cost test.

NEEP cautions that requiring all energy efficiency programs to have a benefit-cost ratio greater than one in the Total Resource Cost test in order to be considered cost-effective could result in outcomes that are inconsistent with the goals of the Green Communities Act (NEEP Initial Comments at 4; NEEP Reply Comments at 6). NEEP argues that without clear direction on how to evaluate hard-to-measure energy efficiency programs, Program Administrators may: (1) forego any independent evaluations of such programs; (2) not seek to claim any significant energy savings associated with such programs; or (3) decide against such program activity altogether (NEEP Initial Comments at 4; NEEP Reply Comments at 6). NEEP suggests that an alternative approach would be for the Department to allow Program Administrators to set aside funds in their annual budgets for innovative technologies that meet specific criteria, such as: (1) having the potential to provide significant energy or demand savings; (2) having the potential to achieve major cost reductions which would make them cost-effective for broad application; (3) representing the next-generation technologies to offer a next tier of savings when new state or federal efficiency standards take effect; or (4) leveraging funding from other sources to support market introduction (NEEP Initial Comments at 4).

National Grid recommends that the Department define a maximum percentage of energy efficiency funding for each year that can be dedicated to research and development, pilot programs, and education-based initiatives (National Grid Initial Comments at 3). National Grid suggests that the hard-to-measure energy efficiency programs' costs be excluded from the cost-effectiveness test and such programs be allowed so long as the overall portfolio benefit-cost ratio exceeds one (id. at 2-3).

3. Analysis and Findings

The Department agrees with those commenters who assert that including hard-to-measure energy efficiency programs within other programs would mask the true costs and benefits of both programs. In addition, allocating hard-to-measure energy efficiency programs to existing programs would result in arbitrary assignments that could limit the effectiveness of both the hard-to-measure, and measurable programs.

Given that the benefits of hard-to-measure energy efficiency programs are difficult to quantify using traditional methods, yet recognizing their potential value, the Department finds it appropriate to evaluate their cost-effectiveness as follows: (1) hard-to-measure energy efficiency programs should be evaluated at the sector level; (2) hard-to-measure energy efficiency programs will be evaluated by including their costs and benefits in the total costs and benefits of the relevant customer sector; and (3) if a hard-to-measure energy efficiency program causes the sector's benefit-cost ratio to fall below one, then that program will be deemed to be not cost-effective. In addition, Program Administrators must include in their energy efficiency plans the following information regarding hard-to-measure energy efficiency programs: (1) the best estimates available regarding the programs' savings, costs and benefits; (2) complete descriptions of the purpose, scope and designs of programs; (3) justifications for why the programs are qualified to be treated as hard-to-measure energy efficiency programs; and (4) any specific recommendations made by the Council regarding the programs.

The Green Communities Act limits expenditures for "programs for research, development and commercialization of products or processes which are more energy-efficient than those generally available" and "programs for development of markets for such products and processes" to not more than one percent of the efficiency funds without authorization from the Council. G.L. c. 25, § 21(b)(2). Thus, while the Act places limitations on these specific energy efficiency programs, the Act also charges the Council with the evaluation of energy efficiency program design, including whether to authorize an exemption to the funding cap. Budgets for these energy efficiency programs that exceed the one percent limitation will be evaluated by the Council; the Department will then evaluate the cost-effectiveness of such budgets that have received Council authorization.

While recognizing the unique aspects of pilot programs, the Department finds it appropriate to subject them to cost-effectiveness evaluation using the criteria established for hard-to-measure energy efficiency programs. Therefore, pilot programs will be evaluated over a three-year period, subjected to the Total Resource Cost test applied at the sector level. Further, pilot programs should be included as part of the Green Communities Act's one percent budget limitation for research and development programs.

C. New Types of Energy Efficiency Programs

1. Department Proposal

The Green Communities Act permits Program Administrators to propose energy efficiency programs that may be different from those implemented in the past (e.g., combined heat and power projects and demand response programs). G.L. c. 25, § 19(b); G.L. c. 25, § 21(b). In addition, energy efficiency programs need not be limited to those specified in the Green Communities Act. G.L. c. 25, § 21(b)(2). The Department proposed that the Total

Resource Cost test be applied universally to traditional energy efficiency programs, demand response programs, combined heat and power projects, or any other new type of efficiency program. D.P.U. 08-50, at 20. The Department requested that commenters address the unique aspects of determining the cost-effectiveness of new types of energy efficiency programs. Id. at 20-21.

2. Summary of Comments

In general, commenters encourage the development of new and innovative energy efficiency programs and question whether the Total Resource Cost test, by itself, is the appropriate evaluation tool for such programs (AIM Initial Comments at 8; Cape Light Initial Comments at 9; DOER Initial Comments at III.A.3; NEEP Initial Comments at 5). AIM posits that new guidelines be developed for the review of new programs (AIM Initial Comments at 8). Cape Light and NEEP request that the Department, for a limited period of time, exclude new types of energy efficiency programs from cost-effectiveness evaluations (Cape Light Initial Comments at 9; NEEP Initial Comments at 5). Cape Light reasons that its proposal affords the ability to test the efficacy of these programs and that without such testing these energy efficiency programs would not have the opportunity to advance (Cape Light Initial Comments at 9). Alternatively, Cape Light suggests that the Department screen new types of programs under the Energy System test (id.). NEEP states that exempting such programs from cost-effectiveness screening would allow programs to mature and give the Department and Program Administrators time to determine how a program can best be evaluated in the future

(NEEP Initial Comments at 5). DOER recommends that new programs be screened under both the Total Resource Cost test and the Societal Cost test[10] (DOER Initial Comments at III.A.3).

The Consensus Group and National Grid maintain that the Total Resource Cost test should be applied universally to traditional energy efficiency programs, demand response programs, combined heat and power projects, as well as any other new type of energy efficiency program because it is the only mechanism to ensure that the total cumulative present value of a program's benefits exceeds the total cumulative present value of its costs (Consensus Group Initial Comments at 8-9; National Grid Initial Comments at 4). For non-traditional energy efficiency programs, the Consensus Group would also require Program Administrators to provide greater detail on how to determine program cost-effectiveness in their energy efficiency plan filings and by working with the Council and the Department (Guidelines Consensus Group Initial Comments at 8-9). National Grid requests that the Department address the unique aspects of determining the cost-effectiveness of new types of energy efficiency programs, in any revised Energy Efficiency Guidelines (National Grid Initial Comments at 4).

NEEP urges the Department to encourage Program Administrators to introduce new technologies that potentially have great savings, even if they may not have benefit-cost ratios of greater than one at the present time (NEEP Initial Comments at 4). NEEP argues that energy efficiency plans should reflect investment in new technologies, research and design, and

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10 The Societal Cost test builds on the Total Resource Cost test by including an energy efficiency activity's benefits and costs that accrue to society at large.

new programs that will help the Commonwealth achieve the Green Communities Act's long-term energy efficiency goals (NEEP Reply Comments at 6). NEEP asserts that the legislature did not intend for each individual technology or program to have a benefit-cost ratio above one or have such a ratio early in its development, before economies of scale might lower its costs to a benefit-cost ratio of greater than one (id.). NEEP contends that such programs can be screened by allowing Program Administrators to provide multi-year analyses with projected cost reductions (NEEP Initial Comments at 4).

3. Analysis and Findings

As described in Section III.A, above, the Department found that the Total Resource Cost test is the most appropriate test to use in evaluating the cost-effectiveness of energy efficiency programs. We see nothing to suggest that new types of energy efficiency programs (e.g., combined heat and power projects and demand response programs) should be evaluated any differently than traditional efficiency programs. Such new programs may pose new challenges in terms of identifying and quantifying all the relevant costs and benefits but there is no need to deviate from the sound approach of the Total Resource Cost test, which includes all the costs and benefits that are experienced by either the energy system or the program participant.

We note that if Program Administrators are unable to quantify some of the costs and benefits of a new type of program because it is new, then such a program would be considered a hard-to-measure energy efficiency program and would be evaluated at the sector level as described above in Section III.B. Program Administrators must include in their three-year energy efficiency plans a complete description of such programs and a complete justification for why they should be considered a hard-to-measure energy efficiency program.

D. Demand-Reduction-Induced Price Effects

1. Department Proposal

Demand-reduction-induced price effects ("DRIPE") are benefits that were first introduced by Program Administrators in the 2006 energy efficiency plans. DRIPE benefits are the reductions in wholesale energy and capacity prices that occur as a result of a reduction in New England wholesale hourly energy or capacity demand. The reduction in wholesale costs is caused by the deployment of energy efficiency measures, which displace the need for higher priced generation at the margin. Recent studies have indicated that while the reduction in wholesale prices from energy efficiency programs might be relatively small, the benefits of those reduced prices can be significant because they are experienced by all entities purchasing from the New England wholesale electric markets. Synapse Energy Economics, Inc., Avoided Energy Supply Costs in New England: 2007 Final Report (2007); ICF Consulting, Avoided Energy Supply Costs in New England: 2005 Final Report (2005) (collectively, "AESC Reports"). The Department found that DRIPE are likely to represent positive benefits to electric customers in Massachusetts and accorded DRIPE appropriate weight when considering the cost-effectiveness of the 2006 electric energy efficiency programs. See, e.g., Western Massachusetts Electric Company, D.T.E./D.P.U. 06-69, at 6 (2007); NSTAR Electric Company, D.T.E./D.P.U. 06-45, at 6-7 (2007); Massachusetts Electric Company, D.T.E./D.P.U. 06-34, at 6-7 (2007). DRIPE benefits were also included in the 2007 energy efficiency plans. In approving these plans, the Department reiterated that DRIPE should be accorded due weight when considering the cost-effectiveness of energy efficiency programs. See, e.g., NSTAR Electric Company, D.P.U. 07-55, at 5-6 (2007); Massachusetts Electric Company, D.P.U. 07-48, at 5-6 (2007).

2. Summary of Comments

Overall, commenters support the inclusion of DRIPE benefits, both capacity and energy, in energy efficiency program cost-effectiveness testing (Attorney General Reply Comments at 7-8; Cape Light Initial Comments at 10; Consensus Group Initial Comments at 9-10; DOER Initial Comments at III.A.4; NEEP Initial Comments at 5; National Grid Initial Comments at 5). The Attorney General, Cape Light and NSTAR urge the Department to limit consideration to DRIPE benefits which accrue to Massachusetts (Attorney General Reply Comments at 8; Cape Light Initial Comments at 11; NSTAR Initial Comments at 5-6). The Attorney General argues that including DRIPE benefits that accrue to New England customers in the Total Resource Cost test is inconsistent with the test's premise (i.e., only program implementation benefits and costs that are directly incurred by distribution companies and program participants should be included) (Attorney General Reply Comments at 7-8).

Alternatively, the Consensus Group, DOER, NEEP, and National Grid argue for the inclusion of New England-wide DRIPE benefits in cost-effectiveness tests (Consensus Group Initial Comments at 9-10; DOER Initial Comments at III.A.4; NEEP Initial Comments at 5; NEEP Reply Comments at 7;National Grid Initial Comments at 5). The Consensus Group and NEEP, noting the regional construct of the wholesale electricity market, maintain that DRIPE benefits accrue in both Massachusetts and neighboring states and, therefore, these system-wide benefits should be incorporated in the cost-effectiveness evaluation of energy efficiency programs (Consensus Group Initial Comments at 9-10; NEEP Initial Comments at 5; NEEP Reply Comments at 7). Further, the Consensus Group states that it is the current practice in Rhode Island and Connecticut to consider DRIPE benefits that accrue throughout New England (Consensus Group Initial Comments at 9-10). In support of the inclusion of regional DRIPE benefits, DOER cites to the New England Governors' pact, signed on September 16, 2008, as evidence of a commitment to regional energy efficiency (DOER Initial Comments at III.A.4). National Grid also supports the inclusion of New England-wide DRIPE benefits arguing that this approach would enhance the development of energy efficiency programs (National Grid Initial Comments at 5).

Alternately, Cape Light notes that DRIPE may be temporary, lasting from four to five years (Cape Light Initial Comments at 10). Accordingly, Cape Light recommends that the Department include DRIPE benefits in the first three-year energy efficiency plans and reexamine the role of DRIPE for plans after 2012 (id.).

3. Analysis and Findings

The comments indicate a consensus that DRIPE benefits provide value to Massachusetts customers and that they should continue to be appropriately weighted in the evaluation of cost-effectiveness. There remains some disagreement among commenters, however, as to the scope of DRIPE benefits that should be included in the Total Resource Cost test. The Consensus Group, DOER, NEEP, and National Grid propose that energy efficiency plans should include benefits from both energy and capacity DRIPE on a New England-wide basis, while the Attorney General, Cape Light and NSTAR urge the Department to limit DRIPE benefits to those experienced in Massachusetts.

As described above, the Total Resource Cost test includes all costs and benefits of energy efficiency programs that can be attributed to either the energy system or the program participants. Reduced prices for wholesale energy and capacity are clearly benefits to the energy system and will benefit program participants as well as many electricity customers in New England. However, we find that the Total Resource Cost test should include only those costs and benefits that are experienced within the borders of Massachusetts. Using the state border as the boundary for our Total Resource Cost test is consistent with how the Department requires Program Administrators to account for federal costs and benefits associated with energy efficiency programs. The Department recently found that federal tax credits for energy efficiency investments should be subtracted from the costs included in the Total Resource Cost test because federal costs (or benefits) are outside the boundaries of the energy system and the participants that we consider to be central to the Total Resource Cost test. River Run Condominium Trust, D.P.U. 07-49 (2008). This same rationale can and should be applied to the costs and benefits that accrue to the other five New England states.

In addition, defining the boundaries of the Total Resource Cost test to be coincident with Massachusetts' borders this way is appropriate because the Department's jurisdiction extends only to electricity and gas customers in Massachusetts. The primary responsibility of the Program Administrators and the Department is to a gas or electric distribution company's customers within the Commonwealth. Furthermore, the inclusion of statewide DRIPE benefits in the evaluation of energy efficiency programs is consistent with the Green Communities Act, particularly the provision that requires electric Program Administrators to prepare joint statewide energy efficiency plans for review by the Council. G.L. c. 25, § 21(b)(1). Accordingly, Program Administrators should continue to use energy and capacity DRIPE benefits in their energy efficiency plans. However, we will diverge from past practice and require that cost-benefit analyses include only those DRIPE benefits that accrue to customers within Massachusetts.

In making this finding, the Department does not intend to discount the significance of out-of-state DRIPE benefits or other out-of-state benefits from the energy efficiency programs. Out-of-state benefits can be an important consideration in designing and implementing energy efficiency programs. For the purpose of identifying which programs are to be considered cost-effective and to be funded by Massachusetts' ratepayers, however, we find it appropriate to define the Total Resource Cost test as solely including benefits and costs that occur within the borders of Massachusetts. Bounding the Total Resource Cost test in this way will help achieve an appropriate balance between encouraging comprehensive statewide energy efficiency activities and limiting ratepayer costs associated with those activities.

E. Review of Changed Cost-Effectiveness Assumptions

1. Commenter Proposal[11]

Cape Light suggests that Program Administrators be allowed, at their discretion, to update the average cost of generation annually as an update to the three-year energy efficiency plan or perhaps in their annual energy efficiency reports (Cape Light Initial Comments at 6). Cape Light believes that updating such values will allow Programs Administrators to continually adapt available energy efficiency measures to the actual needs of customers and, thereby, be as responsive as possible to customers' needs (id.).

2. Analysis and Findings

Cape Light has identified one type of program planning assumption that may warrant reconsideration or updating during the course of the three-year energy efficiency program activities. According to Cape Light, avoided generation costs can change dramatically from year to year, and significantly improved forecasts may become available within the three-year period (e.g., when a new AESC report is completed).

There are other modifications that Program Administrators may wish to account for during the course of the three-year energy efficiency program activities. For example, new types of benefits or costs may be identified in the same way that DRIPE benefits were introduced in recent years. New studies could provide improved estimates of other benefits or costs. Furthermore, Program Administrators may wish to make modifications to their

11 The Department, in D.P.U. 08-50, did not address how changed cost-effectiveness assumptions would be reviewed; we did, however, invite comments on any issues related to this investigation. D.P.U. 08-50, at 39.

programs based upon information obtained and lessons learned from on-going program experience. <u>See</u> Section VI.C, below.

Any such modifications could result in significant improvements to the energy efficiency programs, which would in turn be beneficial to electricity and gas customers. The Department does not wish to preclude Program Administrators from making such improvements to energy efficiency programs during the course of the three-year energy efficiency activities. Nonetheless, we cannot allow Program Administrators to make significant changes to their planning assumptions and parameters without adequate regulatory review and stakeholder input.

Accordingly, during the course of their three-year energy efficiency activities, Program Administrators may propose changes to their energy efficiency program planning assumptions or the types of costs and benefits to be included in the Total Resource Cost test when evaluating their programs. Any such proposal must first be presented to the Council for approval and then included as part of a Program Administrator's annual energy efficiency report filing to the Department. The Department will consider such proposals as part of our review of the annual energy efficiency reports. <u>See</u> Section VI, below. Any such proposals that are accepted by the Department can be applied to future energy efficiency programs and plans. Reviewing proposals this way allows Program Administrators a certain level of flexibility to propose program planning improvements, while also ensuring that the Department is able to review such proposals in an efficient manner.

IV. SHAREHOLDER PERFORMANCE INCENTIVES AND PENALTIES

A. Performance Incentives

1. Department Proposal

In D.P.U. 08-50, we noted that the Green Communities Act contemplates the continued use of performance incentives for implementing successful energy efficiency programs but that the Act provides no guidance as to how an incentive mechanism should be structured. D.P.U. 08-50, at 25-26, citing G.L. c. 25, § 21(b)(2). We further observed that our recent Order on revenue decoupling, Investigation Into Rate Structures to Promote Efficient Deployment of Demand Resources, D.P.U. 07-50-A (2008), when implemented by distribution companies, will remove important financial barriers that distribution companies face in planning for and implementing energy efficiency programs. D.P.U. 08-50, at 26.[12]

In light of the Green Communities Act the Department proposed to modify the performance incentive section of the Energy Efficiency Guidelines by removing the existing prescriptive requirements and replacing them with a set of principles to be used in designing energy efficiency performance incentives. Id. at 27. The Department solicited comments on its proposal.

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[12] Under D.P.U. 07-50-A, the Department will permit electric and gas distribution companies to implement base rate adjustment mechanisms that will ensure that such companies would not experience reduced revenues as a result of successful energy efficiency programs. D.P.U. 07-50-A at 31-32. Historically, part of the rationale for a performance incentive was to provide companies with an adequate financial incentive to pursue energy efficiency, despite its impact in reducing sales volume and revenue.

2. Summary of Comments

Commenters are divided as to whether distribution companies should receive performance incentives for the successful deployment of energy efficiency programs. Both AIM and the Attorney General opine that because the implementation of energy efficiency programs is now mandated by statute, distribution companies are no longer allowed to earn performance incentives for their energy efficiency activities (AIM Initial Comments at 4; Attorney General Initial Comments at 14). In addition, AIM and the Attorney General argue that incentives are no longer necessary with the advent of revenue decoupling in Massachusetts (AIM Initial Comments at 4; Attorney General Initial Comments at 14). AIM states that if performance incentives are allowed, they should only be provided for outstanding programs and structured on a case-by-case basis (AIM Reply Comments at 5). The Attorney General asserts that outstanding performance in implementing energy efficiency programs is a factor best considered in a rate case proceeding when the Department sets a company's return on equity (Attorney General Initial Comments at 15-16). In the alternative, the Attorney General contends that if the Department allows performance incentives for energy efficiency activities, then the following conditions should apply: (1) incentives should be created for each distribution company on a case-by-case basis; (2) incentive proposals should be vetted by the Council; (3) the Council should conduct a review of incentive mechanisms used in other states; and (4) incentives should only be allowed in limited circumstances, such as to reward incremental savings or lower administrative costs (Attorney General Reply Comments at 6).

While recognizing the salutary effect of performance incentives, Cape Light, Comverge, the Consensus Group, DOER, the Low-Income Network, and NEEP urge the Department to adopt strategic parameters for their award (Cape Light Initial Comments at 13; Comverge Initial Comments at 5-6; Consensus Group Initial Comments at 10-11; DOER Initial Comments at III.B.1; Low-Income Network Reply Comments at 4; NEEP Reply Comments at 9). Cape Light states that incentives should be reserved to encourage new and innovative programs, rather than being awarded for those programs that are existing, familiar, and successful (Cape Light Reply Comments at 12). The Consensus Group and NEEP believe that incentives are integral to a successful energy efficiency portfolio and crucial for the development of the type of new technologies and programs contemplated by the Green Communities Act (Consensus Group Initial Comments at 10-11; NEEP Reply Comments at 9). Both the Consensus Group and NEEP argue that performance incentives allow distribution companies to make energy efficiency a primary business objective (Consensus Group Initial Comments at 10-11; NEEP Reply Comments at 9).

National Grid, NSTAR, and WMECo emphasize the continued need for performance incentives (National Grid Initial Comments at 6-8; NSTAR Reply Comments at 9-11; WMECo Reply Comments at 10). They contend that a performance incentive proposal is required under the Green Communities Act and that performance incentives motivate distribution companies to make energy efficiency a primary business objective, thus maximizing energy efficiency savings (National Grid Reply Comments at 7; NSTAR Reply Comments at 9-11; WMECo Reply Comments at 10).

Regarding the Department's proposal to replace its existing prescriptive approach to performance incentives with a series of guiding principles, Cape Light, the Consensus Group, GasNetworks, and NSTAR advocate that the Department retain its prescriptive approach (Cape Light Initial Comments at 13-14; Consensus Group Initial Comments at 10-11; GasNetworks Reply Comments at 8; NSTAR Initial Comments at 7-8). The Consensus Group and GasNetworks suggest that some flexibility be allowed to address changing circumstances (Consensus Group Initial Comments at 10-11; GasNetworks Reply Comments at 8). Cape Light and the Consensus Group advise capping incentives, decreasing incentive levels, and raising threshold performance levels (Cape Light Compact Initial Comments at 14; Consensus Group Initial Comments at 10-11). NSTAR voices concern that the proposed principles are highly subjective and not necessarily susceptible to quantification or independent evaluation (NSTAR Initial Comments at 7-8). Additionally, NSTAR asserts that subjective performance incentives will decrease the incentive to offer new, untested programs (id.).

GasNetworks proposes that the Department adopt a presumption that certain incentives are reasonable, to bring greater certainty to this issue and to facilitate planning (GasNetworks Reply Comments at 8). Under this proposed approach, the method used in the current Energy Efficiency Guidelines would presumed to be reasonable (with the one change being to replace the reference to the three-month Treasury bill with a fixed five-percent rate) (id.). This would provide a "safe harbor" if companies used the suggested approach, though they would also be permitted to propose different incentives (id.).

DOER, NEEP, and WMECo support the Department's proposal to replace the existing prescriptive requirements with guiding principles (DOER Initial Comments at III.B.1; NEEP Initial Comments at 6; WMECo Reply Comments at 11). DOER proposes that the Council consider the development of performance metrics for each annual three-year plan, with the ability to review and negotiate incentives after each year, and that the Council consider further incentive mechanisms that would reward outstanding performance (DOER Initial Comments at III.B.1). Despite its general support of the principles, WMECo takes issue with the principle proposing to keep funds available for incentives as low as possible in order to minimize the costs to electric and gas customers (WMECo Reply Comments at 11). WMECo argues that the policy goal should be to maximize savings through energy efficiency and the performance incentive should be strategically employed to meet this goal (id.).[13] WMECo also expresses concern with the principle proposing that incentive mechanisms should account for the fact that the implementation of revenue decoupling eliminates a critical financial barrier to energy efficiency programs (id. at 11, 13). WMECo observes that the implementation date of revenue decoupling for any distribution company is uncertain and, thus, the neutrality that revenue decoupling injects in the equation does not yet exist (id. at 14). Further, WMECo argues that while revenue decoupling may remove a disincentive to pursuing energy efficiency, there would still remain the need for a positive incentive (id.).

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[13] WMECo offers an alternative principle: "The level of the shareholder incentive should be set at the level, and no higher than the level, needed to achieve maximum demand-side reduction and energy efficiency savings" (WMECo Reply Comments at 11).

Finally, Cape Light notes that it has no shareholders (Cape Light Initial Comments at 12-15). As such, Cape Light requests a blanket exemption from any incentive-related compliance requirements (id.).

3. Analysis and Findings

A threshold question posed by some commenters is whether performance incentives should continue in light of the Green Communities Act's mandate that distribution companies engage in all cost-effective energy efficiency and the ability of distribution companies to pursue revenue recovery through decoupling or lost base revenues under D.P.U. 07-50-A. The Act explicitly allows distribution companies to include a proposed incentive mechanism in the three-year energy efficiency plans, subject to Council approval and comment. G.L. c. 25, § 21(b). Further, we note that performance incentives have historically worked well in encouraging successful, effective energy efficiency programs. Thus, we believe performance incentives should not be eliminated at this time and note that we expect that they will continue to play a vital role in encouraging successful and efficient energy efficiency program implementation.

Although revenue decoupling and lost base revenue recovery remove a key disincentive for distribution companies to pursue energy efficiency, they do not provide a positive incentive for the successful pursuit of energy efficiency programs. D.P.U. 07-50-A at 36. We conclude, however, that the implementation of decoupling or recovery of lost base revenues may justify reducing the magnitude of performance incentives required by distribution companies. Therefore, if a distribution company that has implemented revenue decoupling or is recovering lost base revenues proposes a performance incentive amount that equals or exceeds historic practice (on a percent of budget basis), then it must demonstrate why such performance incentive amount is appropriate.

Some commenters express concern that the Department's proposal to replace prescriptive guidelines with principles could lead to uncertainty for distribution companies (GasNetworks Initial Comments at 4; NSTAR Initial Comments at 7-10). GasNetworks proposes that the Department offer a "presumption of reasonableness" regarding the performance incentive, in order to offer companies adequate certainty in their energy efficiency process (GasNetworks Reply Comments at 8). Others state that the Department should provide greater clarity as well as firm parameters for the award of performance incentives (Cape Light Initial Comments at 14; Cape Light Reply Comments at 13). Yet others support this shift from prescriptive measures to principles (DOER Initial Comments at III.B.1; NEEP Initial Comments at 6).

We do not agree that shifting from a prescriptive incentive mechanism to general principles will create undue uncertainty and confusion for distribution companies. Before the commencement of the three-year term of a distribution company's energy efficiency plan, the proposed performance incentive will have been submitted to the Council for approval and comment and then to the Department for review and approval (or modification). Consequently, a distribution company will have a sufficiently clear understanding of the performance incentive that will apply to its energy efficiency plan prior to the plan's commencement.

As referenced above, the Green Communities Act specifies that an incentive mechanism proposal be included in an energy efficiency plan, which is to be designed by the distribution companies and reviewed by the Council. Following the Council's approval and comment on the energy efficiency plan, including the performance incentive, the Act requires the Department to review each distribution company's energy efficiency plan. Given this construct, the Department finds that establishing performance incentive principles, rather than a prescribed incentive mechanism, appropriately complies with the Act. Therefore, in reviewing the performance incentive mechanism included in an energy efficiency plan, the Department will rely on the following principles:

- Performance incentive mechanisms should be designed to encourage distribution companies to pursue all available cost-effective energy efficiency.
- The amount of funds available for performance incentive mechanisms should be kept as low as possible, in consideration of the other principles adopted herein, in order to minimize the costs to electricity and gas customers.
- Performance incentive mechanisms should be designed in such a way as to encourage energy efficiency program designs that will best achieve the Commonwealth's energy goals, particularly with regard to the goals stated in the Green Communities Act.
- Performance incentives should be based on clearly-defined goals and activities that can be sufficiently monitored, quantified and verified after the fact.
- Performance incentives should be available only for activities where the distribution company plays a distinct and clear role in bringing about the desired outcome.
- Performance incentive mechanisms should be as consistent as possible across all electric and gas distribution companies. Any deviations across distribution companies should be clearly justified.
- Performance incentive mechanisms should be created in such a way to avoid any perverse incentives.

- Any modifications to a previously approved performance incentive mechanism should be fully justified at the time they are proposed to the Department.

The Department expects that stakeholders will consider and propose performance incentives that are relatively consistent from one three-year energy efficiency plan to the next. Distribution companies may propose modifications to an approved performance incentive mechanism in any subsequent three-year energy efficiency plan, but they must provide sufficient justification demonstrating how the proposed modifications will improve upon the performance incentive mechanism with consideration of each of the design principles listed above.

The Consensus Group suggests that distribution companies propose performance incentives that are based on maximizing kilowatt ("kW") and kWh savings (Consensus Group Reply Comments at 10). One of the three components that is currently used for determining the performance incentive is based on maximizing energy, commodity and capacity savings. Energy Efficiency Guidelines § 5. Distribution companies may propose performance incentive mechanisms with this type of design. However, the Department declines to require such a design, as we recognize other priorities exist, such as supporting low-income programs or encouraging new and innovative measures and programs. Moreover, the Green Communities Act requires distribution companies to pursue all cost-effective energy efficiency, not just those measures and programs that maximize savings. G.L. c. 25, §§ 21(a), 21(b).

Cape Light suggests that performance incentives focus on encouraging distribution companies to pursue innovative programs and measures (Cape Light Reply Comments at 12). There is nothing to preclude distribution companies from proposing performance incentive mechanisms that encourage new and innovative programs and measures. At this time, however, the Department will not adopt this as a principle nor will we limit the performance incentive mechanism to such innovative activities. Distribution companies and the Council should have the flexibility to design performance incentive mechanisms that will lead to energy efficiency programs that best serve the interests of electricity and gas customers.

Some commenters address the question of the appropriateness of a cap on performance incentives (the current practice is a cap of five percent of program expenditures for the design level) (Cape Light Initial Comments at 14). The Department will not require a cap at this time. As with other issues pertaining to the performance incentive, we prefer to provide the distribution companies and the Council with flexibility on this issue.

Finally, Cape Light requests an exemption from any performance incentive-related compliance requirements (id. at 14-15). As noted above, the Green Communities Act requires energy efficiency plans to contain proposed performance incentive mechanisms. G.L. c. 25, § 21(b)(2). However, Cape Light is an intergovernmental organization and, as such, has no shareholders to which performance incentives would be applicable. Accordingly, this provision of the Act does not apply to Cape Light.

B. Penalty Provision of the Green Communities Act

1. Department Proposal

The Green Communities Act authorizes the Department to assess a penalty on distribution companies that do not reasonably comply with the energy efficiency plan. G.L. c. 25, § 21(e). If, after investigation, the Department determines that a distribution company has not demonstrated good cause for failing to reasonably comply with the energy efficiency plan, the Act allows the Department to levy a fine of not more than the product of \$0.05 per kWh or \$1.00 per therm times the shortfall of kWhs or therms saved. Id.

The Department has noted a concern that this provision could have a dampening effect on energy efficiency savings goals. D.P.U. 08-50, at 29. For example, a distribution company might be inclined to conservatively estimate its energy and capacity savings goals in order to ensure that it is able to meet such goals and, thus, not be subject to penalties under this provision of the Green Communities Act. The Department understands that there are many uncertainties inherent in energy efficiency program planning and implementation and that the new requirements of achieving all cost-effective energy efficiency and preparing three-year energy efficiency plans will increase those uncertainties significantly. Consistent with the intent of the Green Communities Act, we do not want to encourage distribution companies to be overly-cautious in designing energy efficiency programs. On the contrary, we wish to encourage distribution companies to be ambitious and innovative.

In D.P.U. 08-50, at 30, the Department contemplated providing guidance on this issue, in order to provide distribution companies with increased certainty regarding the shareholder risks associated with the penalty provision of the Green Communities Act. Specifically, the Department considered clarifying under what circumstances it would be appropriate to open an investigation under the Green Communities Act to determine if a penalty was warranted (e.g., establish performance thresholds that, when reached, would indicate an investigation is warranted). D.P.U. 08-50, at 30. The Department requested comments on this issue.

2. Summary of Comments

Commenters are divided on the appropriate application of the penalty provision of the Green Communities Act. AIM and the Attorney General urge the Department to adopt a penalty system (AIM Initial Comments at 9; Attorney General Reply Comments at 3). AIM argues that a penalty system is necessary to ensure compliance with the Act and the approved energy efficiency plan (AIM Initial Comments at 9). AIM suggests that a third-party reviewer be used to assess an efficiency plan's success, both initially and again in an annual review if savings fall below 80 percent of projections (id.). The Attorney General opines that a penalty mechanism in conjunction with rigorous reviews of efficiency plans and annual reports creates an appropriate system of checks and balances while ensuring that a distribution company achieves a high percentage of its savings goals (Attorney General Reply Comments at 3). Additionally, the Attorney General asserts that if a distribution company has the benefit of an incentive mechanism, then it should also bear a downside risk of a penalty if its savings goals are not met (id. at 4).

Other commenters assert that the penalty provision is potentially detrimental to achieving the Commonwealth's energy efficiency goals and they discourage the Department from implementing a penalty mechanism at this time. National Grid and WMECo argue that a reliance on, or even a threat of, penalties could divert resources and would result in less innovation in program efforts, undermining the intent of the Green Communities Act (National Grid Initial Comments at 8; WMECo Reply Comments at 16). GasNetworks argues that penalties are not required under the Green Communities Act and that penalties would deter distribution companies from pursuing optimal efficiency plans (GasNetworks Reply Comments at 10). NEEP contends that penalty provisions should not be imposed at this time. (NEEP Reply Comments at 10). If penalties are considered in the future, NEEP recommends that the Department consider the impact of such penalties on the Act's goal of promoting energy efficiency on a large scale (id.).

Cape Light, similar to its position with performance incentives, requests the Department to grant it an exemption from the Act's penalty provision (Cape Light Initial Comments at 15). Cape Light observes that it has no shareholders, states that any penalties assessed would be borne by ratepayers, and argues that this outcome is prohibited by the Green Communities Act's requirement that penalties shall not affect ratepayers (id.). Cape Light would, however, subject itself to a Department investigation for failure to reasonably comply with its energy efficiency plans (id.).

3. Analysis and Findings

We are not persuaded that it is appropriate at this time to establish guidelines regarding the application of the energy efficiency penalty provision of the Green Communities Act. Many commenters opposed such guidelines and no commenters proposed any specific guidelines for the Department to consider. In reviewing a distribution company's annual energy efficiency reports, the Department will consider whether the distribution company has reasonably complied with the three-year energy efficiency plan and whether there is any need to invoke the Act's penalty provision, G.L. c. 25, § 21(e).

Cape Light requests an exemption from the penalty provision, arguing that such penalties cannot be imposed on them without violating the Act. Cape Light has no shareholders and, therefore, any penalty would be borne by ratepayers, in contravention of the Act (Cape Light Initial Comments at 15). It is not the Department's intent to impose penalties under this section on ratepayers.

V. REVIEW OF THREE-YEAR ENERGY EFFICIENCY PLANS

A. Contents of Three-Year Energy Efficiency Plans

1. Department Proposal

Energy efficiency plans must contain all information necessary to: (1) determine whether a plan meets the requirements of the Green Communities Act; (2) support any requests for energy efficiency funding; and (3) address any unresolved issues that might be brought to the Department during its review. D.P.U. 08-50, at 31-34. As discussed above, the Department has convened a working group comprised of interested stakeholders whose charge is to create templates -- including content and format -- for energy efficiency plans and annual reports consistent with these goals. Once the templates are completed, the working group will file them with the Department for review. Accordingly, the Department will defer any findings on the appropriate filing requirements pending its receipt and review of the working group's report.

The Department will, however, address its proposed filing requirement that energy efficiency plans include sufficient information to allow the Department to make determinations regarding the effect of any resulting rate increases on residential and commercial customers. Id. at 32, citing G.L. c. 25, § 19(a).

2. Summary of Comments

When considering the impacts of energy efficiency programs on customers, NEEP argues that the appropriate focus is on customer bills rather than rates (NEEP Reply Comments at 3). NEEP argues that evaluating customer bills will provide a clearer representation of the effects of energy efficiency on the average customer (id.). However, should the Department determine that it is appropriate to evaluate rate impacts, especially in the short-term, NEEP argues that the Department should take steps to amortize some of an energy efficiency program's costs over an extended period of time, thereby distributing the impact over time and dampening the effect (id.). No other comments were filed on this topic.

3. Analysis and Findings

The Green Communities Act requires the Department to "consider the effect of rate increases on residential and commercial customers" when reviewing proposals for increased funding of energy efficiency activities. G.L. c. 25, § 19(a). The assessment of rate impacts from the energy efficiency programs will be important to the Department, and we expect that it will be of importance to many of the Massachusetts energy efficiency stakeholders. Therefore, consistent with the Act, and consistent with the Department's traditional review of any change in rates, charges and tariffs subject to our jurisdiction, we will require Program Administrators to include in their three-year energy efficiency plans a comprehensive and well-documented assessment of rate impacts and average bill impacts associated with their energy efficiency activities. Furthermore, we require all Program Administrators to use consistent inputs, assumptions and methods, to the extent it is appropriate and possible to do so.

The Department does not expect there to be any "bright line" or single standard that can be used to determine whether a particular rate or average bill impact associated with a particular energy efficiency plan is acceptable. Instead, we expect Program Administrators to present a comprehensive estimate of how energy efficiency programs are likely to impact customers' rates and average bills, and describe why the estimated impacts are appropriate in light of the expected benefits of the energy efficiency programs. There are many considerations to account for when analyzing both the rate and average bill impacts of energy efficiency programs and the associated benefits. Here we discuss the key considerations and concepts that Program Administrators should consider in their rate and average bill impact analyses.

First, it is important to properly quantify and present the rate and average bill impacts of the energy efficiency programs. This requires capturing the total effects on costs and sales, as well as presenting the rate and average bill impacts in a way that is meaningful and easily understood. In particular:

- Rate and average bill impact estimates should be performed on a portfolio basis, as opposed to on a program-by-program basis, because it is the entire portfolio of programs that will affect customer rates and bills.

- Rate and average bill impact estimates should account for the impacts over the long-term (e.g., for the average life of efficiency measures), in order to capture the full effect of energy efficiency savings and costs.

- Rate and average bill impact analyses should compare: (1) the estimated rates and bills with the energy efficiency programs in place to (2) the estimated rates and bills that would be in place in the absence of the energy efficiency programs.

- Rate and average bill impact estimates should be conducted for each customer class, as well as for all customers on average.

- Rate and average bill impact estimates should present not only the absolute dollar increase in distribution rates and bills but also the percentage increase in distribution rates and bills.

- Rate and average bill impact estimates should present the percentage impact on total rates and bills, as well as the percentage impact on distribution rates and bills.

- Rate and average bill impact estimates should include ratepayer costs associated with the mandatory charge of 2.5 mills per kWh, as well as any other funding from distribution customers as allowed by G.L. c. 25, § 19(a). However, rate and average bill impact estimates should not include the funds generated from the forward capacity market or the funds generated by RGGI, as these funds are not directly recovered from the Program Administrator's electricity customers.

- Rate and average bill impact estimates should account for the revenues that are collected through a revenue decoupling mechanism or through an interim lost base revenue adjustment mechanism.

Second, it is important to put the rate and average bill impacts in the proper context. While energy efficiency programs will typically increase customers' distribution rates, average bills should be lower than they would be without energy efficiency programs. In evaluating rate and average bill impacts, Program Administrator should fully investigate the tradeoff between increased rates and reduced bills. This is particularly important because, while energy efficiency programs result in rate increases to the distribution rate, they result in savings on the entire bill. Thus, the Department expects rate and average bill impact analyses to include estimates of both absolute and percentage impacts on total customer bills, for each rate class, for the period that includes the average life of the energy efficiency measure.

Third, it is important to consider all the ways in which energy efficiency can affect customer rates and average bills. There are several ways that energy efficiency will lower costs to all customers -- whether the customers participate in energy efficiency programs or not. For example, energy efficiency programs are expected to reduce the prices of New England wholesale energy and capacity markets, through DRIPE, as discussed above in Section III.D. These lower wholesale prices will reduce the commodity costs for electricity, which will result in lower bills for all electricity customers. In addition, by reducing electricity demand, energy efficiency programs can help lower the costs of complying with the Massachusetts Renewable Portfolio Standard and RGGI.

Furthermore, it is important to consider customer equity issues raised by rate and average bill impacts. One of the primary concerns regarding energy efficiency program rate and average bill impacts is that they might create an inequity between program participants and non-participants. Participating customers will experience higher distribution rates but lower bills, while non-participants will only see the higher distribution rates. Program Administrators should consider the extent to which there may be such inequity as a result of their proposed energy efficiency programs. For example, Program Administrators should consider the following questions: Are energy efficiency programs designed in a way to minimize inequities? Do all customers have an opportunity to participate in the energy efficiency programs? What portion of customers is expected to be served by the energy efficiency programs? Would reducing energy efficiency program budgets reduce the extent of customer inequity, or would increasing energy efficiency program budgets reduce the extent of customer inequity by increasing the number of program participants? Will the programs result in "spillover" effects and energy efficiency market transformations that would increase the number of customers that experience bill reductions? To what extent will DRIPE, Massachusetts Renewable Portfolio Standard and RGGI benefits of energy efficiency programs -- enjoyed by participants and non-participants alike -- help mitigate the customer equity concerns? Given that Program Administrators have been implementing energy efficiency programs for many years and are expected to dramatically increase energy efficiency program activities in future years, will there be many customers that are not affected in some manner by the programs? These are all important factors to consider when evaluating the tradeoffs between lower bills, higher rates and customer equity. To the extent that non-participants can be minimized through program design and scope, higher rate impacts might be deemed more acceptable.

To the extent possible, the factors discussed above should be quantified and incorporated into the rate and average bill impact estimates. Those factors that cannot be quantified should be considered in a qualitative fashion. In the three-year energy efficiency plans, Program Administrators should include a complete description of how the quantitative factors were incorporated into the rate and average bill impact estimates, as well as how the qualitative factors were accounted for in the overall rate and average bill impact analysis.

B. Three-Year Energy Efficiency Plan Review Process

The Green Communities Act requires a 90-day period within which the Department must review and issue its decision on each Program Administrator's energy efficiency plan.

G.L. c. 25, § 21(d). In light of this limited time for review, the Department stated the need to conduct an expeditious review while, at the same time, allowing interested stakeholders an opportunity to comment and allowing any required due process rights. D.P.U. 08-50, at 35. The Department intends that our review will accord appropriate weight to the Council's review of the statewide energy efficiency plans, as well as any comments the Council may submit. Id.

The working group, noted above, is also charged with developing a model procedural schedule designed to address the issues raised by the Department in D.P.U. 08-50, at 34-37, and filing such procedural schedule with the Department for review. Consequently, the Department will defer any findings on the energy efficiency plan review process until we have had an opportunity to review the working group's report.

C. Mid-Term Modifications to Programs

1. Department Proposal

The Department noted its expectation that Program Administrators may wish to make modifications to energy efficiency programs during an efficiency plan's three-year term in order to improve upon programs as new information, new programs or new program concepts become available. Id. at 36. The Department also stated that we expected that minor modifications would be made as a matter of course, but that significant modifications would need to take the form of a revised energy efficiency plan filed with the Department for review and approval. Id. The Department further proposed that the following criteria would be used to determine whether a program modification is significant enough to warrant a revised plan for Department review: (1) the discontinuation of a program; (2) a change in program budget of greater than ten percent; (3) an adjustment in savings goals that is greater than ten percent; or (4) a program modification that leads to a change in performance incentives of greater than ten percent. Id. at 36-37.

2. Summary of Comments

Cape Light, DOER, GasNetworks, National Grid, and WMECo agree that there should be thresholds below which Program Administrators need not seek Department authorization to modify programs (Cape Light Reply Comments at 19; DOER Initial Comments at III.C.2; GasNetworks Initial Comments at 13; National Grid Initial Comments at 9-10; WMECo Reply Comments at 21). Cape Light suggests greater flexibility than proposed by the Department and offers that the program budget threshold be raised from ten percent to 20 percent (Cape Light Reply Comments at 19). Taken another step, Cape Light supports full flexibility to move funds between programs provided sector budgets are maintained (id.). Finally, Cape Light recommends that any modification requiring Department review and approval should also be subject to Council review (id.). GasNetworks suggests that the Department adopt less restrictive standards governing energy efficiency plan modification, submitting that a bandwidth of 20 to 25 percent would provide an appropriate level of flexibility (GasNetworks Reply Comments at 16). GasNetworks offers that Program Administrators be allowed to: (1) eliminate programs, begin new programs, or add or remove measures within an existing program, provided that such changes, in the aggregate, involve 20 (or 25) percent or less than the sector budget for the applicable year; (2) reallocate funds among programs within sectors, provided that such reallocation involves 20 (or 25) percent or less than the applicable sector budget; and (3) over-perform as compared with planned annual expenditures in a sector by 20 (or 25) percent or less in a given year (id.). Similarly, National Grid, advocates for greater flexibility and proposes that the following trigger Department review: (1) a greater than 25 percent change in funds from one sector to another; (2) discontinuation of a program; or (3) introduction of a new program (National Grid Initial Comments at 9-10).

The Attorney General suggests that the Department set a dollar limit for plan modifications that if surpassed would trigger a review, notice, and hearing (Attorney General Initial Comments at 18). For those modifications that do not trigger the review threshold (i.e,, minor program changes) the Attorney General would have Program Administrators file a letter with the Department explaining each program change with supporting data (id.). Finally, Wal-Mart requests that the Department require any Program Administrator requesting a budget increase during the three-year period to obtain prior Department approval after an adjudicatory proceeding (Wal-Mart Reply Comments at 7).

3. Analysis and Findings

In establishing the manner in which Program Administrators report modifications to their three-year plans during the three-year period to the Department, we seek to strike a balance between providing Program Administrators appropriate flexibility to respond to changing circumstances and ensuring that the Program Administrators implement their energy efficiency plans in a manner consistent with their Department-approved filings. As stated above, we expect that Program Administrators will make minor modifications as a matter of course but that significant modifications will require Department review and approval.

Based on the comments, we conclude that the following changes to an energy efficiency plan are significant and will require Department approval: (1) the addition of a new program or the termination of an existing program; (2) a change in a program budget of greater than 20 percent; (3) a program modification that leads to an adjustment in savings goals that is greater than 20 percent; or (4) a program modification that leads to a change in performance incentives of greater than 20 percent. A Program Administrator that seeks to make such a modification shall submit its proposal for review by the Council and submit a request for approval as part of its annual energy efficiency report filing to the Department. Any such request must be accompanied with (1) a justification for why the modification is appropriate, and (2) a description of how the modification was reviewed and decided upon by the Council.

VI. REVIEW OF ANNUAL ENERGY EFFICIENCY REPORTS

A. Annual Energy Efficiency Report Filing Requirements

The Department, under § 4 of the existing Energy Efficiency Guidelines, employs a pre- and post-deployment cost-effectiveness evaluation of energy efficiency programs. The Green Communities Act requires the Department to periodically monitor energy efficiency programs for continued cost-effectiveness. G.L. c. 25, § 21(b)(3). To fulfill this mandate, the Department proposed to replace existing § 4 of the Energy Efficiency Guidelines with more detailed guidelines regarding the content and Department review of energy efficiency annual reports. D.P.U. 08-50, at 38.

The working group, noted above, is also charged with developing a proposed annual report template and model procedural schedule for our review. The working group should address the issues raised by the Department in D.P.U. 08-50, at 38-39, and incorporate any recommendations in its report to the Department. The Department will defer any findings on the energy efficiency report content and review process until we have had an opportunity to review the working group's report.

B. Residential Energy Conservation Services

1. Introduction

______During a technical conference held in this investigation, participants questioned whether it would be legally permissible to integrate the Residential Energy Conservation Services ("RCS") programs administered by the distribution companies pursuant to G.L. c. 164, App. §§ 2-1 through 2-10 and 220 C.M.R. §§ 7.00 through 7.10, into the energy efficiency plans required by the Green Communities Act. The Department requested comments on this issue.

2. Summary of Comments

Those who commented are in general agreement that it would be beneficial to integrate RCS program filings with the energy efficiency plan filings (Attorney General Reply Comments at 10-11; GasNetworks Reply Comments at 20; National Grid Reply Comments at 7-8; NSTAR Reply Comments at 15; WMECo Reply Comments at 23). The Attorney General, GasNetworks, National Grid, and NSTAR recognize that there exist statutory impediments to achieving full integration of the RCS programs with the energy efficiency plans (Attorney General Reply Comments at 10-11; GasNetworks Reply Comments at 20; National Grid Reply Comments at 7-8; NSTAR Reply Comments at 15). To remedy this situation, GasNetworks and NSTAR suggest the formation of a task force to pursue a legislative solution (Gas Networks Reply Comments at 20; NSTAR Reply Comments at 15). WMECo asserts that RCS program filings should be fully integrated with the Program Adminstrators' energy efficiency plan filings (WMECo Reply Comments at 23).

3. Analysis and Findings

General Laws c. 164, App. § 2-7(b), requires distribution companies to annually submit their proposed RCS operating budgets to the Department at least 60 days before they are to become effective. The Department's regulations at 220 C.M.R. § 7.04 clarify that each distribution company shall make this filing no later than November 1st of each calendar year. After notice and an opportunity to be heard, the Department must review the reasonableness of the proposed expenditures and approve or approve with modification the proposed operating budgets within 60 days. G.L. c. 164, App. § 2-7(b); 220 C.M.R. § 7.04. The Department is also required to annually review and reconcile the income and expenses incurred by the distribution companies during the preceding year in carrying out the RCS program. G.L. c. 164, App. § 2-7(f), para. 4; 220 C.M.R. § 7.09.

Each distribution company is also required to file quarterly reports with the Department on or before the 30th of April, July, October, and January, describing the activities performed pursuant to the DOER State Plan. 220 C.M.R. § 7.08. Gas distribution companies are also required to file an annual report with their January quarterly report for the previous year's operation that contains the same information as contained in the quarterly report. Id. Electric companies are similarly required to file an annual report with the Department by September 1st on their RCS costs and accomplishments from the previous calendar year. Id.

______The Department is mindful of the overlapping purposes of the RCS program and the energy efficiency plans now required under the Green Communities Act. Although the Department would like to integrate the RCS filings with the energy efficiency plan filings, we are unable to reconcile the conflicting statutory and regulatory deadlines of RCS and the energy efficiency plans, which must be submitted to the Department, once every three years, on or before October 31st, after which time the Department must issue a decision on the plans within 90 days. G.L. c. 25, § 21(d).

The Department encourages stakeholders to continue considering ways to integrate the filings within the confines of the existing statutory and regulatory structure or perhaps through legislative change as suggested by GasNetworks and NSTAR. Although the 2009 RCS and energy efficiency filings will not be combined, the Department is open to an administratively efficient solution for how this integration could occur in the future.

VII. ORDER

Accordingly, after due consideration, it is

ORDERED: That all energy efficiency Program Administrators shall comply with the directives contained in this Order.

By Order of the Department,

/s/

Paul J. Hibbard, Chairman

/s/

W. Robert Keating, Commissioner

/s/

Tim Woolf, Commissioner