ENERGY EFFICIENCY IN NEW ENGLAND:

RESOURCE OPPORTUNITIES

Background and Framing Paper
The Future of Energy Efficiency: A Strategic Planning Retreat
April 27, 2007

Purpose

This paper briefly reviews the history of energy efficiency activities in New England, summarizes the status of current efforts, describes the potential for additional cost-effective investments, and identifies key challenges to the development of a broader, more coordinated regional approach to acquiring efficiency resources. It is intended to provide a context and framework for a multi-stakeholder discussion on the future of programmatic energy efficiency in New England.

That discussion will take place on April 27, 2007. *The Future of Energy Efficiency: A Strategic Planning Retreat* is a one-day meeting convened by the US Environmental Protection Agency-New England, to launch a new effort to improve power sector energy efficiency in New England. The primary objectives of the meeting are:

1. To provide a better understanding of the full range of new energy efficiency related initiatives both underway and under development in New England;
2. To discuss whether these efforts are sufficient to meet regional needs or whether additional policies or programs are needed;
3. To discuss the potential benefits of improving coordination and communication; and
4. To discuss next steps and specific strategies for achieving better coordination and overall effectiveness in advancing energy efficiency in New England.

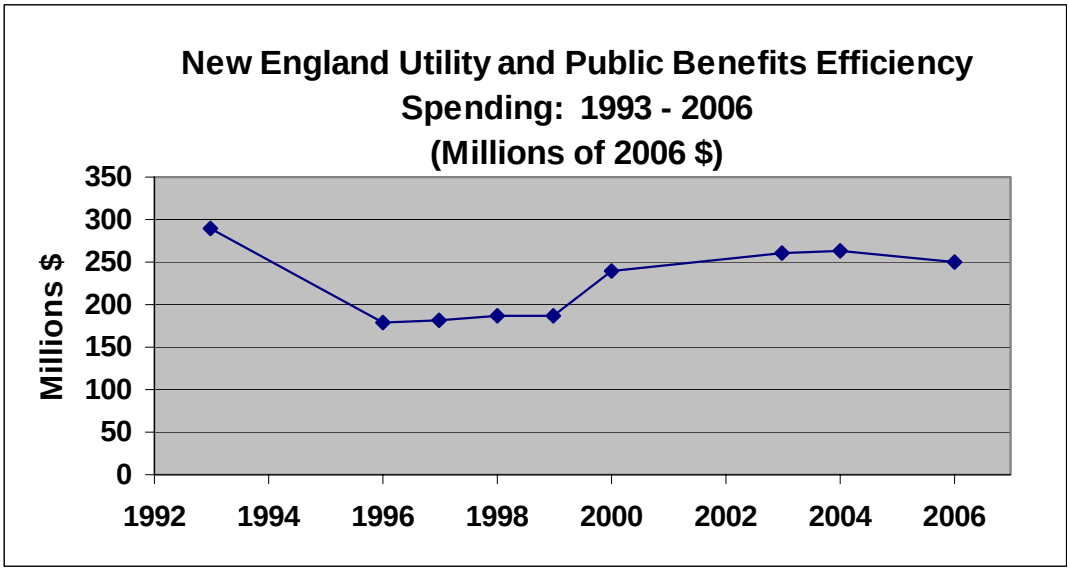
This paper was developed by the Regulatory Assistance Project under contract with the US Environmental Protection Agency. Its primary authors were Richard Sedano and Cathie Murray. It was reviewed by Lucy Edmondson, Sue Gander, William White and Norman Willard of the EPA, Jonathan Raab of Raab Associates, Christopher James of the Connecticut Department of Environmental Protection, and Frederick Weston of RAP. Research was provided by Liz Baldwin of RAP.

Chapter 1. Introduction and Context

Energy efficiency has the unique ability to help meet a number of New England's significant energy-related challenges: improved reliability, increased demand, lower cost, and environmental protection. Energy efficiency improves reliability by reducing strains on limited generation, transmission, and distribution resources. It helps meet increased demand and reduces costs for businesses, consumers, and governments—at a cost per kWh that is below that of traditional supply options and is not correlated with the cost of fossil fuels and construction materials. Energy efficiency is also a low-cost way to reduce greenhouse gas emissions, and a cost-effective method for improving air quality on summer days when peak electricity demand can increase the use of high-emissions and high-cost generation.

Despite these multiple benefits and a long and successful history of delivering energy efficiency programs, New England is spending less today on energy efficiency than it did in 1993, prior to retail competition (see Figure 1, below), and no state is securing all cost-effective measures. This untapped potential "gap" has been identified in efficiency studies done in recent years for Connecticut, Maine, Massachusetts, and Vermont. In addition, the May 2005 study by Northeast Energy Efficiency Partnerships (NEEP) forecast that economically achievable energy efficiency could bring New England's energy demand down to 1993 levels by 2013, but that continuing existing (at the time of the study) energy programs would capture only 20 percent of this potential (see Figure 2, in Chapter 2 below). A number of market and policy barriers are associated with this gap, including access to information and capital, and split incentives. Some have also contended that, in some states, the move to retail competition may have disrupted spending on energy efficiency programs and precipitated changes in their administration. Likewise, goes the argument, restructuring may have had an impact on the nature of the programs' connection to resource planning, adequacy, and procurement efforts.

Figure 1. New England Utility and Public Benefits Efficiency Spending: 1993 - 2006 (Millions of 2006 $)[1]



There are encouraging developments. The role of energy efficiency, and funding for it, is likely to expand as a consequence of new policy initiatives in the region, among them ISO-New England's Forward Capacity Market, the Regional Greenhouse Gas Initiative, the adoption of energy efficiency portfolio standards, requirements for least-cost procurement, and potential increases in state system benefit charges. Other policies now under consideration, such as dynamic pricing and better alignment of utility financial incentives with energy efficiency, could also boost energy efficiency in the region. In addition, some are proposing that the definitions of cost-effectiveness, used to determine levels of investment, may be ripe for reassessment.

Finally, there is broad agreement that, despite past success, there is great potential to further improve the delivery of energy efficiency programs and services. For instance, whole-building and performance-based approaches are gaining support among end users, who are also demanding non-electric energy efficiency programs for gas, oil, and other

[1] Spending figures for 1993 and 1996-2000 are from Dan York and Marty Kushler. 2002. *State Scorecard on Utility & Public Benefits Energy Efficiency Programs: An Update*. ACEEE U023. Washington, DC.: American Council for an Energy Efficiency Economy.

Spending figures for 2003 are from Dan York and Marty Kushler. 2005. *ACEEE's 3rd National Scorecard on Utility and Public Benefits Energy Efficiency Programs: An National Review and Update of State-level Activity.* ACEEE U054. Washington, D.C.: American Council for an Energy Efficiency Economy.

Spending figures for 2004 are from Dan York and Martin Kushler. 2006. *A Nationwide Assessment of Utility Sector Energy Efficiency Spending, Savings, and Integration with Utility System Resource Acquisition.* Presentation at the American Council for an Energy Efficiency Economy 2006 Summer Study on Energy Efficiency in Buildings.

Spending figures from 2006 are from the many state-level sources cited in Chapter 3, Table. All ACEEE spending figures were in nominal dollars. They have been converted to 2006 $ using the CPI calculator found at the Bureau of Labor Statistics website at http://data.bls.gov.

fuels. New metering technologies show promise both in measuring program effectiveness and, by enabling improved pricing structures, changing the behavior of end-users. New technologies, construction practices, and building codes are providing a continuing stream of new energy efficiency opportunities, supplementing a significant and long-standing retrofit potential. A goal of meeting all forecasted load growth with energy efficiency is a reasonable one to consider, with even greater potential available.[2]

The complexity of the regional environment creates the risk of missed opportunities and duplication of effort. Increasing regional demand for energy creates additional pressure to build new generation, transmission, and distribution facilities and new fuel delivery and transport capacity—all while meeting new and more demanding environmental challenges. Improved energy efficiency can quickly and cost-effectively contribute to the resolution of these very significant concerns and uncertainties in New England's energy markets.

Meeting regional goals for reliability, energy costs, and environmental protection requires a coherent regional strategy for energy efficiency. Fortunately, New England has a rich history, going back to the 1970s, of cooperation in energy policy and operations through the New England Governors' Conference, NECPUC, and NEPOOL. More recently, the transition to ISO-New England and the creation of the Regional Greenhouse Gas Initiative demonstrate the region's continuing capability for cooperation. In addition, there are a number of recent initiatives that New England can draw upon for best practices and policy ideas, including the *National Action Plan for Energy Efficiency*[3] (an EPA-DOE facilitated effort initiated in Fall 2005, with a leadership group of leading gas and electric utilities, state agencies, energy consumers, energy service providers, and environmental/energy efficiency organizations), which identifies key strategies to create a sustainable national commitment to energy efficiency. *The Future of Energy Efficiency in New England: A Strategic Planning Retreat* provides an opportunity for New England to take its own steps towards realizing increased energy efficiency programs across the region.

[2] On April 18, 2007, Governor Spitzer announced a goal of reducing New York's electricity consumption by 15% below forecast levels in 2015. The objective, called "15 by 15," will require that electricity consumption in 2015 to be approximately 7% lower than current (2006) levels.

[3] See http://epa.gov/cleanenergy/actionplan/eeactionplan.htm.

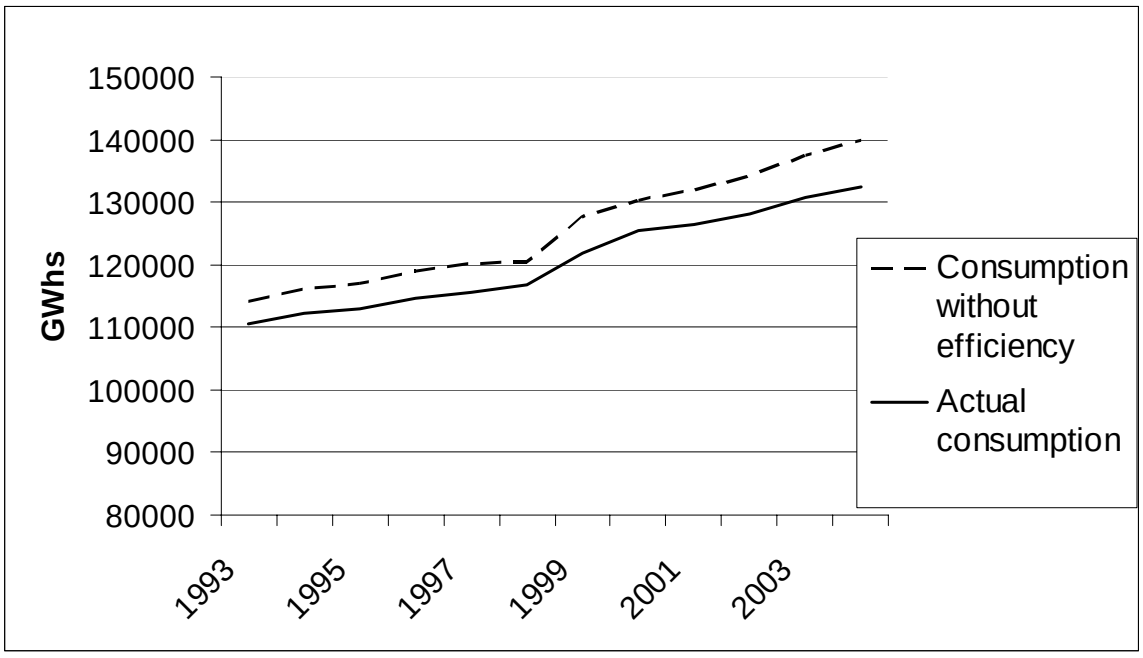
Chapter 2. Efficiency Accomplishments and Further Potential in New England

2.1. Accomplishments

Ratepayer-funded electric efficiency programs have contributed to a reduced need for energy supply over the past two decades. Annual cumulative savings (energy savings in a given year resulting from previous years' program measures as well as the reported year's measures) give us a sense of scale. Estimated annual cumulative savings in New England from 1993 to 2004 reported by ACEEE ranged from a low of 3,575 GWh in 1998 to a high of 7,430 GWh. These figures represent 3-5% of energy consumption during those years.

The following figure demonstrates the growth in electrical energy consumption in New England since 1990, along with the additional energy supply that would have been required in the absence of efficiency programs.

Figure 2. New England Electrical Energy Consumption, 1990 - 2006[4]



[4] Consumption figures are from ISO-NE and are not weather-normalized. Savings figures for 1993 and 1996-2000 are from York and Kushler, 2002, *supra* footnote 2. Savings figures for 2003 are from York and Kushler. 2005, *supra* footnote 2. Savings figures for 2004 are from York and Kushler, 2006, *supra* footnote 2. All savings figures represent the annual savings achieved from implementation of all program measures from both the reporting year and prior program years. There are many caveats relating to these figures that are discussed in some detail in each ACEEE report. Savings figures for 1994-1995 and 2001-2002 are extrapolated based on ACEEE numbers.

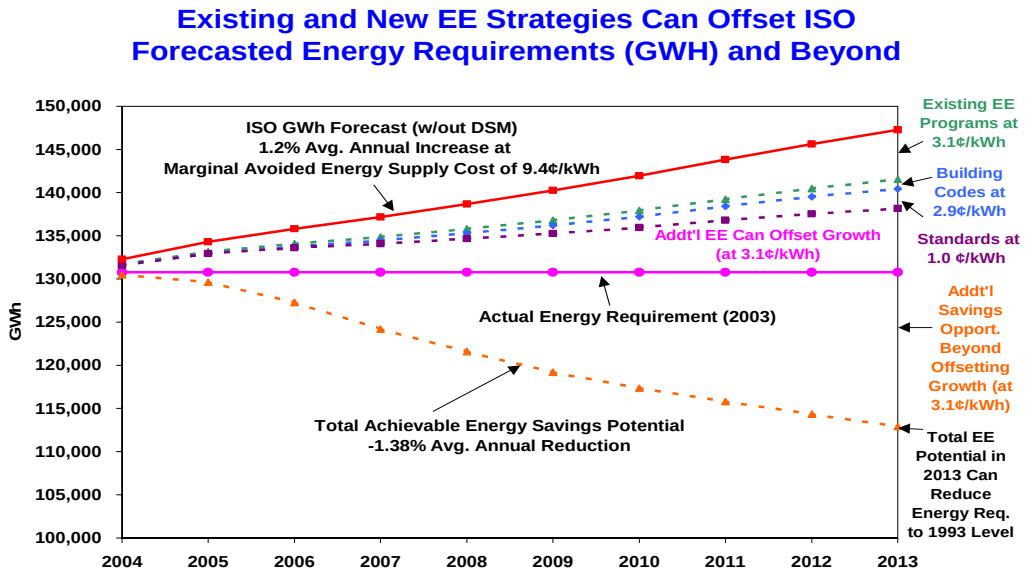
2.2. Potential

A thorough analysis of economically achievable energy efficiency in New England was conducted by Optimal Energy for the Northeast Energy Efficiency Partnership (NEEP) in 2004 and updated in 2005.[5] We rely primarily on this "NEEP report" for this discussion.[6]

Economically achievable energy efficiency is defined as "The potential for maximum market penetration of energy efficient measures that are cost-effective based on the Total Resource Cost test, that could be adopted through a concerted, sustained campaign involving proven programs and market interventions, and not bound by any budget constraints."

The NEEP report forecasts that ***economically achievable energy efficiency could bring New England's energy demand down to 1993 levels by 2013***. These savings, of over 33,000 GWh in 2013, would be achieved through a combination of increased investment in efficiency programs, using a variety of policy instruments, as well as improved standards and codes. See Figure 3, below. At the time the study was updated, it was determined that continuing existing efficiency programs would capture only 20% of the efficiency potential by 2013. Notice also that there is no diminishing return involved with a very significant increase in energy efficiency procurement.

Figure 3



[5] Optimal Energy, Inc. 2004, updated 2005. *Economically Achievable Energy Efficiency Potential in New England*. Prepared for the Northeast Energy Efficiency Partnerships, Inc.. See: http://www.neep.org. This report was not original research but synthesized results from various recent state-level efficiency studies.

[6] Only one state, Vermont, has updated its own potential study since the NEEP report.

Opportunity Areas
The NEEP Report describes significant opportunities for energy savings in all customer sectors, with over one-third available in the residential sector and almost two-thirds in the commercial and industrial sector.

Table 1 Opportunities for Economically Achievable Efficiency by 2013[7]

	Residential	Commercial	
Reservoirs by Sector			
	37%	63%	
Reservoirs by End Use			
Lighting	49%	Lighting	40%
Water Heating	20%	HVAC	35%
Heating	15%	Other	25%
Other	16%		
Reservoirs by Market			
Lost Opportunities	33%	Lost Opportunities	33%
Retrofit	67%	Retrofit	75%
Source: Ibid.			

The variety of end-uses and markets where this efficiency is found suggests that a variety of approaches will have to be used to secure it. The NEEP report also compared the cost of various strategies to acquire efficiency savings and calculated the realistic savings available using each approach.

Table 2 Cost of Acquiring Achievable Potential and Resulting Savings[8]

Strategies	**Average Cost/kWh**	**Savings in 2013**
Existing Programs	3.1¢	5,750 GWh
Building Codes	2.9¢	1,090 GWh
Improved minimum product and appliance standards	1.0¢	2,284 GWh
Additional EE	3.1¢	25,251 GWh
Total savings		34,375 GWh

Almost two thirds of the potential savings identified in this report would have to be obtained through additional investments in energy efficiency measures. The strategies proposed by NEEP include:

- Expand procurement rules for state and municipal facilities and equipment purchases;

[7] Ibid.

[8] Ibid.

- Adopt or expand resource acquisition role of EE to meet specific state and regional electric supply needs (e.g., demand response, T&D requirements, default service options)

- Increase ratepayer funding for EE programs. The NEEP Report estimated that it would require keeping current programs on course, plus an additional $2.6 billion in efficiency spending over ten years, and $700 million in spending on codes and standards to offset load growth by 2013.[9]

Since the NEEP report was written, a number of jurisdictions have begun to act on these suggestions and other measures, as described in the next chapter.

[9] See *The Economically Achievable Energy Efficiency Potential in New England – Updated Spring 2005* at http://www.neep.org/files/NEEP_Achievable_Potential_Presentation_UPDATED.ppt

Chapter 3. Status of Energy Efficiency Approaches in the New England States

This chapter reviews many state-level approaches to energy efficiency deployment in New England. For each, a brief table summarizes the status in each state. Appendix 1 pulls all the brief tables into one large table, giving a region-wide view of the state-by-state status of efficiency policies.

3.1. Traditional System Benefit Charge (SBC) Approaches

3.1.1. Electric EE Funding Levels

All New England states employ system benefits charges (SBC), which collectively fund most of the region's efficiency activities, creating a funding pool of nearly $250 million annually for energy efficiency activities. New England SBCs currently range from a low of 1.45 mils/kWh to a high of nearly 5 mils/kWh, with most falling in the 2-3 mils/kWh range. Recent years have seen an increase in both efficiency funding and efficiency spending. Four of the six New England states have experienced or anticipate increases in efficiency funding, and this trend is likely to continue into the foreseeable future.

Table 3 Public Benefits and Utility Electric EE Funding in New England[10]

	CT[11]	ME[12]	MA[13]	NH[14]	RI[15]	VT[16]	TOTAL
Current electric EE SBC rate – EE only (mils/kWh)	Technically 3 mils; closer to 2 mils available	Varies, with cap of 1.45 mils	2.5 mils	1.8 mils	2 mils	R: 4.96 mils C: 4.08 mils I: 2.93 mils	
Recent Total Annual Electric EE SBC budgets[17]	$62 million	$9.2 million	$123 million	$20 million	$16 million	$19.5 million	**$249.7 million**
Recent or anticipated EE funding increase -- electric	P; EE budget may return to earlier high of 3mils/kWh	Y	P; SBC still set at 2002 level; EE expansion possible	P; changes in IRP process may lead to increased EE spending	P; new Least Cost Procurement requirements in 3.6 below)	Y; annual EEU budget increased to $30 million by 2008	

Increases in SBC funding

Within the last two years, SBC funding levels have increased in a number of states. In Maine, individual utility SBCs will be increased until all utilities have reached the state's statutory cap of 1.45 mils/kWh. In addition, an amortization arrangement for prior years'

[10] For this table and like tables following, abbreviations have the following meaning:
Y = Policy/Action in place
N = Policy/Action not in place
P = Policy has been proposed or is pending
S = Some aspects of policy are in place

[11] Figures are from the ECMB Final Report for 2005.

[12] Figures are from *Results from Docket 2006-446*, available at http://www.efficiencymaine.com/orders-documents/Docket2006-446NewPrograms.pdf. Total efficiency budgets are expected to increase to $13 million in 2007 once old Power Partners amortization is paid off and SBC rises to cap at all utilities.

[13] Figures are from a DOER summary report on EE programs from 2003-2005. See http://www.mass.gov/Eoca/docs/doer/pub_info/ee03-05.pdf

[14] Figures are approximate and based on personal correspondence with New Hampshire PUC staff.

[15] Figures are from Attachment 6 and 7 to 2/5/07 Order in Docket 3779 at http://www.ripuc.org/eventsactions/docket/3779-NGrid-Ord18858(2-5-07).pdf

[16] Amounts reflect budgets, spending, and SBC charges related to Efficiency Vermont only. SBC charges, budgets, and spending levels related to Burlington Electric or Distribution Utility Planning are not included. Vermont figures from EEU Budget Order, issued 8/2/06 http://www.state.vt.us/psb/document/ElectricInitiatives/EEU_Budget_Order.pdf , and EEC Charge Order, issued 8/15/06 http://www.state.vt.us/psb/document/ElectricInitiatives/2006_EEC_Increase.pdf

[17] Figures are estimates and reflect 2005 and 2006 levels only. Connecticut's efficiency budget would be significantly higher, except that $36 million in SBC funds are budgeted to be used by the State to meet other financial commitments.

utility DSM expenses is due to expire shortly, which will increase available SBC funding as well. Between the SBC ramp up and amortization expiration, Maine's energy efficiency funding levels are expected to increase substantially over the next several years. SBC levels are also increasing in Vermont, where a statutory cap on SBC funding was lifted and 2006-2008 efficiency funding has increased substantially. Connecticut may also see an increase in SBC funding, where a bill is pending that would restore SBC funds that are currently diverted to the general fund.

Another trend has involved extensions of the SBC time horizon. Many SBC arrangements were originally designed as temporary measures following restructuring. As legislatures have eliminated sunset provisions or extended SBC time horizons, these programs have become permanent mechanisms to fund efficiency.

Increases in efficiency spending.
In some states, spending levels have historically failed to utilize all available SBC funds. The current trend in these states, however, has been to ramp up programs until spending on cost-effective efficiency exhausts available SBC funds. In Vermont, this ramping up of efficiency spending was followed by an increase in available SBC funds. In Maine, spending has increased to the point where nearly all available funding has been utilized, and programs will continue to ramp up to take advantage of increases in available funding described above. Connecticut is also likely to increase efficiency spending if full SBC funding is made available.

A new method for determining efficiency spending levels.
Vermont has changed the way that SBC levels are established, in order to allow cost-effective potential to drive efficiency funding levels, rather than setting budgets by statutorily authorized SBC levels. The Public Service Board (PSB) recently established budgets that allow efficiency activities to increase dramatically over the next three years. New levels will be established in three years, and will be based on the level of cost-effective efficiency procurement that produces the maximum benefit for the state. Also new least cost procurement requirements in Rhode Island may effectively do the same thing (see Section 3.2.1 below).

3.1.2. Gas EE Funding Levels

All six New England states currently require some amount of natural gas energy efficiency, and collectively, the region spends over $45 million on gas energy efficiency programs. Spending is likely to increase in the future, as a number of states have begun to expand these efforts. In Connecticut, natural gas conservation has received increased attention following the passage of the 2005 Energy Independence Act. The Act has not required a funding increase, but spending on gas efficiency programs has increased annually since its passage. Funding levels have also increased in Maine, where a recent statute requires that 3% of gas utility revenues be spent on efficiency programs.[18] Funding has also increased in Rhode Island, where the region's first gas SBC was created by statute in 2006.

[18] Utilities serving fewer than 50,000 customers are exempt.

Table 4 Public Benefits and Utility Gas EE Funding in New England

	CT[19]	ME	MA	NH	RI	VT	TOTAL
Recent or anticipated Gas EE funding increase	Y; additional increases expected in 2007	Y; 3% of revenues (certain gas cos.)	P; EE expansion possible	P; possible, pending IRP outcome	Y; SBC created in 2006	N	
Total Gas EE Funding	$2.7 million (2006)	$150,000 (2006)[20]	$20-25 million[21]	$4.2 million[22]	$7.5 million (projected 2007)[23]	$11.3 million (2003)[24]	**Approx. $45 million**

Vermont currently requires integrated resource planning for gas utilities, which has historically resulted in a substantial amount of funding for efficiency. New Hampshire is in the process of developing IRP or Least-Cost Planning requirements for gas utilities, which may result in an increase in efficiency funding.

3.1.3. EE for Unregulated Fuels

There has been some regional interest in developing energy efficiency programs for unregulated fuels including oil and propane. Vermont has taken initial steps toward developing such programs. The state has analyzed potential savings from unregulated fuels and the legislature is considering a bill that would require an SBC-type of levy on certain home heating fuels. Other states have informally discussed similar options.

Table 5 Consideration of EE for Unregulated Fuels

	CT	MA	ME	NH	RI	VT
Expanding EE for unregulated fuels	P; rec. in climate plan				P; rec. in climate plan	P; bill introduced

[19] Information comes from personal communication with Dan Sosland of Environment Northeast on 3/1/2007.
[20] Amount reflects interim programs. Funding amount is expected to increase when the 3% requirement is fully implemented. See 9/21/05 Order in Docket 2005-530.
[21] See Massachusetts DSM Summary in Appendix to *Demand-Side Management: Determining Appropriate Spending Levels and Cost-Effectiveness Testing,* Summit Blue Consulting and RAP, 2005.
[22] See Order 24,109 in Docket 02-106 at http://www.puc.state.nh.us/Regulatory/Orders/2002ORDS/24109g.pdf
[23] A settlement agreement filed on 4/2/07, if approved, would result in a 2007 gas efficiency budget of $7.5 million for NGrid. See Settlement Agreement in Docket 3790 at http://www.ripuc.state.ri.us/eventsactions/docket/3790-NGrid-Settlement (4-2-07).pdf.
[24] Figure is from the 2004 Vermont Gas Integrated Resource Plan

3.2. Lifting the Ceiling on SBCs

In some jurisdictions outside New England public benefit funds represent the minimum that must be spent on energy efficiency (e.g. California, Minnesota). However, in New England the construct of these charges in most cases has essentially set a ceiling on efficiency expenditures. This virtual "cap" on spending has constrained states and utilities from acquiring an abundant, low-cost resource that has multiple economic, environmental and public health benefits for the region.

3.2.1. Procuring Energy Efficiency as Resource

Throughout New England, states are taking steps toward procuring energy efficiency as a resource. There are a number of approaches being considered and/or implemented in New England that advance the concept of procuring efficiency as a resource, including least-cost procurement, energy efficiency portfolio standards, and integrated resource planning. The different mechanisms used may vary, but each approach has the potential to move energy efficiency procurement beyond the limits of capped System Benefit Charges.

Least-Cost Procurement

This approach has been proposed in several restructured states, and would allow or require a "least-cost" approach to procuring standard offer service. Least-cost procurement can be accompanied by a least-cost or integrated resource planning process, or may be conducted via a bidding or auction process in which energy efficiency is allowed to compete with supply. Least-cost procurement and least-cost planning have been required by statute in Rhode Island, and implementation policies are in development. In Maine, least-cost procurement is not required, but a recent statute allows energy efficiency to bid in to standard offer service, along with supply.

Energy Efficiency Portfolio Standards

This approach requires utilities to procure a specified percentage of energy efficiency. In Massachusetts, DOER has petitioned the DPU to open an investigation considering an EEPS. DOER's proposed EEPS would apply to standard offer service only and would require efficiency procurement above and beyond current SBC levels. In Connecticut, under the "Class III" provisions of the state's Energy Independence Act, electricity suppliers must demonstrate that they have procured a certain percentage of electricity supply from qualified efficiency measures (including combined heat and power) – 1% in 2007, growing to 4% in 2010.

Integrated Resource Planning

Integrated resource planning is currently required in Vermont and New Hampshire. Both states require a planning process that compares demand and supply side resources on an equivalent basis. In both states, recent policy changes are likely to result in increased implementation of efficiency. In Vermont, regulators have recently approved dramatic increases in funding designed to allow a greater percentage of cost-effective potential to be procured. Efficiency is still funded by the SBC, but the SBC is no longer capped, and funding amounts are now based on capturing the amount of cost-effective potential that results in optimum benefit to the state. The amount of energy efficiency procured in Vermont by the third party administrator, however, is not yet linked to utility IRP.

(Vermont also has an integrated transmission planning process underway; see Section 3.2.2.)

In New Hampshire, IRP requirements were uncertain during restructuring. The state had partially restructured, and while the state has retail competition, the largest utility, Public Service of New Hampshire (PSNH), continues to own generation. A recent commission Order clarified that PSNH must still conduct IRP, and it is expected that the next IRP filing will result in increased DSM.

Connecticut's governor has submitted legislation proposing the adoption of an IRP process for standard offer service, and Rhode Island will be implementing a Least-Cost Procurement planning process in 2008. Both of these provisions have the potential to increase energy efficiency procurement for standard offer customers.

Table 6 Approaches Considering Efficiency as a Resource

	CT	ME	MA	NH	RI	VT
Recent action on EE as a resource	1. Y; EEPS 2. P; IRP for standard offer proposed in governor's bill	P; new process allows, but does not require, EE in SOS.	P; investigation underway	P; requirements updated for 2007 IRP	Y; implementation is in development	Y
Type of action	1. EE or CHP must meet minimum % of energy supply 2. IRP for SOS	EE Procurement for SOS	EEPS	IRP for SOS	Least cost procurement and planning	Increased SBC funding
LCP/EE requirements for Standard Offer Service or Monopoly Service	P; proposed in governor's bill	P; new process allows, but does require, EE in SOS.	P; investigation underway	Y; requirements updated for 2007 IRP	Y; implementation is in development	Y; EE task assigned to third party; planning may lead to added investment

Moving Beyond Current Levels of SBC-Funded Efficiency

As described below, some New England states have begun to move beyond the current levels of SBC-funded efficiency. Some of these efforts are similar to California's ground-breaking energy efficiency activities. In 2003, the California Public Utilities Commission established what have been called the world's most ambitious energy efficiency goals, setting incremental annual MWh savings goals for each major electric utility in California. In order to finance these goals, California adopted a hybrid system,

in which efficiency is funded both by SBC funds and through utilities' resource procurement budgets. SBC funds, which are required by statute to be used equitably among ratepayers, are used to procure a base level of efficiency savings. Resource procurement funds are used by utilities to aggressively pursue the maximum amount of cost-effective energy efficiency potential, and may be targeted toward those customers that offer the best savings opportunities.

A similar hybrid approach is used in Vermont, where a portion of SBC funds are used to procure baseline amounts of efficiency and must be distributed equitably among ratepayers, while additional amounts of SBC funding may be targeted toward the greatest savings opportunities.

Massachusetts DOER's proposal to establish an Energy Efficiency Portfolio Standard would also take a similar approach, using SBC funds to achieve baseline levels of efficiency, and establishing a portfolio standard to procure an amount of additional efficiency, as determined by regulators to be beneficial to the state.

3.2.2. Least-Cost Transmission Planning and Energy Efficiency

Energy efficiency value in transmission system planning has received little region-wide attention. Most states have not addressed transmission planning beyond preexisting IRP or Certificate of Need requirements. ISO-New England does not integrate energy efficiency into its Regional System Planning process, though the creation of the forward capacity market, in which energy efficiency is eligible to participate, indicates that its role as a resource will be increasingly recognized.

Table 7 Least Cost Transmission Planning in New England

	CT	ME	MA	NH	RI	VT
Least cost transmission planning	N	N		N; transmission planning included in IRP	N	P; implementation is in development

Energy efficiency targeted to certain load centers in a timely way could slow or avoid the load growth that triggers some transmission projects.

At the direction of a new statute, one state, Vermont, is developing a process in PSB docket 7081 that will integrate energy efficiency into transmission and distribution planning. Under this process, transmission owning utilities will be required to submit long-range transmission plans incorporating demand-side solutions when appropriate and cost-effective. An MOU describing the process is awaiting action by the regulatory agency.

3.3. Utility Incentives and Disincentives to Efficiency

3.3.1. Aligning Utility Incentives with Public Policy Goals

Overall, the region has taken a piecemeal approach to aligning utility incentives with energy efficiency delivery. Assuming that the process of cost recovery for energy efficiency is stable, meaningful alignment of utility incentives points to the need for the use of one or both of the following regulatory tools: one, the removal of utilities' disincentive to support more aggressive energy efficiency (than covered by SBC funds today) and, two, the awarding of financial incentives to the utility or other implementing agency for superior performance in the acquisition of efficiency savings. It appears that the present varying assortment of incentives, cost recovery, and other approaches allows efficiency to be acquired at present funding levels. Currently, no state in the region has systematically and comprehensively removed utilities' disincentives to support all cost-effective energy efficiency, although a number of policy approaches are employed throughout the region. Most states have, however, adopted incentive mechanisms for energy efficiency implementers.

Methods ranging from decoupling and lost revenue recovery to third party implementation are used, but there are no clear trends emerging in the region. If there has been a trend in recent years, it has been to rely instead on incentives to promote energy efficiency procurement. This approach is used in most New England states. Vermont has begun to take a comprehensive approach by combining all of the policy options – third party implementation, decoupling, lost revenue recovery, and incentives – to create an electric system in which all participants are supportive of energy efficiency. However, the decoupling effort is new and currently applies to only one Vermont utility. Decoupling is not used elsewhere in New England, although there are indications that it and other approaches may be considered by Rhode Island and Massachusetts in the near future. The Connecticut commission investigated decoupling as a result of the Energy Independence Act of 2005 and subsequently decided not to pursue it at that time on the grounds that other mechanisms in place provided sufficient incentives; there are indications that this may be revisited.

Lost revenue recovery is available in Connecticut, Massachusetts, and Vermont, but not in a comprehensive or systematic way. Connecticut and Massachusetts allow lost revenue recovery for gas programs, but the mechanism does not appear to be frequently used. Lost revenue recovery is available for some electric energy efficiency programs in Vermont.

Table 8 Addressing Utility Incentives and Disincentives

	CT	ME	MA	NH	RI	VT
Disincentives have been addressed	S; some lost revenue recovery available for gas	S; non-utility EE administrator	S; some lost revenue recovery available for gas	N	N	S; third party administration, some decoupling, narrow opportunities for lost revenue recovery
Efficiency Implementer receives incentives	Y	N	Y	Y	Y	Y

The use of a non-utility EE administrator is another approach to addressing utility disincentives. This approach alone does not eliminate utilities' incentive to sell kilowatt-hours, but it does remove implementation from entities with an incentive to sell, not save, energy. Vermont and Maine have adopted such a system, and Connecticut is considering creating a statewide third-party administrator in the current legislative session. Even where there is non-utility administration of energy efficiency programs, decoupling can produce a situation where the utility can be supportive without worry of financial consequences of energy efficiency programs, market transformation, building codes and appliance standards and other beneficial policies and programs that may reduce sales.

Use of incentives is much more widespread, and some form of incentive is used in nearly every state. Vermont offers incentives for meeting certain pre-determined performance levels to the energy efficiency utility that implements most programs. Other states target incentives toward the electric utilities, which are responsible for implementation of most energy efficiency programs. (In Maine, where efficiency is implemented by a state agency, there is no incentive mechanism.) Massachusetts offers incentives to one gas utility.

The trend over time has shown a steady increase in the use of incentives. Connecticut, Massachusetts and Rhode Island have had incentives in place since the 1990s; New Hampshire adopted incentives in 2000; Rhode Island also recently passed legislation requiring the development of incentives for electric utilities, to be based on their success in implementing least-cost procurement planning for standard offer service. In Massachusetts and Vermont, incentives are proposed and approved at the same time as energy efficiency programs, allowing the incentive mechanism to be updated and improved over time.

3.4. Other State-Level Activities Supporting Energy Efficiency

3.4.1. Regional Greenhouse Gas Initiative (RGGI) Participation

All six New England states have signed the RGGI Memorandum of Understanding (MOU). The MOU stipulates that each state may determine how to allocate allowances, with the stipulation that at least 25% must be allocated for "consumer benefit or strategic energy purposes." This leaves individual states with two major policy decisions: first, states must determine what percentage of allowances to allocate to consumer benefit; and second, states must decide how to spend the funds that result from the sale of allowances so allocated.

New England states have shown significant support for 100% consumer allocations. Vermont has passed a statute requiring 100% consumer allocation, and governors in Connecticut, Maine, Massachusetts, and Rhode Island have announced plans to auction 100% of allowances. In most states, however, the 100% allocation still needs legislative and/or agency approval.

Table 9 RGGI Participation and Allocation Proposals

	CT	ME	MA	NH	RI	VT
RGGI Participation	Y; up to 100% auction proposed	Y;100% auction proposed	Y;100% auction proposed	Y	Y, 100% auction discussed	Y; 100% auction confirmed

Regarding the use of consumer allocation funds, states have a wide range of policy options from which to choose. While energy efficiency has clearly emerged as a funding priority for auction proceeds, in some cases funds may be used for non-efficiency purposes. Funds may be made available for rate reductions, for example. In Maine, the Governor's proposal would allow the use of some funds to offset paper mills' cost of carbon cap compliance. In other states, governors have proposed that auction proceeds will be used to support demand response, renewable energy, and combined heat and power projects. Final proposals and implementation plans are still in development. Vermont's legislation calls for an integrated approach in which the PSB will use auction proceeds to fund a portfolio of programs that meet specific goals described in the statute. These statutory goals include avoiding generator windfall and minimizing utility incentive to increase carbon emissions, in addition to providing consumer benefit and maintaining system reliability. Under such a system, the Board may propose a wide range of programs, including, but not limited to, energy efficiency.

3.4.2. Dynamic Pricing for Standard Offer Service or Monopoly Service

Increased interest in dynamic pricing and advanced metering can be seen throughout the region. Dynamic pricing means a real time, critical peak, or time of use price that much more closely reflects the cost of production than average cost prices. No states currently have a dynamic pricing program in place for standard offer customers, but four states are

considering dynamic pricing proposals in legislative or regulatory venues, and one state legislature has authorized TOU rates and pilot programs for certain standard offer customers. Some of Vermont's vertically integrated utilities offer TOU rates to small customers, and have required TOU tariffs for large customers.

Table 10 Dynamic Pricing in New England

	CT	ME	MA	NH	RI	VT
Dynamic pricing for SOS or Monopoly Service	P; PUCT action proposed in bill	P; some discussion of pilot programs	P; investigation underway	P; investigation underway	P; new legislation authorizes some TOU rates	TOU mandatory for some large customers, optional for others

Customers paying a dynamic price in trials or more permanent circumstances exhibit a conservation effect. This means that their awareness of being efficient during high cost times carries over to other hours, reducing overall sales to these customers. This may be because the customer purchases a more energy efficient device, or the customer simply gains an awareness of energy efficiency that was previously lacking. A study of these experiences pegs these energy savings at between 3% and 20%, suggesting that dynamic pricing as a default or standard offer service option, or as a required tariff, can be an important tool in a market transformation strategy (in addition to its other purposes).[25]

3.4.3. Appliance Standards

Appliance standards have received increased attention in New England in recent years. Standards have been passed for recently in Connecticut, Massachusetts, Rhode Island, and Vermont. However, many of these products, including furnaces and boilers, are now covered by federal standards, preempting states' actions unless they seek a waiver for a higher standard. The New Hampshire legislature considered a standards bill during the current legislative session; the bill has been deferred for consideration in 2008. Maine's legislature has considered and rejected appliance standards several times in recent years.

Rhode Island, Massachusetts, and Vermont have adopted standards for a wide range of products. While some of these standards will be preempted federally, some are still in force. Connecticut's standards have largely been preempted federally, and New Hampshire and Maine have no state standards. In addition, throughout the region there are opportunities to adopt standards for new products, including incandescent light bulbs, HVAC, and television screens.

[25] Nemtzow, David, Dan Delurey and Chris King, "The Green Effect," *Public Utilities Fortnightly*, March 2007.

Table 11 New Appliance Standards

	CT	ME	MA	NH	RI	VT
New appliance standards	Y (2004); new (2007) standards proposed	N	Y (2005)	N	Y (2006)	Y (2006)

The Connecticut legislature has granted the regulator the authority needed to update standards without explicit legislative direction. This authority has not yet been exercised.

3.4.4. Energy Codes for Buildings

Like appliance standards, building energy codes can raise the floor, so that a minimum standard of energy efficiency is incorporated into all new buildings. This approach has many benefits, among them reducing split incentives. Updated and implemented energy conservation codes for buildings allows all consumers, whether renters or owners, to consume less energy. Several New England states, but not all, review and update their building codes on a regular basis, which provides an opportunity to incorporate new technologies and measures into energy efficiency requirements.

The table below summarizes the status of energy codes for residential and commercial construction in New England. Although most are based on the International Energy Conservation Code and/or ASHRAE (American Society of Heating, Refrigeration and Air-conditioning Engineers) standards, state codes are not based on the same version of those guidelines, and some are not based on either standard.

How effectively are these codes implemented? No conclusive information was found on the enforcement of energy codes. Studies are expensive and not done often. However an evaluation done in Massachusetts showed compliance was often less than 50%.[26] Codes are not necessarily producing the savings they were designed to obtain and opportunities for significant energy saving continue to be lost. The region may not be getting the baseline right.

One approach might be to chip away at these problems. Building energy codes could be updated more often, and on a more regular basis. State and local inspector positions turn over frequently in some jurisdictions, so regular trainings would be useful. Approaches to make compliance enforcement expected, consistent and routine could be explored.

A different more comprehensive approach could also be considered. The energy performance of residential new construction could be rated by independent third parties using ENERGY STAR or other rigorous efficiency rating. Code compliance for commercial buildings could be integrated with commissioning arrangements. Many towns on Long Island have been moving to energy rating using ENERGY STAR rather than relying on building codes. A recent whitepaper discussed this approach in some detail.

[26] Personal communication with Michael DeWein, Technical Director, Building Code Assistance Project/ Alliance to Save Energy, 4/23/07.

"The most cost-effective way to improve the energy efficiency of new homes is to raise and then aggressively implement energy codes. Instead of making small, incremental improvements with insulation upgrades or specifying some air sealing details—the standard approach to improving codes—some communities are taking big steps and moving all the way to the ENERGY STAR Homes level, reducing home energy use by 20% or more relative to the International Energy Conservation Code. At the same time, instead of relying on code officials whose primary focus is (and should be) on life/health/safety issues, energy professionals are being engaged to conduct true performance testing that results in homes that *actually* achieve the desired code levels. And all of this can be accomplished at no cost to tax- or rate-payers; only those home buyers who directly benefit from the more efficient homes pay the cost to get there."[27]

This brief summary does not do justice to the complexity of issues involved in this policy area. However, recognizing the huge impact that increased efficiency in new buildings can have on the economy, environment and energy supply, it is an area that merits consideration by this group.

Table 12 Energy Codes for Buildings[28]

	CT	ME	MA	NH	RI	VT
Residential Construction (date adopted)	2003 IECC (12/31/05)	Maine Model Code, based on the 2003 IECC (7/27/05)	based on the 2003 IRC and IBC with state-specific amendments (4/1/07)	2000 IECC (9/14/02)	2003 IECC (8/1/04); adopting 2006 IECC in July 2007	based on the 2000 IECC with state specific amendments
Mandatory State-wide	Yes	No[29]	Yes	Yes	Yes	Yes
Commercial Construction (date adopted)	2003 IECC (12/31/05)	2003 IECC or ASHRAE/ IESNA 90.1-2004 (7/27/05)	based on ASHRAE/IES NA 90.1-1999, 2000 IECC, and additional state-developed amendments	2000 IECC, with updated reference to ASHRAE/I ESNA 90.1-1999 (9/14/02)	2003 IECC amended to include ASHRAE/I ESNA 90.1-2001 (8/1/04)	based on 2004 IECC with amendments to incorporate ASHRAE/IESNA 90.1-2004 and state-specific amendments (1/1/07)
Mandatory State-wide	Yes	Yes	Yes	Yes	Yes	Yes, as of 1/1/07
Code Update Schedule	Not more than every four years	No	At least every five years	No	Every three years	Every three years

[27] Richard Faesy and Michael DeWein, "Ratcheting Residential Energy Codes up to ENERGY STAR," March 2007.

[28] IECC=International Energy Conservation Code. IBC=International Building Code. IFC=International Fire Code. Building code status taken from the state update portion of the Building Codes Assistance Project website. See http://www.bcap-energy.org/newsletter.php?news_month=5&news_year=2007&section=state_updates.

[29] Maine code sets a minimum standard if a jurisdiction adopts a residential code. Only two cities, Portland and Biddeford have adopted a code according to the BCAP website, *supra*.

3.4.5. State Actions to Meet NEG/ECP Targets

In 2001, the Conference of New England Governor and Eastern Canadian Premiers adopted greenhouse gas reduction targets for the region (i.e., to reduce GHG emissions to 1990 levels by 2010, to 10% below 1990 levels by 2020, and, eventually, to 75-85% below 1990 levels).[30] Each state has developed, or is developing, a comprehensive statewide climate action plan to meet these targets. Aggressive energy efficiency programs for electricity and fossil fuels are essential ingredients of each of these plans.

[30] NEG/ECP *Clmate Change Action Plan*, August 2001.

Chapter 4. Regional Initiatives and Opportunities

Historically, the New England's energy efficiency administrators have coordinated, at least through informal means, the design and delivery of their programs. One organization that has facilitated this kind of cooperation is the Northeast Energy Efficiency Partnerships (see subsection 4.5, below). New opportunities are emerging. Several regional vehicles to support investment in energy efficiency are currently under development. This chapter describes them briefly.

4.1. ISO-New England

Demand Response Programs
ISO-New England administers 1,646 Demand Response assets that yield about 934.4 MW of capacity. 106.5 MW are enrolled in the Real-Time Price Response program; the rest are enrolled in reliability programs.[31]

Take Charge New England Campaign
In 2006, ISO-New England launched the *Take Charge New England* campaign to educate consumers about the benefits of energy efficiency to the system and to consumers. Information is aimed at residential, commercial, and institutional consumers. Partners include ENERGY STAR, Lowe's, NEEP, and the Commonwealth of Massachusetts. (Note: only CT and MA utilities are linked directly from the program website.) More information is available at http://www.takecharge-ne.org/index.html.

4.2. New England's Forward Capacity Market (FCM)[32]

The FCM was designed through a settlement process to provide economic incentives to attract investment in new and existing capacity in New England. What makes this market of particular interest is that, for the first time in the US, demand-side resources can compete on a comparable basis with supply resources in a wholesale regional market.

On April 16, 2007, FERC conditionally approved the FCM market rules. The first FCM auction will be held in February 2008 for the delivery of capacity resources in 2010. Through the auction, owners of capacity resources will bid to be paid market-based prices in return for the commitment to provide capacity to meet the region's reliability needs. The inclusion of demand-side resources in this market process is unique to New England, and may serve as a model in other RTOs.

Resources must qualify to participate in the auction by proving they can meet their commitment. New resources had to submit a "Show of Interest" application this winter as the first step in the qualification process. Applications totaling 2,279 MW of demand resource capacity were submitted by the February 28, 2007 deadline. While the majority of these were load management or distributed generation proposals, over 550 MW appear

[31] Personal correspondence with Henry Yoshimura of ISO-NE on 3/8/07
[32] Most of the information for this section came from the ISO-New England FCM Show of Interest fact sheet downloaded on 4/09/07 from:
http://www.iso-ne.com/pubs/whtpprs/show_of_interest_summary_fact_sheet.pdf

to be energy efficiency measures aimed at on-peak and seasonal peak demand reductions. Assuming for the sake of calculation that 200 MW of these proposals are successful at the conclusion of the first round of bidding, **this could produce around $10 million of additional compensation per year for New England energy efficiency programs** (compensation at a rate of roughly $4 per kW-month). Examples of measures include commercial lighting and efficient air conditioning. The ability of "baseload" efficiency to compete with supply in the forward capacity market remains to be demonstrated.

The demand resources still have to be evaluated and approved by ISO-NE staff, offer needed capacity at a price that makes them competitive in the auction, and deliver capacity as promised. The first applications submitted in this first round were primarily from non-utility providers. Information on the ISO-NE website did not break down the applications by state. Location is likely to be important since a primary goal of the FCM is to locate resources where they can improve reliability. ISO-NE mentions the location of *supply* is important for this reason, but doesn't explicitly indicate that the location of *demand resources* is important.

4.3. Regional Greenhouse Gas Initiative

All six New England states have signed on to RGGI. Five states have either proposed, finalized, or are seriously considering an auction process for 100% of allowances, with some or all of proceeds used for consumer benefit, including EE and other programs to reduce greenhouse gas emissions, as guided by the Model Rule adopted by the states.

As the capacity market and carbon allowances will likely channel additional funds to the energy efficiency program administrators, states will face a choice. One option is to consider these funds supplementary to existing funds collected from consumers, creating an opportunity to do more energy efficiency. A second option is to do no more energy efficiency, but rather use the new money offset some monies that are collected in rates from consumers, lowering rates. The choice is not binary, a state can add some funds, and offset other funds. No state has yet had to address this choice.

The New England states have allowances assigned to them totaling 55,809,691 short tons for the five year period 2009-2013. If two-thirds of these allowances are sold to generators for $2 per ton with the proceeds used for energy efficiency, **a total of over $74 million would be raised to support energy efficiency annually**. These funds could be applied for incremental energy efficiency programs beyond those now funded through consumers' bills.

4.4. New England Governors/Eastern Canadian Premiers (NEG/ECP)

The New England Governors/Eastern Canadian Premiers (NEG/ECP) conferences have provided a venue for consideration of regional approaches to energy and environmental issues for many years. In recent years, the Governors and Premiers have set joint goals[33] for significant reductions in greenhouse gases, with each jurisdiction developing its own

[33] NEG/ECP adopted a Climate Change Action Plan in 2001 with the following goals: (1) a return to 1990 emission levels by 2010, (2) a 10 percent reduction in emissions by 2020, relative to 1990 levels, and (3) a long-term reduction target of 75–85 percent from 2001 levels for the region.

plan to meet the goals. NEG/ECP agreements anticipate that improved energy efficiency in the electric and gas sectors will be necessary and important approaches to reach these regional goals.

Every New England state has responded to the NEG/ECP goals with some form of a climate action plan or energy plan with GHG mitigation in mind. These plans rely heavily on a variety of energy efficiency measures to reach their goals.

In 2006, NEG/ECP resolved to "mitigate future growth in electric energy demand through energy efficiency and demand response."[34] Utility regulators, and energy and environment commissioners, ministers and staff representing the New England states and Eastern Canadian provinces met in February, 2007 to draft recommendations for consideration and adoption by the governors and premiers in June 2007.

NEG/ECP has also issued two discussion papers recently relating to energy efficiency. An "EE and Renewables" discussion paper highlights the benefits of tapping into the Northeast's energy efficiency potential, and contains a list of recommendations regarding EE and addressing funding, incentives, air quality, standards/codes, and leadership.

A Climate Change Action Plan discussion paper discusses the region's actions toward its 2001 emissions reduction goals and recommends future actions, including the reduction of greenhouse gas emissions through increased energy efficiency.[35]

4.5. Other Regional Activities

The Northeast Energy Efficiency Partnerships has designed and managed several regional programs for the program managers, creating economies of scale and consistency for trade allies. Recently, NEEP has been a leader in efforts to create more consistent monitoring and verification practices. Consistency may serve to streamline regulatory review of programs, and enable energy efficiency to more effectively participate in trading and commodity markets and to count toward environmental compliance.

Multi-state utilities such as National Grid and Northeast Utilities have brought some degree of program uniformity to their respective service areas, but that has not translated to region-wide approaches. In fact, for practical reasons, programs a utility offers in congested southwest Connecticut may differ from those offered in New Hampshire.

The Ozone Transport Commission (which oversees a region of the eastern US that includes all of New England) created the High Electricity Demand Day (HEDD) Initiative, in 2006, to address the pressure of high electric demand days on attainment of ground level ozone standards. NOx emissions from electric power plants are a key precursor of ground level ozone. Emissions rates from the peaking power plants that typically run on high electric demand days tend to be much higher than average NOx emission rates; and high electric demand tends to coincide with hot days, when the health effects of NOX emissions are more severe. Air directors and environment agency leaders

[34] NEG/ECP Resolution 30-2. See http://www.negc.org/resolutions/Res_30-2_5-06.pdf
[35] The Climate Change discussion paper is available at http://www.neg-ecp-environment.org/newsletters/News_2006_DISCUSSION_PAPER_Climate_Change_Action_Plan.pdf.

are suggesting that energy efficiency and demand response may be a more economical and practical way of achieving healthy air quality than an exclusive focus on generation-site emission controls. A challenge is to promote engagement of energy and environment regulators from many states to address this issue in a fully collaborative manner that produces an effective long-run, least cost solution. In an MOU signed in March, 2007, the OTC states committed to pursuing a strategy to achieve estimated emissions reductions from HEDD units.

Chapter 5. Key Questions and Challenges

New England is the nation's regional leader in energy efficiency but, as the data in the preceding chapters reveal, there remains a very large and very valuable efficiency resource yet unexploited. Capturing that resource raises some complicated questions and poses real challenges. What follows here is a first cut at identifying those questions and challenges, to help strategic thinkers, including those participating in the *The Future of Energy Efficiency in New England: A Strategic Planning Retreat*, frame the issues and their potential solutions, specifically in the context of coordinated regional approach to the acquisition of energy efficiency.

1. Barriers and Opportunities

- **The Situation.** What are the region's electric system challenges and opportunities, and has this paper framed them correctly?

- **Barriers**. What are the key barriers to capturing all cost-effective efficiency options and which should be addressed first? Are there particular barriers that programmatic approaches to efficiency still struggle to overcome and therefore merit close attention? Examples include:
    - Traditional barriers such as access to information and capital, split incentives (e.g., landlord/tenant), and other customer disincentives;
    - Leadership challenges;
    - Administrative caps on energy efficiency procurement spending;
    - Program administration models;
    - Methods of cost-effectiveness testing and estimations of efficiency potential, e.g., the use of the total resource test rather than a test that also accounts for environmental externalities (i.e., a version of the societal test);
    - Utility disincentives arising from traditional rate-making methods;
    - Others.

- **Opportunities**. What are the more promising opportunities for greater efficiency savings?
    - Where (what end uses, what location) are the most valuable energy efficiency resources, and do current policies and programs adequately secure them?
    - To what extent should energy efficiency services for electricity, natural gas, and unregulated fuel end uses be coordinated to produce "whole building" investments?
    - To what extent should energy efficiency services from regulated utility companies be coordinated and packaged with clean energy development, some of which is also sponsored by state clean energy funds?
    - To what extent should energy efficiency services from regulated utility companies be coordinated and packaged with short-term demand response services (i.e., load curtailment), which are also supported by utilities?

- To what extent does reform of retail electric pricing (toward real–time, critical-peak or other pricing structures that will, by more accurately signaling the economic costs of electricity production, elicit changes in customer demand) add to energy efficiency potential? If we cannot confidently answer this question now, should we conclude that this is an area that merits more analysis now?

2. Policy Instruments

- **The Question**: What are the more promising policy instruments, from among those already in use or under consideration and those not on our list, that can be employed to capture the added efficiency potential identified above?

- **A Framework for Policy Analysis**. The National Action Plan for Energy Efficiency[36] offers a framework for evaluating policy options and, within that framework, a broad set of recommendations and related options for policymakers to consider. Four of these, outlined below, encompass the planning, procurement, and policy alignment issues presented earlier.
  - Recognize energy efficiency as a high priority resource.
    - Establishing policies to establish energy efficiency as a priority resource.
    - Integrating energy efficiency into utility, state, and regional resource planning activities.
    - Quantifying and establishing the value of energy efficiency, considering energy savings, capacity savings, and environmental benefits, as appropriate.[37]
  - Make a strong, long-term commitment to implement cost-effective energy efficiency as a resource.
    - Establish appropriate cost-effectiveness tests for a portfolio of programs to reflect the long-term benefits of energy efficiency.
    - Establish the potential for long-term, cost effective energy efficiency savings by customer class through proven programs, innovative initiatives, and cutting-edge technologies.
    - Establish funding requirements for delivering long-term, cost-effective energy efficiency.
    - Develop long-term energy saving goals as part of energy planning processes.
    - Develop robust measurement and verification (M&V) procedures.
    - Designate which organization(s) is responsible for administering the energy efficiency programs.

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[36] See http://epa.gov/cleanenergy/actionplan/eeactionplan.htm.

[37] Two examples of these kinds of activities are (1) California's Energy Action Plan II, issued by the Energy Commission and Public Utilities Commission, which requires that all cost-effective energy efficiency is integrated into utilities' resource plans as the first option in the resource loading order and (2) the.Texas requirement that distribution utilities meet 10% of forecast load growth with efficiency resources. Due to the success of the program, the state is considering strengthening the resource standard in 2007.

        - Provide for frequent updates to energy resource plans to accommodate new information and technology.[38]
    - Provide sufficient, timely, and stable program funding to deliver energy efficiency where cost-effective.
        - Decide on and commit to a consistent way for program administrators to recover energy efficiency costs in a timely manner.
        - Establish funding mechanisms for energy efficiency from among the available options such as revenue requirement or resource procurement funding, system benefits charges, rate-basing, shared-savings, incentive mechanisms, etc.
        - Establish funding for multi-year periods.[39]
    - Modify policies to align utility incentives with the delivery of cost-effective energy efficiency and modify ratemaking practices to promote energy efficiency investments.
        - Address typical utility throughput incentive and remove other regulatory and management disincentives to energy efficiency.
        - Provide utility incentives for successful management of energy efficiency programs.
        - Include impact on adoption of energy efficiency as one of the goals of retail rate design, recognizing that it must be balanced with other objectives.
        - Eliminate rate designs that discourage energy efficiency by not increasing costs as customers consume more electricity or natural gas.
        - Adopt rate designs that encourage energy efficiency by considering the unique characteristics of each customer class and including partnering tariffs with other mechanisms that encourage energy efficiency, such as benefit sharing programs and on-bill financing.[40]

- **Policy Options.** The following are some possibilities to consider:
    - **Planning.** What kinds of exercises can be undertaken to identify energy efficiency resources that are cost-effective in relation to other resource choices, keeping in mind, as appropriate, resource adequacy needs?
        - What are the magnitude and scope of the planning effort? How does planning relate to actual procurement decisions?

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[38] A number of states and entities (e.g., NY, MA, VT, CA, and the Bonneville Power Administration) have specified the methods that must be used for cost-effectiveness testing. In the Pacific Northwest, Pacificorp incorporates efficiency as an element in its resource planning process and supply portfolio. Efficiency is included in planning tools as a shaped reduction in the forecasted load. The company's 2004 ten-year plan includes 250 aMW (average megawatts, a measure of energy) of efficiency with an additional 200 aMW if cost-effective.

[39] NYSERDA has five-year funding cycles through a system benefits charge. California IOUs are the program administrators, funded through a system benefits charge on three-year funding cycles.

[40] In Maryland, Baltimore Gas and Electric is operating under a seven-year decoupling mechanism. In the Pacific Northwest, Washington Gas and Northwest Natural Gas are decoupled. And in California, both the electric and natural gas IOUs are decoupled.

- What entities should bear planning responsibilities, and how should the plans of multiple entities relate to each other? How can planning address the disaggregated interests of entities in restructured energy markets? How can the unbundled values of avoided generation, transmission, and distribution investments be captured in the planning and, ultimately, procurement processes? Is there a role for a regional entity to oversee and coordinate state, utility, and RTO planning?
- What approaches to planning are appropriate? What methods should be employed? How should risks be evaluated and managed? What risks and benefits do our planning methods fail to account for (e.g., efficiency costs are not correlated with the cost of fossil fuels and construction materials)?
- The NEEP potential study employed the total resource test. Does that encompass the all the relevant avoidable costs, or should a test that also accounts for environmental externalities (i.e., a version of the societal test) be used to establish potential and cost-effectiveness?

o **Procurement**. How should resources, particularly energy efficiency, be procured? States may choose to reconsider the ways in which energy efficiency is offered to customers through the distribution companies or other means overseen by regulators.

- Should energy efficiency procurement be made an essential component of distribution service? Should the distribution company's overall role with respect to resource adequacy be reconsidered?[41] How should energy efficiency procurement relate to the design and provision of default service?
- Should energy efficiency be procured on a statewide basis, to provide for more consistency in services and services better targeted to yield system value independent of utility service territories? Is this more a matter of program design than of program delivery and, if so, does it mean simply that program designs should be standardized throughout states or even the region?
- Could a New England-wide energy efficiency entity provide more coordinated and targeted efficiency deployment than state- or utility-based approaches? Would this make more sense for certain program types or end uses than others?
- So long as there is additional cost-effective energy efficiency to be acquired, should monies from other sources such as forward capacity market and RGGI allowance auctions fund such investments, or should some of these funds be used to offset consumer funding of current energy efficiency programs?

[41] In Delaware, for example, regulators are considering how to integrate efficiency and resource adequacy into distribution planning. .The Delmarva Power proposal can be found at http://depsc.delaware.gov/electric/0728appl.pdf (April 12, 2007)

- Is energy efficiency procured at an average price of roughly 3 cents per kWh a "no regrets" strategy to deal with uncertainties and price pressures in the energy market?

- **Performance vs. Potential**. Given that, as a percentage of revenue or adjusted for inflation, spending for energy efficiency is below both the nominal and constant dollar levels of 14 years ago, what can we say about energy efficiency deployment in the region today generally?
  - Would simply spending more on energy efficiency in order to secure proportionately more savings address most of the issues raised in this paper and discussed at the *Retreat*?
  - Is an administratively-set cap on energy efficiency spending serving the long-term public interest, in light of current and expected conditions?
  - Are we smarter about energy efficiency spending today?
  - Are we more or less anxious today about alternatives to energy efficiency?
  - What fraction of all cost-effective energy efficiency are we achieving now, and what fraction is still to be captured?
- **Aligning Utility Financial Incentives with Public Policy Objectives.** Do traditional ratemaking methods pose a significant barrier to utility support for cost-effective energy efficiency and, if so, what reforms can be implemented to both undo this deterrent and protect consumers? Are such reforms necessary to maximizing energy efficiency savings?
  - What option or options make most sense for New England (e.g., decoupling, lost profits recovery, incentives, etc.)?
  - Does a utility's superior (or simply adequate) performance in acquiring energy efficiency, while subject to traditional (price-based) regulation, suggest that regulatory reform (to give better incentives for efficiency and least-cost outcomes)) is not needed?[42]
- **The Natural Gas Industry**. This paper has focused primarily on the electric system and its regulation; however, many of the policies discussed herein can be (and have been) adapted to the natural gas sector. Are there characteristics of the natural gas industry that distinguish it from the electric and call therefore for different approaches to its regulation and the procurement of energy efficiency?
- **Unregulated Fuels**. Should the scope of energy efficiency in this discussion include end uses driven by unregulated fuels (primarily fuel oil and propane) and, if so, are any policies and programs useful in the regulated environment applicable for these fuels?

[42] In a series of three orders this winter, the Washington Utilities and Transportation Commission variously adopted and rejected decoupling mechanisms for the state's three largest investor-owned utilities. In the case of Puget Power, the Commission found that, because the utility had achieved significant savings through efficiency efforts over the last decade, the potentially deleterious financial impacts of efficiency had not proven to a barrier. Consequently, the WUTC did not implement decoupling for Puget. It did, however, accept the other utilities' decoupling proposals, while acknowledging that there efficiency achievements were quite less than expected.

3. The Regional Perspective

- **Regional Objectives**. Should New England-wide goals, or targets, for energy efficiency be set through a regional planning process?
    - If so, what should the overall goal be (e.g., eliminate all load growth, reduce current demands for a specified percentage, or procure all cost-effective efficiency in the region?)?
    - How should the goals be specified (regional peak, sales, etc.)?
    - Should there be intra-regional targets for transmission-constrained or high load-growth areas?
    - How should environmental objectives factor into energy efficiency policy?
    - Would such targets need to be established by governors through a memorandum of understanding or similar instrument?
    - To what entities would the goals apply? To distribution companies or load-serving entities subject to state regulation, or would the targets serve only as policy guidance?

- **The State vs. Regional Perspective.** How much of the potential for more energy efficiency, and which of these policy instruments, should policymakers address at the state level? What would benefit from regional efforts? Regional efforts can take different forms:
    - Regional planning
        - To assist states in budgeting programs under their jurisdiction;
        - To identify locations where energy efficiency has the most value;
    - Active regional coordination
        - Consistent appliance and equipment efficiency standards;
        - Coordinated monitoring and verification procedures for energy efficiency programs
        - Sharing of program best practices
        - Consistency of program design and delivery across borders to reduce administration costs and to promote better customer awareness of and response to the programs
    - Regional mechanisms
        - Energy efficiency in the forward capacity market
        - Transmission tariff payments for energy efficiency serving reliability purposes

- Should the **regional scope** be broadened to include the eastern Canadian provinces in an effort to quantify and realize the goals of agreements on energy and greenhouse gas emissions made this year and earlier in the decade by the New England Governors and Eastern Canadian Premiers?

4. Next Steps

- **What next?** What steps do the participants of the April 27th meeting recommend that states (individually and together, through governors or agencies), the RTO, US EPA, regional stakeholders (including this planning group), or others take

next to advance discussion of these issues and to rapidly promote energy efficiency attainment throughout New England?

Appendix 1: Summary of Policy Status at State Level

	CT	ME	MA	NH	RI	VT
RGGI Participation	Y; up to 100% auction proposed	Y;100% auction proposed	Y;100% auction proposed	Y	Y	Y; 100% auction confirmed
Current EE funding levels – EE only (mils/kWh)	Technically 3 mils but actually 2 mils	Varies, with cap of 1.5 mils	2.5 mils	3 mils	2 mils	R: 4.96 mils C: 4.08 mils I: 2.93 mils
Recent or anticipated EE funding increase -- electric	P; SBC may return to earlier high of 3m/kWh	Y	P; SBC set at 2002 level; EE expansion possible	Y; SBC cap raised to $.003/kWh in 2005	N	Y; annual EEU budget increased to $30 mill. By 2008
Recent or anticipated EE funding increase -- gas	Y; additional increases expected in 2007	Y; 3% of revenues (certain gas cos.)	P; EE expansion possible	P; possible, pending IRP outcome	Y; SBC created in 2006	
Dynamic pricing for SOS	P; PUCT action proposed in bill	P; some discussion of pilot programs	P; investigation underway	P; investigation underway	P; new legislation authorizes some TOU rates	N/A
Utility incentives are aligned with EE delivery (incentives/dis incentives)	S; incentives exist	N	S; incentives exist	S; incentives exist	S,P; incentives exist & new incentives may be developed	Y; disincentives addressed (third party delivery of EE)
LCP/EE requirements for SOS	P; proposed in governor's bill	P; new process allows, but does require, EE in SOS.	P; investigation underway	Y; requirements updated for 2007 IRP	Y; implemen-tation is in development	N/A
New appliance standards	Y (2004); new (2007) standards proposed	N	Y (2005)	N	Y (2005)	Y (2006)
Least cost transmission planning	N	N		N; transmission planning inc. in IRP	N	P; implement-tation is in development
Expanding EE for unregulated fuels	P; rec. in climate plan				N	P; bill introduced
Anticipated FCM initiatives (state-level)	Y	Y				

KEY: Y = Policy/Action in place; N = Policy/Action not in place; P = Policy has been proposed or is pending; S = Some aspects of policy are in place

Appendix 2 State-specific Policies

Connecticut

RGGI	Current EE $	Elec. EE $ Increase	Gas EE $ Increase	Dynamic Pricing - SOS	Align Incentives	LCP/EE - SOS	Appliance Standards	Trans. Plan	Unreg Fuels	FCM
Y (100%)		P	Y	P	S	P	Y	N	N	Y

Y = In place N = Not in place P = Proposed/Pending S = Some implementation

CONNECTICUT

RGGI Participation
Connecticut has signed the RGGI MOU. The Governor is proposing a bill that will recommend up to 100% of carbon auction results be used for consumer benefit.[43]

NEG/ECP Climate Action Plan
Connecticut is a signatory to the 2001 New England Governors/Eastern Canadian Premiers' resolution[44] that commits the state to greenhouse gas reduction goals of a reduction to 10 percent below 1990 levels by 2010, at least 10 percent below 1990 levels by 2020, and in the long term, reductions "sufficient to eliminate any dangerous threat to the climate," representing reductions of 75 – 85 percent below 2001 levels.

EE SBC
The electric SBC is collected at the rate of 3 mils/kWh. Close to 1/3 of that has been diverted by the legislature for a complicated securitization arrangement that supported an increase in the general fund several years ago. This diversion/securitization was expected to last seven years beginning part-way through 2005.[45]

Recent EE funding increase -- electric
The Governor has proposed restoring the electric C&LM charge to 3mils/kWh, by adding over $26 million from the general fund during each of the next 3 years.[46]

Recent EE funding increase -- gas
The 2005 Energy Independence Act requires gas companies to submit comprehensive plans and participate as members on the Energy Conservation Management Board. Gas spending has increased from around $900,000 in 2005 to around $2.7 million in 2006, and increases are anticipated for 2007. Funding for gas programs is not done via SBC but through rates.[47]

Dynamic Pricing

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[43] http://www.ct.gov/governorrell/cwp/view.asp?A=2791&Q=332994
[44] Resolution 26-4.
[45] Daniel Violette and Richard Sedano. January 2006. Demand-side Management: Determining Appropriate Spending Levels and Cost-Effectiveness Testing. Appendix A: Summaries by Jurisdiction. Downloaded on 3/12/07 from http://www.raponline.org/showpdf.asp?PDF_URL=%22Pubs/CAMPUT_Appendix_A_Summaries_Final_Revised.pdf%22
[46] HB 7081 of the 2007 legislative session, sec 57a. See http://www.cga.ct.gov/2007/TOB/H/2007HB-07081-R00-HB.htm
[47] Personal communication with Dan Sosland, Environment Northeast, 3/1/2007

Advanced metering and dynamic pricing are addressed in proposed [2007] legislation, including a provision for $15 million investment in meters. Revisions to legislation are expected, but some action on dynamic pricing is likely.[48]

Aligning Utility Incentives with EE Delivery
The Governor's proposed Energy Vision bill would require the state Department of Energy to investigate different options for EE program delivery, including the use of a statewide entity.[49] In 2005, the Connecticut legislature required the DPUC to investigate decoupling. The DPUC subsequently investigated and rejected any changes to current ratemaking mechanisms in place for electric or gas utilities. (Two gas utilities currently have lost revenue recovery mechanisms, and electric utilities receive performance incentives.)

LCP/EE for SOS
The Governor's proposed Energy Vision bill would require distribution utilities to conduct IRP-type planning for standard offer service, integrating analysis of supply and demand side resources.[50]

New appliance standards
2004 legislation authorizes the Department of Public Utility Control to establish efficiency standards for products not specified by statute. The 2004 legislation also updated standards for a wide range of products, including air conditioners and residential furnaces.[51] New standards have been proposed in HB 7098 of the current [2007] legislative session; the bill has been referred to the Joint Committee on Energy and Technology.[52]

Expanding EE for unregulated fuels
DEP is interested, and it is part of the climate plan. Discussions indicate that small companies that provide both oil service and delivery might be interested but that national trade association may have dampening effect.[53]

FCM
CT plans to submit a block of EE programs into the FCM and use payments as source of funds for other EE programs.[54]

[48] Personal communication with Chris James, CT DEP, 3/09.07.
[49] HB 7081 of the 2007 legislative session, sec 16. See http://www.cga.ct.gov/2007/TOB/H/2007HB-07081-R00-HB.htm
[50] HB 7081 of the 2007 legislative session, sec 56. See http://www.cga.ct.gov/2007/TOB/H/2007HB-07081-R00-HB.htm
[51] Public Act 04-85 (d)3 of the 2004 legislative session. See http://www.cga.ct.gov/2004/act/Pa/2004PA-00085-R00SB-00145-PA.htm
[52] HB 7098 of the 2007 legislative session. See http://www.cga.ct.gov/asp/CGABillStatus/CGAbillstatus.asp?selBillType=Bill&bill_num=HB7098
[53] Personal communication with Chris James, Connecticut DEP, 3/9/07.
[54] Ibid.

Maine

RGGI	Current EE $	Elec. EE $ Increase	Gas EE $ Increase	Dynamic Pricing - SOS	Align Incentives	LCP/EE - SOS	Appliance Standards	Trans. Plan	Unreg Fuels	FCM
Y (100%)	Up to 1.5 mils	Y	Y	P	N	P	N	P		Y

Y = In place N = Not in place P = Proposed/Pending S = Some implementation

MAINE

RGGI Participation
Maine has signed the RGGI MOU. A bill has been introduced in the Legislature that calls for 100% auctioning of allowances, with all proceeds to be used for energy efficiency and other programs that reduce greenhouse gasses.[55] Governor Baldacci plans to submit a competing bill that would also call for a 100% auction, but would use some of the auction funds to offset paper mills' cost of compliance.

NEG/ECP Climate Action Plan
Maine has adopted, by statute[56] the 2001 GHG reduction goals of the New England Governors/Eastern Canadian Premiers[57] that commits the state to greenhouse gas reduction goals of a reduction to 1990 levels by 2010, to at least 10 percent below 1990 levels by 2020, and in the long term, reductions "sufficient to eliminate any dangerous threat to the climate," representing reductions from 1990 levels of 75 – 85 percent below 2001 levels."

Recent EE funding increase – electric
EE funding is expected to increase from $9.6 million in 2006 to $17 million in 2010. This is due partly to the expiration of CMP contracts that had been funded from the SBC, and partly due to a ramping up of utility SBC funding until all utilities reach the statutory cap of 1.5 mils/kWh.[58]

Recent EE funding increase -- gas
2005 legislation mandates that all gas utilities serving more than 5,000 residential customers must spend at least 3% of delivery revenues on cost-effective energy efficiency programs. Prudently occurred costs are recovered in rates.[59]

Dynamic Pricing for Standard Offer Service
Commission staff has discussed developing voluntary dynamic pricing programs for SOS customers with advanced metering infrastructure.[60]

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[55] LD 1090 of the 2007 legislative session. See http://janus.state.me.us/legis/LawMakerWeb/externalsiteframe.asp?ID=280023809&LD=1090&Type=1&SessionID=7.
[56] PL 2003 Chapter 237, 38 M.R.S.A. Sec. 574-579.
[57] Resolution 26-4
[58] Results from Docket 2006-446. See http://mpuc.informe.org/easyfile/cache/easyfile_doc183920.PDF, p. 5.
[59] LD 397 of the 2005 legislative session. See http://janus.state.me.us/legis/LawMakerWeb/externalsiteframe.asp?ID=280015050&LD=397&Type=1&SessionID=6.
[60] Personal correspondence with Lotte Schlegel, Maine PUC, 3/14/07.

LCP/EE for SOS

2006 legislation[61] allows energy efficiency to be used in standard offer procurement. In Maine, the PUC is responsible for procuring standard offer service. In October 2006, the PUC solicited standard offer bids[62] that bundled supply and demand-side resources together. Bids were solicited for contracts of varying length. (Supply-only bids were also allowed.) 1/3 of standard offer service was to be procured from the resulting bids, for service beginning March 1, 2007. No bids containing demand-side resources were selected.[63]

Least Cost Transmission Planning

Transmission congestion and planning has been discussed at meetings of the Maine Energy Council.[64]

FCM

The Maine PUC plans to establish a load control mechanism to allow Maine consumers to participate in the FCM.[65]

[61] LD 2041 of the 2006 legislative session. See http://janus.state.me.us/legis/LawMakerWeb/externalsiteframe.asp?ID=280020488&LD=2041&Type=1&SessionID=06.

[62] The RFP process was developed in Docket 2006-591. See http://www.maine.gov/mpuc/industries/electricity/sosmall0306/rfp_packages1006/cmpbhe_mar07.htm.

[63] 1/9/07 Order in Docket No. 2005-591. See www.**maine**.gov/m**puc**/industries/electricity/sosmall0306/2006-585ocmp.doc

[64] Personal correspondence with Lotte Schlegel, Maine PUC, 3/14/07. Related documents are available at http://www.maine.gov/mpuc/staying_informed/legislative/Maine%20Energy%20Council/MECMeetings.html.

[65] Results from Docket 2006-446. See http://mpuc.informe.org/easyfile/cache/easyfile_doc183920.PDF, p. 3

Massachusetts

RGGI	Current EE $	Elec. EE $ Increase	Gas EE $ Increase	Dynamic Pricing - SOS	Align Incentives	LCP/EE - SOS	Appliance Standards	Trans. Plan	Unreg Fuels	FCM
Y (100%)	2.5 mils	P	P	P	S	P	Y (2005)			

Y = In place N = Not in place P = Proposed/Pending S = Some implementation

MASSACHUSETTS

RGGI Participation
Massachusetts governor Deval Patrick has signed the RGGI and announced that 100% of allowances will be auctioned, with proceeds used to fund energy efficiency, renewable energy, demand response, and combined heat and power programs.[66]

NEG/ECP Climate Action Plan
Massachusetts is a signatory to the 2001 New England Governors/Eastern Canadian Premiers' resolution[67] that commits the state to greenhouse gas reduction goals of a reduction to 10 percent below 1990 levels by 2010, at least 10 percent below 1990 levels by 2020, and in the long term, reductions "sufficient to eliminate any dangerous threat to the climate," representing reductions of 75 – 85 percent below 2001 levels.

Increased funding for EE – gas and electric
Proposals that would increase funding for energy efficiency programs will be considered by the legislature this session.[68]

Dynamic Pricing for Standard Offer Service
In October 2006, Division of Energy Resources (DOER) petitioned the Department of Telecommunications and Energy (DTE) to open an investigation into whether the current pricing structure for basic service fulfills the requirement of the Restructuring Act to provide electricity buyers and sellers with appropriate price signals.[69] DOER has proposed that residential and small C&I customers be provided with TOU rates. This issue is under investigation in Docket 06-101.[70]

Aligning Utility Incentives with EE Delivery
Massachusetts' electric utilities and one gas utility currently earn performance incentives. Incentives are awarded on a program-by-program basis, and incentive mechanisms are updated periodically.[71] There are no mechanisms currently used to address utility disincentives to procure EE, although DOER has observed that it will be difficult to expand EE funding further without addressing utility disincentives.[72]

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[66] See 1/18/07 press release at http://www.mass.gov/?pageID=pressreleases&agId=Agov3&prModName=gov3pressrelease&prFile=reduce_greenhouse_gases011807.xml
[67] Resolution 26-4.
[68] Personal conversation with DOER staff on 3/7/07
[69] See http://www.mass.gov/Eoca/docs/dte/electric/06-101/103106dtepetit.pdf.
[70] A list of documents related to Docket 06-101 is available at http://db.state.ma.us/dpu/qorders/frmDocketSingle.asp?docknum=06-101.
[71] See, for example, Docket 98-100 and Docket 04-11.
[72] Personal conversation with DOER staff on 3/7/07

LCP/EE for SOS
In December 2006, DOER petitioned DTE to open an investigation into the creation of an energy efficiency performance standard for standard offer service customers.[73] This issue is under investigation in Docket 06-113.[74]

New Appliance Standards
2005 legislation required the DOER to enact new standards for a variety of products, including residential furnaces.[75]

[73] See http://www.neep.org/newsletter/4Q2006/DOER_EEPS_petition.pdf.
[74] A list of documents related to Docket 06-113 is available at http://db.state.ma.us/dpu/qorders/frmDocketSingle.asp?docknum=06-113.
[75] M.G.L. Ch25B Sec. 5. See http://www.mass.gov/legis/laws/mgl/25b-5.htm

New Hampshire

RGGI	Current EE $	Elec. EE $ Increase	Gas EE $ Increase	Dynamic Pricing - SOS	Align Incentives	LCP/EE - SOS	Appliance Standards	Trans. Plan	Unreg Fuels	FCM
Y (100%)	3 mils	Y	P	P	S	Y	N	N		

Y = In place N = Not in place P = Proposed/Pending S = Some implementation

NEW HAMPSHIRE

RGGI Participation
New Hampshire has signed the RGGI MOU. New Hampshire Department of Environmental Services is developing the details of implementation. Related documents are available at http://www.des.state.nh.us/ard/climatechange/rggi.htm.

NEG/ECP Climate Action Plan
New Hampshire is a signatory to the 2001 New England Governors/Eastern Canadian Premiers' resolution[76] that commits the state to greenhouse gas reduction goals of a reduction to 10 percent below 1990 levels by 2010, at least 10 percent below 1990 levels by 2020, and in the long term, reductions "sufficient to eliminate any dangerous threat to the climate," representing reductions of 75 – 85 percent below 2001 levels.

Recent EE funding increase -- electric
2005 statute raised the SBC from $.002/kWh to $.003/kWh, and extended the SBC through 2008.[77] Proposed 2007 legislation would repeal the sunset provision of the SBC.[78]

Recent EE funding increase – gas
There have been no recent increases, but a docket has been opened to address IRP requirements for two gas utilities. This proceeding could result in a requirement that the gas utilities compare supply and demand side costs. This analysis would then drive the DSM budget-setting process and could result in increased funding for gas EE programs.[79]

Dynamic Pricing for Standard Offer Service
An Order is anticipated addressing the use of time-based pricing (including TOU, critical peak, and dynamic pricing). This investigation is in response to EPACT 2005 and is addressed in Docket DE 06-061.[80]

LCP/EE for SOS
A November 2006 Order clarified that PSNH must conduct Least Cost Planning for procurement of its standard offer service, and clarified what would be required in the next LCP filing (scheduled for September 2007). PSNH had last filed an LCP in 2004, when the applicability of LCP rules in a semi-restructured regulatory environment was unclear.

[76] Resolution 26-4.
[77] New Hampshire Statutes, Chapter 369-B:3(IV)(b)(6). See http://www.gencourt.state.nh.us/rsa/html/XXXIV/374-F/374-F-4.htm
[78] HB 0119 of the 2007 legislative session. See http://www.gencourt.state.nh.us/legislation/2007/hb0119.html
[79] Personal conversation with George McCloskey, NHPUC, 3/7/2007.
[80] Ibid.

New requirements for the 2007 LCP will include an analysis of additional demand-side programs and a description of the process used to integrate demand side options with supply side resources. Analysis must include programs administered by ISO-New England that are eligible for payment in the FCM. See November 8, 2006 Order in Docket DE-04-072, p.23.

Least Cost Transmission Planning
Statute requires an assessment of transmission options to be included in utilities' IRPs.[81]

[81] New Hampshire Revised Statutes Annotated 378:38. See http://www.gencourt.state.nh.us/rsa/html/XXXIV/378/378-38.htm

Rhode Island

RGGI	Current EE $	Elec. EE $ Increase	Gas EE $ Increase	Dynamic Pricing - SOS	Align Incentives	LCP/EE - SOS	Appliance Standards	Trans. Plan	Unreg Fuels	FCM
Y (100%)	2 mils	N	Y	P	S,P	Y	Y (2005)	N	N	

Y = In place N = Not in place P = Proposed/Pending S = Some implementation

RHODE ISLAND

RGGI Participation
Rhode Island has joined RGGI.[82]

NEG/ECP Climate Action Plan
Rhode Island is a signatory to the 2001 New England Governors/Eastern Canadian Premiers' resolution[83] that commits the state to greenhouse gas reduction goals of a reduction to 10 percent below 1990 levels by 2010, at least 10 percent below 1990 levels by 2020, and in the long term, reductions "sufficient to eliminate any dangerous threat to the climate," representing reductions of 75 – 85 percent below 2001 levels.

Recent EE funding increase – gas
2006 legislation created an SBC for gas utilities, up to $0.15 per decatherm, for energy conservation programs.[84] NGrid has proposed an SBC of $.06 per decatherm for 2007, which represents a .04% increase over EE funding levels currently recovered in rates. Docket 3790 has been opened to investigate NGrid's 2007 gas EE programs.[85]

Dynamic Pricing for Standard Offer Service
The 2006 least-cost procurement statute (see below) authorizes TOU rates for non-residential standard offer customers, and TOU pilot programs for residential standard offer customers.[86]

Aligning Utility Incentives with EE Delivery
The 2006 least-cost procurement statute (see below) requires the commission to establish an incentive plan based on gas and electric utilities' success in reducing costs and variability through procurement portfolios.[87]

LCP/EE for SOS
2006 legislation mandates a least cost procurement process for standard offer service. This process must include EE procurement. The commissioner of the office of energy resources and the energy efficiency and resources management council are required to submit implementation

[82] See Gov. Carcieri's 1/30/07 State of the State Address at http://www.governor.ri.gov/other/statemessage07.php
[83] Resolution 26-4.
[84] See http://www.rilin.state.ri.us/Billtext/BillText06/HouseText06/H8025Aaa.pdf, p. 17.
[85] Related documents are available at http://www.ripuc.state.ri.us/eventsactions/docket/3790page.html
[86] Rhode Island General Statutes 39-1-27.8. See http://www.rilin.state.ri.us/Statutes/TITLE39/39-1/39-1-27.8.HTM.
[87] Rhode Island General Statutes 39-1-27.7. See http://www.rilin.state.ri.us/Statutes/TITLE39/39-1/39-1-27.7.HTM.

recommendations to the Commission in March 2008. The Commission will issue standards by June 2008. Plans are to be filed by electric utilities in September 2008.[88]

New appliance standards
The Energy and Consumer Savings Act of 2005 adopted standards for 13 types of appliances, including air conditioners and residential furnaces.[89]

[88] Rhode Island General Statutes 39-1-27.7.-27.8. See http://www.rilin.state.ri.us/Statutes/TITLE39/39-1/39-1-27.7.HTM and http://www.rilin.state.ri.us/Statutes/TITLE39/39-1/39-1-27.8.HTM.
[89] H5307 Sub B of the 2005 legislature. See http://www.rilin.state.ri.us/Statutes/TITLE39/39-27/39-27-5.HTM. See also http://www.rilin.state.ri.us/Statutes/TITLE39/39-27/39-27-5.HTM

Vermont

RGGI	Current EE $	Elec. EE $ Increase	Gas EE $ Increase	Dynamic Pricing - SOS	Align Incentives	LCP/EE - SOS	Appliance Standards	Trans. Plan	Unreg Fuels	FCM
Y (100%)	2.93-4.96 mils	Y		N/A	Y	N/A	Y (2006)	P	P	

Y = In place N = Not in place P = Proposed/Pending S = Some implementation

VERMONT

RGGI Participation
Vermont has signed the RGGI MOU. 2006 statute requires that 100% of allowances be auctioned. Proceeds will be used to optimize consumer benefits.[90]

NEG/ECP Climate Action Plan
Vermont is a signatory to the 2001 New England Governors/Eastern Canadian Premiers' resolution[91] that commits the state to greenhouse gas reduction goals of a reduction to 10 percent below 1990 levels by 2010, at least 10 percent below 1990 levels by 2020, and in the long term, reductions "sufficient to eliminate any dangerous threat to the climate," representing reductions of 75 – 85 percent below 2001 levels.

Recent EE funding increase -- electric
2005 legislation ("Act 61') removed a preexisting budgetary cap on SBC funding in Vermont.[92] SBC funding is now established by the PSB, which is required by statute to consider both cost-effective potential and rate impacts when setting the optimal funding levels. A 2006 Order established new funding amounts for 2006-2008, beginning at $19.5 million in 2006 and increasing to $30.75 million in 2008.[93]

Aligning Utility Incentives with EE Delivery
In 2006 a decoupling ("alternative ratemaking") mechanism was approved for Green Mountain Power.[94]
Most EE is administered by a statewide third party entity, the Energy Efficiency Utility. Some utility-administered EE (resulting from Distribution Utility Planning) is subject to lost recovery mechanisms.

New appliance standards
2006 legislation established minimum efficiency standards for certain products, including residential furnaces.[95]

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[90] Act 123 of the 2005-2006 legislative session. See http://www.leg.state.vt.us/docs/legdoc.cfm?URL=/docs/2006/acts/ACT123.HTM
[91] Resolution 26-4.
[92] Act 61 of the 2005 legislative session amended 30 V.S.A. § 209 (d)(4). See http://www.leg.state.vt.us/statutes/fullsection.cfm?Title=30&Chapter=005&Section=00209
[93] Vermont PSB Order of August 2, 2006. p. 1-5. See http://www.state.vt.us/psb/document/ElectricInitiatives/EEU_Budget_Order.pdf
[94] Vermont PSB Order of December 22, 2006 in Docket 7176. See http://www.state.vt.us/psb/orders/2006/files/7175-7176finalorder.pdf
[95] Act 152 of the 2006 legislative session. See http://www.leg.state.vt.us/docs/legdoc.cfm?URL=/docs/2006/acts/ACT152.HTM

Transmission Planning
Recent VT statute mandates that transmission planning consider energy efficiency equal to wires and non/wires solutions. The statute also requires utilities to file 10-year transmission plans that evaluate non-wires solutions to transmission constraints. Plans must be submitted at least once every three years.[96] Implementation issues will be resolved in PSB Docket 7081. An MOU has been submitted but not adopted.[97] Documents related to Docket 7081 can be found at http://www.state.vt.us/psb/docket7081.htm.

EE Programs for unregulated fuels
SB 94 of the current [2007] legislature would introduce a "nega-rate" charge on petroleum, propane, and other heating fuels. Funds would be used to support a "Thermal Efficiency Utility", which would implement EE programs for currently unregulated heating fuels.[98] A 2006 statute directed the Vermont Department of Public Service to conduct a study analyzing the savings potential from energy efficiency programs for oil, propane, kerosene, and wood fuels. The full report is available at http://publicservice.vermont.gov/pub/other/allfuelstudyfinalreport.pdf.

[96] 30 V.S.A. 218(d). See http://www.leg.state.vt.us/statutes/fullsection.cfm?Title=30&Chapter=005&Section=00218c.
[97] See http://www.state.vt.us/psb/document/majorongoing/7081mou/7081mou.pdf.
[98] SB 94 of the 2007 legislative session. See http://www.leg.state.vt.us/docs/legdoc.cfm?URL=/docs/2008/bills/intro/S-094.HTM