

# **Rewarding Successful Efficiency Investment in Three Neighboring States: The Sequel, the Re-Make and the Next Generation (In Vermont, Massachusetts and Connecticut)**

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## **ABSTRACT**

This paper examines energy efficiency portfolio performance incentive (“PI”) mechanisms in Vermont, Massachusetts and Connecticut. While different in structure and design, all are aimed at similar policy objectives. After advancing principles for guiding the design of effective performance incentive mechanisms for administrators of efficiency investment portfolios, the paper traces the evolution of the three states’ incentive mechanisms. It then compares and contrasts them in the context of the suggested design principles, concluding with findings and recommendations on common features to include in future efficiency administrator performance incentive mechanisms.

In 2002, Vermont’s energy efficiency utility, Efficiency Vermont (“EVT”), negotiated a three-year extension to its initial performance contract with the State of Vermont Public Service Board (“VT PSB”), originally designed in 2000 to reward it for superior achievements of Vermont’s multiple policy objectives. Foremost among the goals of Vermont’s \$14 million annual energy efficiency portfolio are maximizing resource benefits, electricity savings and market transformation, all while delivering equitable distribution of benefits throughout the state across customer groups. Toward these broad ends, EVT’s 2003-2005 performance incentive mechanism defines new targets for peak savings, as well as minimum performance requirements concerning distributional equity. This paper considers both the original 2000-2002 mechanism and the 2003-2005 “sequel.”

Also in 2002, Massachusetts electric utilities and non-utility parties agreed on a new performance incentive mechanism which was incorporated into each program administrator’s 2003 energy efficiency plan. This is the “remake” of the original Vermont mechanism, as it borrowed many of the latter’s basic features. Like Vermont’s revised mechanisms, the new Massachusetts formula gives major weight to net resource benefits and peak demand savings. The new focus on total resource benefits requires administrators to incorporate non-electric benefits into economic analysis for planning and implementation, something Massachusetts utilities had not done previously.

In 2003, the Connecticut Office of Consumer Counsel (“CT OCC”) reported on performance incentives to utility administrators of the state’s \$88 million annual conservation and load management (“C&LM”) investments. Having previously opposed incentives, the CT OCC report recommends a new performance incentive mechanism, modeled on Efficiency Vermont’s current version, and emphasizes targeted savings in constrained areas. Because it builds on the Vermont “sequel,” we consider the proposed Connecticut model “the next generation.” The Connecticut Department of Utility Control’s (“CT DPUC”) review and decision on CT OCC’s recommended mechanism is expected sometime in 2004.

## Purpose and Objectives of Performance Incentives

Performance incentives are intended to motivate program administrators to implement their portfolio of conservation and load management programs in such a way as to optimize the benefits from the C&LM investments. We offer the following principles for designing effective conservation and load management performance incentive mechanisms, based on our own experience designing, negotiating, managing and/or overseeing such mechanisms in Vermont, Massachusetts, New Jersey and Maryland.<sup>1</sup>

Ideally, the potential incentive award should be large enough to motivate administrators to pursue exemplary results, yet no higher than necessary to accomplish this goal, so as to maximize the funds available for investments in the C&LM portfolio.<sup>2</sup> Too small an incentive and management will tend to ignore it. Too large an incentive shrinks the funds available for investment in the portfolio, since the amount of money available for efficiency investment is usually fixed by legislation and/or regulatory order. Even if funding levels are not pre-determined, allowing too generous a performance incentive would unduly limit the net economic yield to utility customers who ultimately fund the efficiency portfolio.

Administrators face myriad opportunities, constraints, and choices in the design and deployment of market strategies (e.g., rebates, advertising, etc.), and in the allocation of available resources as efficiency markets evolve and shift with the economy. A well-designed incentive mechanism can motivate administrators to pursue excellence in managing the C&LM portfolio to produce the maximum yield in the areas most valuable to the portfolio's owners and funders. The purpose of an effective performance incentive mechanism is to exploit all the achievable potential between the best possible results and good or even very good results from portfolio administrators (Bryk, Plunkett and Coakley 2002).

For maximum effectiveness, the performance incentive mechanism should combine incentive awards for superior performance with penalties for failure to meet minimum performance requirements. Incentives should reward results that exceed performance goals, to encourage exceptionally strong performance, up to a maximum award. Administrators should also be able to earn partial awards below performance goals so they will continue striving for success, as long as the outcome falls above specified minimum thresholds. To ensure that the administrator focuses on the entire program portfolio and delivers programs effectively, general minimum performance requirements should be established which if not met would result in the administrator forfeiting some or all of its opportunity to earn incentives for its C&LM activities.

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<sup>1</sup> Efficiency Vermont's experience has been particularly instructive. There, Vermont Energy Investment Corporation and Optimal Energy designed the basic mechanism in our proposal for the program administrator contract in 1999 (Vermont Public Service Board 1999). After being selected by the Vermont Public Service Board (VT PSB) in early 2000, we then proposed and negotiated the first EVT specific performance incentives and performance indicators, including goals and relative weights. Our success in meeting or exceeding almost all performance goals was a key factor in the VT PSB's decision in 2002 to exercise its option to extend the initial contract another three years. In 2002, VEIC and Optimal Energy developed and negotiated new performance incentives for 2003-2005, which are now part of the second EVT contract covering current operations (Vermont Public Service Board 2002).

<sup>2</sup> If the source of the incentives is not from the C&LM funds (e.g., general revenues of the utility), the impact of this effort reduces the potential charge to ratepayers through the rate setting process. In the three states discussed in this paper the C&LM funds include the incentives which the program administrators may earn.

Minimum requirements thus provide a “stick” to ensure acceptable or adequate performance below pre-set goals, working in concert with the “carrot” of incentives for superior performance.

Performance indicators should be clearly defined and clearly aligned with a jurisdiction’s multiple, often competing C&LM and energy policy objectives. The performance incentive mechanism should encourage administrators to make necessary tradeoffs between multiple C&LM policy objectives, both as they design the C&LM programs and as they decide on how to implement those programs. This multiplicity of performance objectives immediately complicates the design of the performance incentive mechanism and creates the need for multiple performance goals which must function together.

To be effective, individual performance goals should be difficult but not impossible to reach. If administrators perceive the goals as unattainable, then the incentive will have little influence on management behavior. Performance goals for each measure of performance (performance indicator) should thus be set within managerial “zones of control” by program administrators.

The performance incentive mechanism also needs to allow administrators managerial flexibility to make tradeoffs and allocate resources in pursuit of the performance targets. Administrators should be able to make the management decisions they deem necessary to improve performance, including fund-shifting within and between program budgets. Time is another source of management flexibility. Consequently, performance incentives will be most effective at maximizing electric and economic yield from the C&LM portfolio if they are predicated on multi-year budgets and performance goals. One year is rarely enough time to make lasting observable changes in market behavior, or to successfully build a critical mass of savings momentum within markets.

Beyond the core incentives for superior performance in pursuit of policy objectives, each additional performance indicator should promote a desired outcome or action that otherwise would suffer in the competition for resources. Additional performance indicators are warranted if certain specific actions or outcomes are deemed essential to portfolio or individual program success, either within the performance period or especially in pursuit of longer term policy objectives (e.g., market transformation).

Performance incentive mechanisms are built on indicators of successful performance, with incentive awards tied to each indicator or set of indicators. There are three basic types of performance indicator that can be included in an effective performance incentive mechanism for efficiency portfolio administrators:

- **Program Results**, which include outcomes directly observable by administrators via information collected during the course of program operation and management (such as kWh);
- **Market Effects**, which identify changes occurring in the marketplace due to the programs which are not directly observable by program administrators (for example, increase in market share of efficient products); and
- **Activity Milestones**, which include specific activities which are identified as important in the development or implementation of particular elements of the program portfolio (for example, successfully complete a task by a time certain, such as conduct a baseline study and submit a report in six months).

Program results and market effects are quantifiable as continuous variables, i.e., they can be counted. Activity milestones are discrete in the sense that the actions in question either do or do not happen on time. Table 1 summarizes the characteristics we associate with effective performance indicators.

**Table 1. Performance Indicator Outcomes**

<b>Performance Indicator Outcomes</b>
* Observable
* Measurable
* Unambiguous
* Effective proxies for desired policy objectives
* Verifiable
* Comparable with baseline information available either before commencement of the performance period, or soon thereafter through market research

The need for a process for monitoring and independent verification of claimed savings by administrators cannot be overstated in the implementation of an effective performance incentive mechanism. The verification process should involve independent critical review and ultimate approval and/or modification. Verification should be built into any performance incentive mechanism to prevent the obvious problem of exaggerated and undocumented savings claims by portfolio administrators. The process should allow for independent access by the verifying authority to performance data on efficiency costs and savings tracked by portfolio administrators.

By the same token, baseline information must be available to administrators to establish a basis for meaningful savings claims. Clear specification and understanding of the underlying basis for savings claims must be provided to administrators to enable them to manage the portfolio without undue risk and uncertainty. A lack of clarity and the undue risk exposure that would result could undermine and ultimately defeat the purpose of the performance incentive mechanism. Market research and assessment is necessary over time to reveal changes in market conditions, which in turn must be incorporated into the methodology for calculating savings. Changing market conditions must also eventually be incorporated into revised portfolio performance goals. This need to modify performance goals over time places a natural limit on the term length for performance incentives. Five years is probably the longest that electricity savings goals should apply to any performance incentive package, in order to allow for market changes, including those induced by successful administrator performance, to be taken into account in a way that is fair both to portfolio administrators and funders, i.e., ratepayers.

Lastly, performance incentives should not create perverse incentives (i.e., promote gaming, or pursuit of outcomes at odds with policy objectives). In particular, the performance incentive mechanism should be designed to prevent administrators from managing the portfolio in ways that would limit savings. Utility administrators' built-in disincentive to reduce electricity sales while implementing energy saving programs presents the classic case of dueling public vs. private interests.

## Overview of Performance Incentive Mechanisms

### Vermont

**The original: Efficiency Vermont's first contract (2000-2002).** Before 2000, energy efficiency was delivered to Vermont's ratepayers by most of the 22 utilities which served customers in the state. In 1999, the Vermont Public Service Board adopted a settlement among the state's regulated utilities, the Vermont Department of Public Service (Vermont's consumer advocate) and business, consumer and environmental groups that set out a blueprint for a statewide non-utility energy-efficiency entity, to be known as Efficiency Vermont. The VT PSB's order relieved Vermont's electric distribution utilities of their energy efficiency obligations, established the energy efficiency charge to fund the new entity, defined a set of initial "core" statewide programs and set initial five-year budgets. The Vermont legislature ratified the VT PSB's actions and set an annual funding cap of \$17.5 million, without sunseting the authorization. The VT PSB issued an RFP in 1999 for a three year performance-based contract, and in January 2000 awarded the contract to the Vermont Energy Investment Corporation (Bryk, Plunkett and Coakley 2002).

Efficiency Vermont's first (2000-2002) performance incentive contract contained thirty-six measures of performance with specific targets in 2000, 2001 and 2002. The definitions of performance indicators, their targets and their individual award values were established through negotiations involving the VT PSB, the Contract Administrator, the Vermont Department of Public Service and the Efficiency Vermont team (Hamilton, Plunkett and Wickenden 2002).

The first Efficiency Vermont contract included three types of performance indicators: (1) program results, (2) activity milestones and (3) market effects in three sectors: cross-sector, residential and business. Program results included separate indicators for electric energy savings (kWh) and total resource benefits (TRB), with three year targets. Total resource benefits were defined in the contract to include the estimated economic value of electricity, gas, propane, oil and water savings associated with the energy efficiency activities, but not environmental benefits.

Activity milestones involved the completion of tasks considered critical to superior Efficiency Vermont performance, either for individual programs or for the enterprise as a whole. The intent of these milestones was to create challenging deadlines early in the contract period. Consequently, most of the activity milestones applied to the first year (2000) of the contract. The two "market effects" indicators involved influencing market share of various Energy Star<sup>®</sup> appliances by year-end 2002.

Most of the potential incentive award (55%) was for EVT's performance regarding the electric energy savings and the economic value of all resource savings. The incentive award for both program results and most market effects were scalable within minimum and maximum levels. With a few exceptions, results below 75 percent of the established goal were not rewarded. At 75 percent of goal EVT earned 50% of the target award. For superior performance, up to 110% of the target performance level, EVT could earn up to 120% of the target award. Since the total performance award was capped, EVT could only take advantage of scalability above target outcomes if it failed to reach targets for at least one other performance indicator. In addition, EVT had to meet a minimum number of the activity milestones for 2000 and for 2001 to qualify for an award for superior performance (Hamilton, Plunkett and Wickenden 2002).

**The remake: Efficiency Vermont second contract (2003-2005).** In the development of the second (2003-2005) VT PSB contract, Efficiency Vermont sought to reduce the number of performance indicators, with more attention to those that are cost effective to pursue.

Efficiency Vermont's second (2003-2005) performance incentive contract, again established through negotiation among the parties, only contained seven measures of performance, primarily for cumulative targets over the three year period, and a small percentage, 10%, based on 2005 results. The second EVT contract had four sector types, with geographic added to the three included in the first contract: cross-sector, residential and business.

In this second contract, even more of the incentive award, 85%, was directed toward EVT's performance regarding electric energy and demand savings and the economic value of all resource savings. Program results awards and market effects awards were scalable up or down to maximum and minimum values, similar to those in the first contract.

## **Massachusetts**

**The first prequel: performance incentives before restructuring.** In Massachusetts the electric utilities have been the program administrators for the energy efficiency programs since the early 1990's. Initially established as a result of litigation, the energy collaboratives between the utilities and stakeholders (commonly referred to in Massachusetts as "Non-Utility Parties") consisted of interaction between these two groups during the course of each year on program planning and design, implementation and evaluation. In this period before utility restructuring, annual settlement negotiations among the parties on the next year's efficiency plan included the size of the budget, as well as cost recovery mechanism for lost base revenues, which typically were significant as they included the recovery of generation plant fixed costs. By this process the companies were made economically whole.

The Non-Utility Parties, however, were also interested in ensuring that the efficiency monies would be spent well in delivering efficiency services to customers – they wanted to go beyond the state of economic indifference which full recovery of costs related to energy efficiency activities established. Financial incentive mechanisms were agreed to among the parties which were designed to reward the utilities for efficient and effective delivery of the energy efficiency programs and for exemplary performance in that effort. While the mechanisms differed among the utilities in the state, they all focused on providing the companies with the opportunity to earn a return on their expenditures on energy efficiency programs, related solely to estimated kilowatt-hours saved.

**The second prequel: initial performance incentives under restructuring (1998-2002).** With passage of the electric utility restructuring legislation in Massachusetts in 1997, the electric utilities were required to collect monies from ratepayers for the specific purpose of funding energy efficiency programs and were the presumptive administrators of the funds. Budget levels for the energy efficiency programs were no longer the subject of debate and negotiations – they were defined by the mil rate charged to ratepayers and revenues resulting from electricity sales. Financial incentive mechanisms to incent the program administrators to continue to deliver quality efficiency programs were continued, but in a modified form. While differences among the companies did exist in the particular construct of the performance incentive mechanisms, in general the structure was the following.

Electricity savings (kWh) remained the primary goal for the administrators, constituting around 80 percent of the monies the companies could potentially earn in incentives. A range of 75 percent to 125 percent was established around the “Design” or target level of incentives, within which the companies could earn incentives based on kWh savings – if savings were less than 75 percent of planned savings, the “Threshold” level, the company would earn no kWh-based incentives. The incentives were capped at 125% of planned savings, representing the “Exemplary” level. The savings component of the incentives was established at the overall program portfolio level. While there was some initial concern that enabling savings from all program sectors to support the incentive targets might lead to some gaming among the programs, it was also understood that each program had specific budgets and targets which had been agreed upon by the parties, and that the on-going collaborative between the Non-Utility Parties and the program administrators would allow regular reporting and review at the program level.

Performance incentives were also established for a set of specific tasks related to the program efforts. This was based on recognition that certain program activities, including development of program plans, specific results-based goals, evaluation plans or market research, and other such events, were of sufficient importance to the overall long-term strategy of program development and delivery that they merited separation from the broader energy savings target. These were also typically activities which all the electric utilities in the state were implementing together, so the goals related to these incented activities generally were statewide or included some element of joint responsibility for reaching the goals. Approximately twenty percent of the incentive monies were dedicated to these “Performance Metrics.” Within that overall amount specific dollar Design level targets were established for each metric.

**The remake: current performance incentives under restructuring (2003-2007).** The restructuring legislation had established the energy efficiency charge for a five-year period. During this period the parties had begun to examine the efficiency programs at the various companies and consider how to align the programs to reduce confusion in the marketplace about program content, in order to improve the efficiency and effectiveness of the program delivery. Legislation was passed in 2002 authorizing the continuation of the charge for an additional five years. This gave the parties the opportunity to continue to establish common approaches to meet overall efficiency goals. With the renewal of the funding of the efficiency programs and the increasing recognition that the program administrators were supporting overall state energy goals in implementing the programs, the parties agreed to a common performance incentive structure.

This performance incentive structure was also designed to incorporate as fully as possible the overall state energy goals, which broadly included efficiency in all resource use. The performance incentive thus was modified from its earlier structure to include 1) A savings goals including kWh, kW, and non-electric benefits; 2) a Value goal, consisting of the difference between program costs and program benefits; and 3) Performance Metrics, which continued to address particular tasks or field activities and outcomes. The targets for the Savings and Value Mechanisms were set at the sector level (residential, low-income, commercial and industrial), to accommodate increasing interest in assuring equity in the implementation of the program portfolio. The goals for each incentive mechanism were bounded by a lower Threshold level, at 75% of Design, and an upper Exemplary level, set at 110% of Design (Massachusetts Electric Company 2004).

## Connecticut

**Performance incentives before electric utility restructuring.** Conservation programs have been offered and delivered to all customer sectors by Connecticut's investor-owned utilities since a litigated rate case in the late 1980s. The programs were developed within an energy collaborative of policy stakeholders and the two utilities that was established following the commission's order in the rate case. As the conservation programs were developed it became apparent that the utilities were facing the same internal mixed messages and conflicts as were the Massachusetts utilities – profits from increased electricity sales and commitments to encourage lower usage through the conservation programs without any associated financial reward. Agreements were reached during the 1990s which provided the utilities with both recovery of lost base revenues and with financial incentives related to the level of energy savings (kWh) the attained through the conservation programs, with modest adders to the companies' overall rate of return.

**The evolving performance incentives under electric utility restructuring.** In 1998 an act enabling electric utility restructuring was adopted by the state legislature. A 3 mil/kWh charge was mandated in the legislation to support C&LM programs, and an advisory board of stakeholders was established to engage in discussions with the utilities to develop the C&LM plans. While agreement was reached on the program designs, the performance incentive structure was litigated early in the restructured environment. The Department of Public Utility Control determined that the appropriate performance incentive mechanism would initially be one focusing exclusively on energy savings, with the incentive ranging between two and eight percent of program expenditures for savings above 70 percent of planned savings to over 130 percent of planned savings. The incentives would be earned program by program. Over the ensuing several years the incentive structure has evolved, as additional concepts were explored and experience in other New England states were observed. The most recently approved incentive structure in Connecticut (for 2003) maintains the same financial opportunities as previously. The performance indicators include electric system benefits at the sector level, which incorporates kWh and kW savings; geographically targeted kW savings for specified programs, and individual program indicators of specific actions, to focus attention on those tasks or outcomes.

**The next generation: Office of Consumer Counsel proposal.** In a 2003 decision, CT DPUC concluded that, while performance was good, the state's two C&LM program administrators could increase the yield of electricity savings (Connecticut Department of Public Utility Control January 2003). The CT DPUC was especially concerned that proposed performance goals for 2003 were lower than results actually achieved in 2002. In 2003, the CT Office of Consumer Counsel, in response to the CT DPUC's decision, engaged consultants<sup>3</sup> to examine the past and planned performance of the current program administrators ("PAs") in achieving C&LM policy objectives under the current performance incentive mechanism and to recommend changes as appropriate. The recommended performance incentive mechanism features included:

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<sup>3</sup> Optimal Energy, Inc., Vermont Energy Investment Corporation and PAH Associates.



- A maximum total award of 4.5 percent of program budgets for administrative performance incentive (before tax), designed to provide sufficient motivation while preserving maximum funding for productive C&LM investment;
- Incentives for three types of performance: program results directly observable by administrators, effects on the broader efficiency markets, discernable from independent market assessment, and activity milestones tied to successful completion of multiple critical tasks by specific deadlines;
- Institution of aggregate performance goals for electricity and economic savings spanning all programs and sectors, increasing administrator flexibility in pursuing Connecticut's primary policy objectives;
- Scalability of performance incentives, allowing administrators to earn partial awards for performance below goals but above minimum thresholds, or bonus awards for performance above goals up to pre-defined exemplary levels of performance;
- Minimum performance requirements designed to ensure distributional equity across the sectors, which if administrators fail to achieve would void their eligibility for performance incentives to which they would otherwise be entitled;
- Multi-year performance targets for 2004-2005, providing administrators with greater flexibility in the pursuit of performance goals;
- Annual verification of progress toward multi-year goals, in order to ensure validity of administrator claims, as well as determine partial eligibility for award (i.e., "bank" results along the way); and
- Establishment of the performance incentive as a joint award to be shared between the two administrators in proportion to their respective budgets, with the purpose of encouraging Connecticut Light and Power and United Illuminating to perform as if they were a single entity, availing themselves of all potential operational efficiencies.

The recommended mechanism for 2004 directs almost two-thirds of all incentives for superior performance toward Connecticut's primary C&LM policy objectives, maximizing electric (kWh and geographically targeted kW) and economic savings. The proposal includes a recommendation to the CT DPUC to adopt a total resource benefit cost test for assessing the merits of the C&LM programs, rather than maintaining the current Electric System Cost Test. The consequence of this proposal is that the economic savings in the proposed performance incentive mechanism would be based on overall net resource benefits, incorporating the value of non-electric benefits in addition to direct electric savings (kWh and kW). These goals are stated for the entire portfolio, not from individual sectors, further increasing management flexibility in pursuit of multiple performance goals (Plunkett, Neme and Mosenthal 2003).

The recommended mechanism also contains more aggressive performance goals per dollar of program expenditure. It also includes three minimum performance requirements, which if unmet reduce the amount of the available incentive award. The first two require administrators to produce at least 10% more electric benefits than total program expenditures for the residential and commercial and industrial sectors. This assures that each customer class receives its overall fair share of direct benefits from its respective contributions to funding the portfolio. The third

minimum requirement obligates administrators to commit at least 10% of the overall portfolio funds to serving low-income residential consumers.<sup>4</sup>

## Comparison of Vermont, Massachusetts and Proposed Connecticut Performance Incentive Mechanisms

Key features of the performance incentive mechanisms in the three states are summarized in Table 2 and Table 3. The comparisons focus on the mechanisms as they have evolved in rough chronological order of inter-state influence.<sup>5</sup> We start with the first Efficiency Vermont contract, which was predated by the earlier Massachusetts and Connecticut systems that were in place in the late 1990s. The comparisons then proceed to the current Massachusetts mechanism, which was heavily influenced by the 2000-2002 EVT mechanism. Experience and challenges presented by the new Massachusetts mechanism in turn informed the development of the second Vermont contract mechanism, which is presented next in the comparison. The comparison concludes with the current Connecticut proposal, which is modeled closely on but further evolved from the 2003-2005 Vermont contract.

Table 2 shows the weight that each type of performance indicator carries in terms of the overall performance incentive award at each stage and place.

**Table 2. Performance Indicators – Overall Incentive Weight (Percent)**

Performance Indicator Type	OVERALL INCENTIVE WEIGHT - Percent					
	EVT 1 2000-2002	MASSACHUSETTS (annually for 2003 - 2007)			EVT 2 2003-2005	CT Proposal 2004-2005
<b>1. Program Results</b>		Residential	Low-Income	Commercial / Industrial		
A. Annual Electricity Savings	30%	40%	30%	40%	45%	20%
B. Total or Net Resource Benefits	25%	30%	10%	30%	35%	25%
C. Summer Peak Demand	N/A	N/A			5%	20%
<b>Sub-Total Program Results</b>	<b>55%</b>	<b>70%</b>	<b>40%</b>	<b>70%</b>	<b>85%</b>	<b>65%</b>
<b>2. Market Effects</b>	<b>3%</b>	<b>30% total</b>	<b>60% total</b>	<b>30% total</b>	<b>15%</b>	<b>7.5%</b>
<b>3. Activity Milestones</b>	<b>42%</b>	<b>for both</b>	<b>for both</b>	<b>for both</b>	<b>N/A</b>	<b>27.5%</b>
<b>Total</b>	<b>100%</b>	<b>100%</b>			<b>100%</b>	<b>100%</b>

Notes:

1. C. in Southwest Connecticut only

3. varies annual in MA

Massachusetts mechanism is at the sector level; Vermont and Connecticut are at the portfolio level

Massachusetts uses the term "Metrics" to mean either Market Effects or Activity Milestones

In all cases, the majority of incentives are earmarked for Program Results, to a lesser degree for Activity Milestones with very little for Market Effects. Electricity savings (energy and

<sup>4</sup> As of this writing the CT DPUC has not issued its Decision in Docket No. 03-11-01 PH02, in which these recommendations were proposed. A decision is expected prior to the ACEEE Summer Study presentation, at which an update will be provided.

<sup>5</sup> Optimal Energy was involved to varying degrees in the formulation, proposal, and/or negotiation of each performance incentive mechanism in the two Vermont contracts, the revised Massachusetts mechanism, and the proposed Connecticut system.

demand) consistently account for 40-50% across all states' mechanisms. The importance of peak demand savings has emerged in the most recent Vermont and the current Connecticut proposal. Defining geographically targeted peak demand savings as a performance indicator and applying it to all programs incented by demand savings goals is a further advance in Connecticut.

Economic value accounts for a sizable minority of the total incentive weight in all mechanisms compared. This is represented by either total (Vermont) or net resource benefits (Massachusetts and Connecticut). Resource benefits are calculated by multiplying physical quantities of resource savings (electricity, fossil fuels, and water) times pre-set values of avoided resource costs. While savings and economic value overlap to a significant extent, the two indicators present important differences. Providing performance incentives for acquiring electricity savings keeps the focus of the program activity on the core resource that the programs address. Non-electric resource benefits are frequently associated with the application or installation of an electricity saving measure or practice. These program benefits provide value to the customer, and collectively, these non-electric savings provide value to the state's economy. Administrators face countless opportunities to allocate investment funds between competing opportunities that offer electricity and other resource savings. For example, administrators can substitute longer-lived compact-fluorescent ("CFL") fixtures for CFL lamps that may save the same amount of electricity but produce longer-lasting, and therefore greater economic returns. The performance incentive mechanism should encourage administrators to make tradeoffs that are in the best overall economic interests of the ultimate funders – the state's ratepayers.

Including non-electricity benefits is a key part of maximizing the economic value provided by efficiency portfolio performance. Administrators can and should use the fossil-fuel and other resource savings that often accompany electricity savings as selling points to persuade customers to both participate and contribute directly toward efficiency investments. Using economic benefits to leverage customer investment in this way enables administrators to maximize the effectiveness of limited portfolio funding.

Market effects indicators carry a relatively small but still significant weight in the determination of ultimate incentive awards available to administrators. They are a direct, observable measure of market transformation. Their overall weight has grown from 3% in the original Vermont contract to 15% in that state's contract extension, with 7.5% in the Connecticut proposal.

Activity milestones represent a declining share of total award over time. They provide powerful incentives in the early stages of development or redevelopment of efficiency portfolios, as evidenced by the first Vermont contract, the major overhaul in Massachusetts, and the in "next generation" of performance indicators and incentives proposed for Connecticut. On the other hand, they are virtually nonexistent in the second round of the Vermont contract, since the VT PSB was interested in rewarding Efficiency Vermont only for results.

A major evolution reflected in the latest Vermont and current Connecticut proposal is the presence of minimum performance requirements, which operate above and beyond the minimum thresholds contained in the individual performance indicators and incentives. These minimum requirements ensure that administrators meet critical policy objectives, separate and apart from, and often in conflict with, the policy objectives reflected by performance goals. These minimum requirements in both cases involve the distributional equity of the portfolio. For example, both Vermont and Connecticut require that the portfolio provide some minimum economic value of electricity savings to electric ratepayers, as a subset of the total economic value from all resource

savings. Also, both would require administrators to provide minimum acceptable benefits to low-income and small commercial customers in order to qualify for some or all of the total incentive award.

**Table 3. Comparison of Performance Incentive Mechanisms – Key Elements**

Key Element	EVT 1 2000-2002	MASSACHUSETTS		EVT 2 2003-2005	CT Proposal 2004-2005
		2003	2004		
1. Electricity Yield (kWh/\$) (annual kWh savings per \$ spent)	2.9	3.0	2.9	2.9	4.5
2. Depth of Yield (annual MWh savings per 2001 retail sector MWh sales)	0.57%	0.63%	0.72%	0.76%	0.80%
3. Contract Length (years)	3	annually over five year		3	2
4. Number of Performance Indicators	36	31	18	7	30
5. Total Potential Amount of Award at Planning Level (Million \$ Before Tax)	\$0.795	\$9.1	\$8.8	\$1.28	\$4.5
6. Total Award Amount as a Percentage of Total Program Costs	2.9%	10.0%	8.1%	3.0%	4.5%
b. as % of Present Worth of Lifetime Net Benefits	2.2%			1.6%	1.3%

Notes:

EVT 1 started March 2000

2005, 2006 and 2007 for Massachusetts to be determined

2001 retail sector sales as reported by US EIA

Table 3 compares overall performance goals and the total award available. Planned portfolio performance is gauged here by two broad indicators: yield, measured in terms of kWh per dollar of spending, and depth of savings, measured as projected electricity savings as a percentage of base-year electricity sales. The Connecticut Proposal reflects the greatest Electricity Yield, 4.5 kWh per dollar of program spending with the two Vermont mechanisms and Massachusetts in 2003 and 2004 coming in at or near 3.0 kWh/\$. Depth of Yield, reflecting annual MWh savings per 2001 retail sector MWh sales increases over time starting from a low of 0.57% in the first Vermont proposal to a high of 0.80% in the Connecticut proposal. Also shown in Table 3 is the length of the performance period. Clearly Vermont provides the greatest managerial flexibility, since the period extends beyond two years. Connecticut's proposal would apply to two years. Massachusetts administrators are still hampered by annual performance goals.

The number of performance indicators dropped dramatically over the two Vermont contract periods (from 36 to 7). This reflects the elimination of the many activity milestones deemed appropriate for the initial Vermont startup period. The prevalence of activity milestones in Massachusetts and Connecticut reflects the early evolution of recommended changes in those systems.

Finally, note that Vermont and Connecticut's performance incentive structures involve the smallest share of potential award out of total portfolio funding. Clearly the lower incentive rate has not impeded the effectiveness of the independent administrator in Vermont. It remains to be seen whether the higher rate allowed Massachusetts utility administrators, or the lower rate recommended for Connecticut's utility administrators, will materially affect the end result. While offering a greater award may be necessary to overcome utilities' natural inclination to minimize electricity savings in order to maximize electricity sales, it may be preferable in the long run to short-circuit this problem by requiring utilities to bid against independent service providers for the privilege of administering efficiency portfolios.

## Conclusion and Recommendations

Regardless of the type of C&LM program administrator, performance incentives for program excellence are essential tools to properly motivate staff to pursue goals aggressively. Well-designed performance incentives are tied to clear and achievable long and short-term goals and allow administrators flexibility in how they achieve them. Incentives can also help put program goals on a more equal footing with other corporate objectives.

Among the hallmarks of an effective incentive mechanism are performance indicators that are observable, measurable, verifiable, clearly aligned with policy objectives and that do not create perverse incentives for administrators to act in ways contrary to policy objectives.

The evolution of the performance incentive mechanisms presented here has progressed chronologically from: (1) first Efficiency Vermont, (2) Massachusetts, (3) second EVT, to the (4) CT OCC proposal, which gives the program administrators the greatest flexibility in seeking to attain the incentives, even while supporting the breadth of the state's C&LM and energy policy. The proposed Connecticut mechanism should be replicable in any jurisdiction since the basic design could be employed elsewhere. The Connecticut proposal includes all the essential elements of a successful performance incentive mechanism: (1) electric portfolio goals that apply across at least the sector level; and (2) key economic value indicators, including net resource benefits to maximize yield and non-energy benefits to realize the greatest economic return from a portfolio. A key feature incorporated is flexibility – where ratios can be modified, by metric, year-by-year and place-by-place. Minimum performance requirements and activity milestones (which aren't actual outcomes) should be confined to the earliest period of or to big changes within a portfolio). The strongest incentives should be applied to combining results together vs. putting emphasis on one action at a time.

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