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The Northeast Utilities System

ORIGINAL
N.H.P.U.C. Case No. DE-09-170
Exhibit No. #1
Witness
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September 30, 2009

Debra A Howland
Executive Director and Secretary
New Hampshire Public Utilities Commission
Eight Old Suncook Road, Building One
Concord, New Hampshire 03301-7319

Re: CORE Energy Efficiency Programs
Docket No. DE 09-170

Dear Secretary Howland:

Enclosed please find an original and six copies of the filing a CORE New Hampshire Energy Efficiency Programs to be offered in 2010. The Electric Utilities request the Commission to open a proceeding and to schedule a pre-hearing conference. Based upon discussions among the Staff and other interested parties, there may not be enough time for the record to be developed and for the Commission to render a decision before December 31, 2009. If that scenario comes to pass, the Electric Utilities hereby request that the 2009 CORE be allowed to continue in 2010 until a decision is made by the Commission.

Copies have been provided to the persons on the attached service list.

Very truly yours,

Gerald M. Eaton

Gerald M. Eaton
Senior Counsel

Enclosures
cc: Service List

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NEW HAMPSHIRE ELECTRIC UTILITIES
BEFORE THE
NEW HAMPSHIRE PUBLIC UTILITIES COMMISSION

2010 CORE New Hampshire Energy Efficiency Programs

Granite State Electric Company d/b/a National Grid
New Hampshire Electric Cooperative, Inc.
Public Service Company of New Hampshire
Unitil Energy Systems, Inc.

NHPUC Docket No.
DE 09-170

SEPTEMBER 30, 2009

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I. **INTRODUCTION**

This filing for the 2010 CORE Energy Efficiency Programs is being made jointly by Granite State Electric Company d/b/a National Grid, New Hampshire Electric Cooperative, Inc., Public Service Company of New Hampshire and Unitil Energy Systems, Inc. (referred to throughout the remainder of this document as "the NH Electric Utilities"). This Introduction is an overview of the programs and highlights of the results achieved to date along with overarching operational proposals for the coming year. The remainder of the filing includes descriptions of the programs, individual program budgets and goals, and utility specific program offerings.

A. Overview of CORE Energy Efficiency Programs

The CORE Energy Efficiency Programs were born out of the Energy Efficiency Working Group recommendations (Docket No. DR 96-150) that were developed between May 1998 and June 1999 and largely approved by the Commission in November 2000. Thereafter, the NH Electric Utilities, Commission Staff, and other interested parties held numerous technical sessions and settlement talks and made many filings before they received final approval from the Commission in May 2002 to launch the CORE Programs. This represented the first time that a coordinated effort had been made by the electric utilities to offer the same programs statewide.

There are eight CORE programs providing products and services tailored for business, residential and income-eligible customers or members[1]. Each year the NH Electric Utilities work together to review the CORE Programs, make adjustments and improvements as needed or suggested by customers, interested parties, Staff and program administrators. The plans also include utility-specific programs that are used to test certain aspects of energy efficiency and to try new programs that may be pertinent to one utility's customers or to test new technologies.

Since the introduction of the CORE Programs in June 2002, the NH Electric Utilities have reported program results quarterly. In the beginning, results were slow in coming, but customer demand for energy efficiency products and services has steadily grown to the point where, today, the NH electric utilities are making commitments for projects that will be completed next year and the year after.

The CORE Energy Efficiency Programs in place today have been thoughtfully developed

[1] Hereinafter the word "customer" will be understood to mean both customers and NHEC members.

and enhanced by many different parties since 1998. The results of the CORE Energy Efficiency Programs since their inception on June 1, 2002, through December 31, 2008, have consistently exceeded expectations. Key benchmarks highlighting the results include:

- The programs have saved 6.1 billion lifetime kWh – enough energy to power the city of Concord for 16 years!

- Saving 6.1 billion kWh is equivalent to saving $955 million at today's average[2] cost of 14.388 ¢/kWh – benefiting both customers and the NH economy. Based on CORE Program expenditures, this represents a return for customers of $8 for every program dollar invested.

- We have provided customers with 474,000 efficiency products or services and reached customers in every city and town served by the NH Electric Utilities. In addition we have provided training and information through customer seminars, point-of-sale displays, brochures, and catalogs to tens of thousands more.

- Reducing customers' energy needs has the added benefit of reducing power plant emissions. Based on the regional dispatch of plants, we will reduce emissions of CO_2, SO_2, and NO_X by 3.7 million tons – equivalent to the annual emissions of more than 780,000 cars.

New Hampshire CORE Energy Efficiency Programs Results Summary							
	2003	2004	2005	2006	2007	2008	Total
Lifetime kWh Savings (Million)	1,368	925	1,022	973	997	811	6,096
Customers Served	59,699	51,136	81,581	86,555	86,113	109,155	474,239
Dollars Saved (Millions)	$217.1	$146.8	$162.2	$154.4	$158.2	$116.8	$955.5
Emissions Reductions (Tons)	1,036,277	546,431	603,754	539,520	552,982	450,100	3,729,064
Lifetime kWH Cost (Cents)	1.70	1.80	1.95	1.95	1.90	2.36	1.93

Table I.1 – CORE Program Results Summary[3]

The CORE Programs have saved energy at an average cost of approximately 2.0 cents per lifetime kWh – as compared to the average retail price of 14.388 cents/kWh[4]. As energy costs continue to increase, these comparisons become even more compelling. While the NH Electric Utilities are proud of the results achieved to-date, they are very much aware of the need to be looking ahead and to work with Staff and other interested parties to find opportunities to improve the quality and effectiveness of the CORE programs.

[2] Average cost used for 2003-2007 was 15.87 ¢/kWh, Used 14.388¢/kWh for 2008.

[3] C&I Measure Life adjustments were made in 2008, decreasing the Lifetime kWh Savings and increasing the Lifetime kWh Costs (e.g., New Construction measure life went from 20 to 15 years).

[4] OEP's "Average Fuel Prices as of September 2, 2009", http://www.nh.gov/oep/programs/energy/fuelprices.htm.

B. Program Funding

Initially, the NH CORE Energy Efficiency Programs were funded solely by a portion of the System Benefits Charge on customer's bills. In recent years the budgets have been supplemented by ISO-NE's Forward Capacity Market and impacted by state law.

ISO-NE Other Demand Resource Transition Period Payments[5]
ISO-NE has implemented the Forward Capacity Market, with the first Commitment Period being June 1, 2010 through May 31, 2011. All generation and demand resources installed after June 16, 2006, have been eligible to receive capacity payments in accordance with ISO-NE's Market Rules. The New Hampshire electric utilities have offered the demand savings resulting from the CORE NH Energy Efficiency Programs to ISO-NE for capacity payments. Estimated ISO-NE payments for 2010 have been included in the 2010 CORE Energy Efficiency Program budgets. These FCM payments were split first 14% for Home Energy Assistance (HEA) and of the remainder, 70% went for C&I and 30% for Residential programs.

Senate Bill 228 Budget Impact
The 2010 budgets for NHEC and PSNH no longer include a reduction for the Special Winter Electric Assistance Program, as a result of Senate Bill 228 (2005 N.H. Laws Ch. 298). During 2006, this bill provided for reallocation of certain SBC funds otherwise reserved for energy efficiency programs to the Special Winter Electric Assistance Program. Senate Bill 228 allows a utility that required funding for this special program to "reduce its energy efficiency expenditures in equal installments over a period of 3 years by the equivalent total amount utilized to fund the temporary emergency measures". The third and final year payment was made during 2009 and does not affect the 2010 budgets.

New Hampshire CORE Energy Efficiency Programs 2010 Program Funding					
	NGRID	NHEC	PSNH	UNITIL	Total
1. **Initial Energy Efficiency Funding**	$1,264,124	$1,284,204	$14,059,526	$2,577,970	$19,185,824
2. + ISO-NE FCM Proceeds	$99,726	$37,674	$1,200,000	$200,000	$1,537,400
3. **Total Energy Efficiency Funding**	**$1,363,850**	**$1,321,878**	**$15,259,526**	**$2,777,970**	**$20,723,224**

Table I.2 – 2010 Program Funding

[5] https://www.iso-neprograms.com/login/

NH has additional funding mechanisms in various stages of implementation that have somewhat different, yet similar, goals as the SBC Energy Efficiency Funding. As these efforts are implemented and managed by the NHPUC Office of Sustainable Energy and the NH Office of Energy and Planning, the NH Electric Utilities stand ready to assist the NHPUC and OEP as needed to help deliver additional services to NH residents.

House Bill 1434, Regional Greenhouse Gas Emissions Reductions Fund[6]

The NH Electric Utilities recognize that House Bill 1434 (2008 N.H. Laws Ch. 182) authorizes the use of the Greenhouse Gas Emissions Reduction Fund to support energy efficiency, conservation, and demand response programs to reduce greenhouse gas emissions generated within the state. The success of the New Hampshire CORE Energy Efficiency Programs demonstrates that the NH Electric Utilities are well positioned to provide assistance to the Sustainable Energy Division in the discharge of its responsibilities as they relate to the cost-effective implementation of programs to reduce greenhouse gas emissions. The existing CORE and Utility Specific Programs include a broad range of measures that cost-effectively address the program objectives outlined in HB 1434. The NH Electric Utilities submitted a proposal for RGGI funding to further expand the NH CORE Energy Efficiency Programs in areas that will complement and enhance the savings potential already being achieved through the application of the System Benefits Charge. This proposal was approved in August for a July 2009-June 2010 time period. The Executive Summary of the RGGI funded expansion of the CORE programs is included in Attachment I.

American Reinvestment and Recovery Act

The NH Electric Utilities held initial discussions with staff at the Governor's Office of Energy & Planning to discuss opportunities of collaborating on ARRA funded projects. Preliminary discussions have identified potential opportunities with respect to incenting additional appliances as part of the Energy Star Appliance Program and weatherization via the Home Energy Assistance and NH Home Performance with Energy Star Programs. The utilities will continue discussing these collaboration opportunities and determine how we can help provide effective solutions for NH citizens.

Renewable Energy Portfolio Standards[7]

The NH Electric Utilities also believe they can play a significant role in the efficient use of the incentives that are available for renewable energy systems. The effectiveness and scope of the benefits produced by the renewable energy fund can be increased through the combination of renewable energy systems with end-use efficiency measures that are typically more cost-effective to implement. End-use efficiency improvements, when combined with renewable energy systems, have the potential to drive customers toward net zero energy consumption. A combined programmatic approach has the potential to raise customer awareness and participation in projects which include both energy efficiency measures and renewable energy systems. In addition, this combined approach offers the opportunity to expand the number of customers who can be served by the

[6] http://www.gencourt.state.nh.us/legislation/2008/hb1434.html
[7] http://www.gencourt.state.nh.us/legislation/2008/hb1628.html

renewable energy fund. This is because the end-use efficiency improvements can reduce energy demand resulting in smaller renewable system capacity requirements.

C. Evolving Nature of the CORE Programs

While the program names and the customers they serve have not changed[8], the CORE programs themselves are continuing to evolve in response to changing technology, market conditions, program evaluations, and new standards, as well as input from customers and other interested parties. The following examples illustrate this point:

- Technical Potential Study: During 2008 and into 2009, the Commission employed an independent consultant to conduct a Technical Potential Study in order to determine remaining energy efficiency opportunities[9] in New Hampshire. The results of the study indicate that "*there is still significant savings potential in New Hampshire for cost effective electric and gas energy-efficiency measures and practices (and associated oil and propane savings)*". The study also determined that the current CORE Energy Efficiency Programs "*have been successful and have saved a substantial amount of energy*" and "*Many of the programs have and are continuing to perform quite well in terms of cost per unit of energy saved and customer participation.*" These comments suggest that the CORE Energy Efficiency Programs are well positioned to capture energy savings because they possess the breadth and depth to address the full range of potential opportunities to cost-effectively install energy efficiency measures. Indeed, it was found that "*nearly all of the most cost effective energy efficiency measures are included in current programs in some manner*".
  In addition to these positive comments about the CORE Energy Efficiency Programs, the report goes on to make the following recommendation: *"Expanding the number and types of products and services available through the existing residential energy efficiency programs, and promotion of those programs to include a larger number of potential participants may lead to increased overall energy savings."*

  The following two charts highlight the projected energy savings identified in the study along with the estimated costs to achieve them. The next two charts contain the Residential and Commercial sector electric energy efficiency opportunities, overlaid with information on how the CORE Programs are directed toward addressing them. Attachment J contains these and additional charts created from data presented in this study.

[8] In 2010, The Utilities are proposoingto rename the Home Energy Solutions Program.

[9] The study, Additional Opportunities for Energy Efficiency in New Hampshire, can be found at the NH PUC website at www.nh.gov.

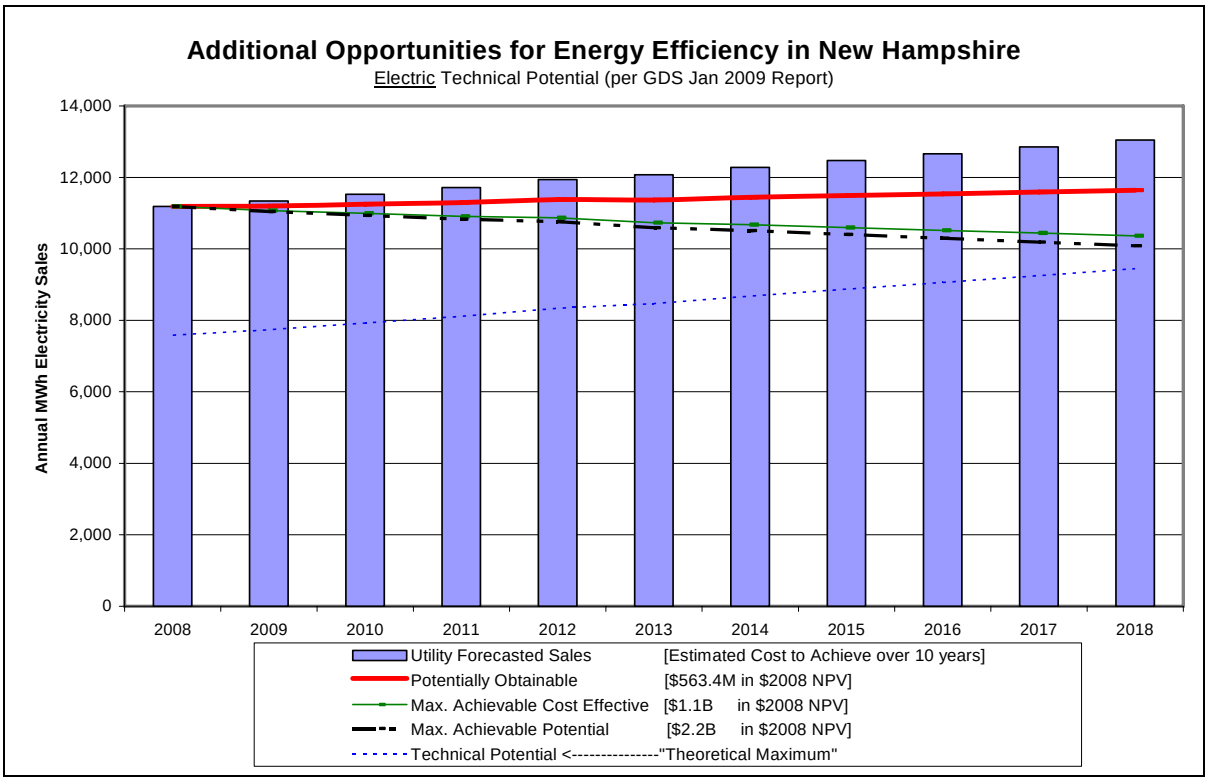


Figure 1: Chart of electric forecasted sales with technical potential scenarios

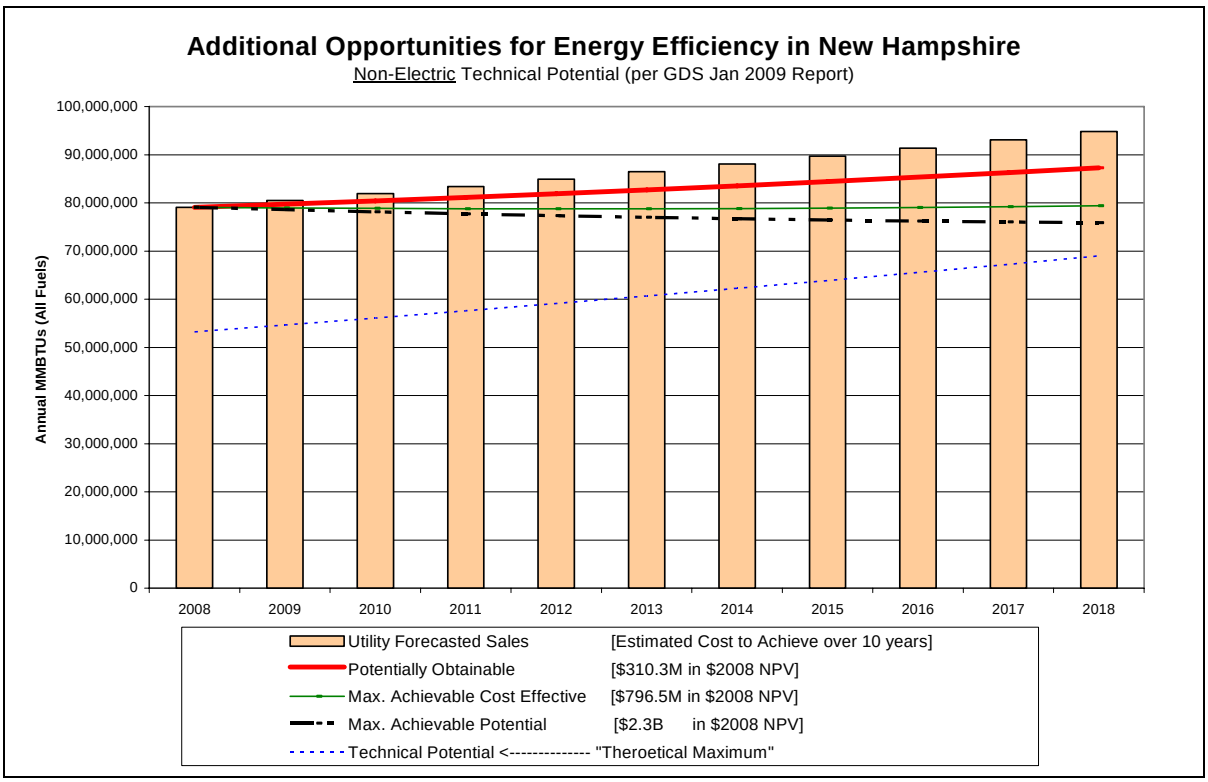


Figure 2: Chart of fossil fuel forecasted sales with technical potential scenarios

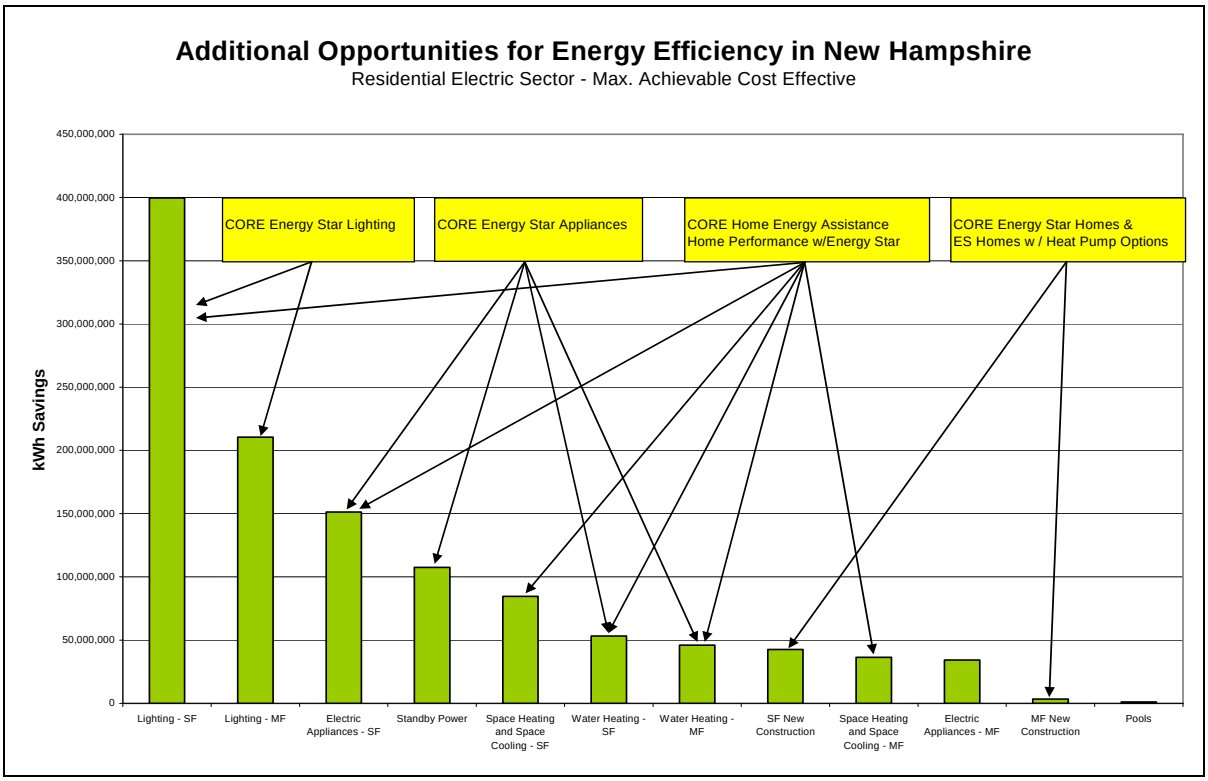


Figure 3: Top 12 residential electric energy efficiency opportunities mapped with CORE Programs

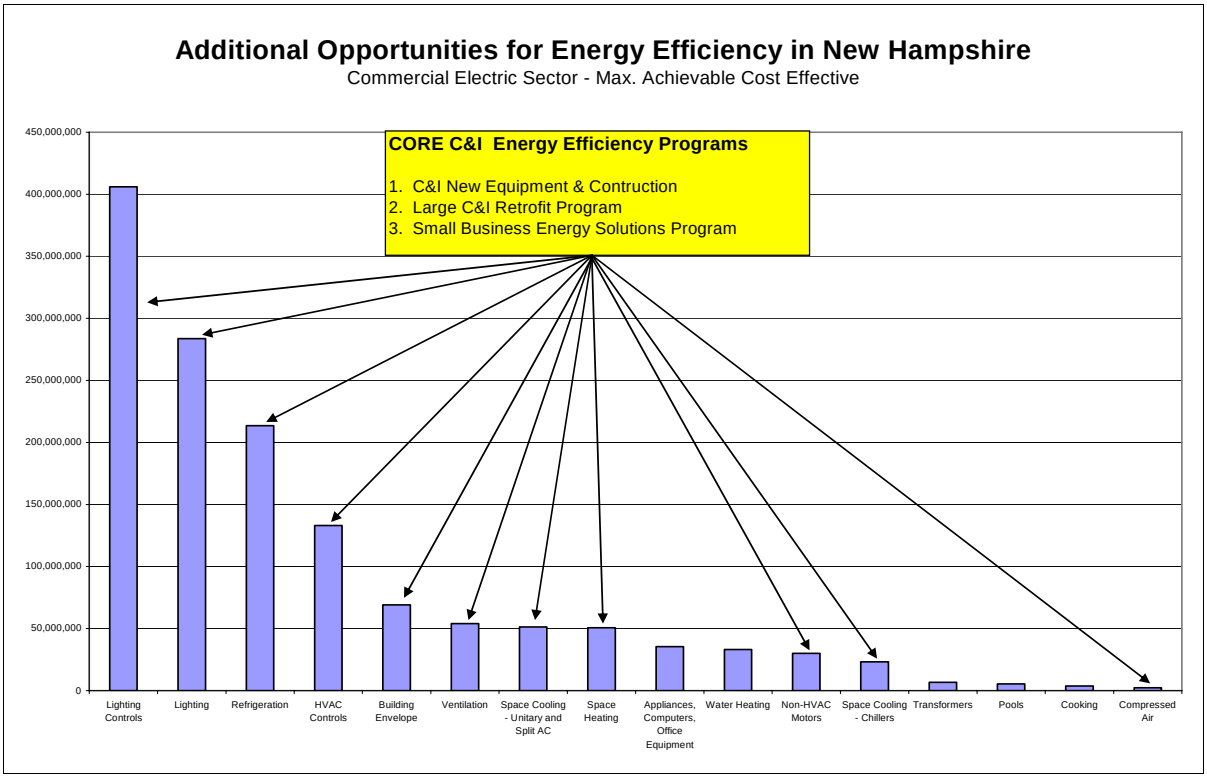


Figure 4: Top 16 commercial electric energy efficiency opportunities mapped with CORE Programs

- Home Energy Solutions becomes "NH Home Performance with ENERGY STAR": The NH Utilities are proposing to change the name of the Home Energy Solutions Program to "NH Home Performance with Energy Star". In Order No. 24,930 the Commission raised the issue of adopting this national standard. After reviewing the requirements, the utilities received verbal approval from EPA and DOE to launch the revised program under the national Home Performance with Energy Star label. The Utilities are currently working with EPA/DOE to complete the enrollment process.

  Since Order No. 24,974 was issued on June 4, 2009, authorizing a fuel neutral Pilot Program, PSNH and UES have been moving forward to serve 100 UES and 200 PSNH customers. The utilities are aggressively working to serve these customers and weatherize their homes in time for this heating season. While there is still much work to be done, we would like to share the following observations based on work completed to date:

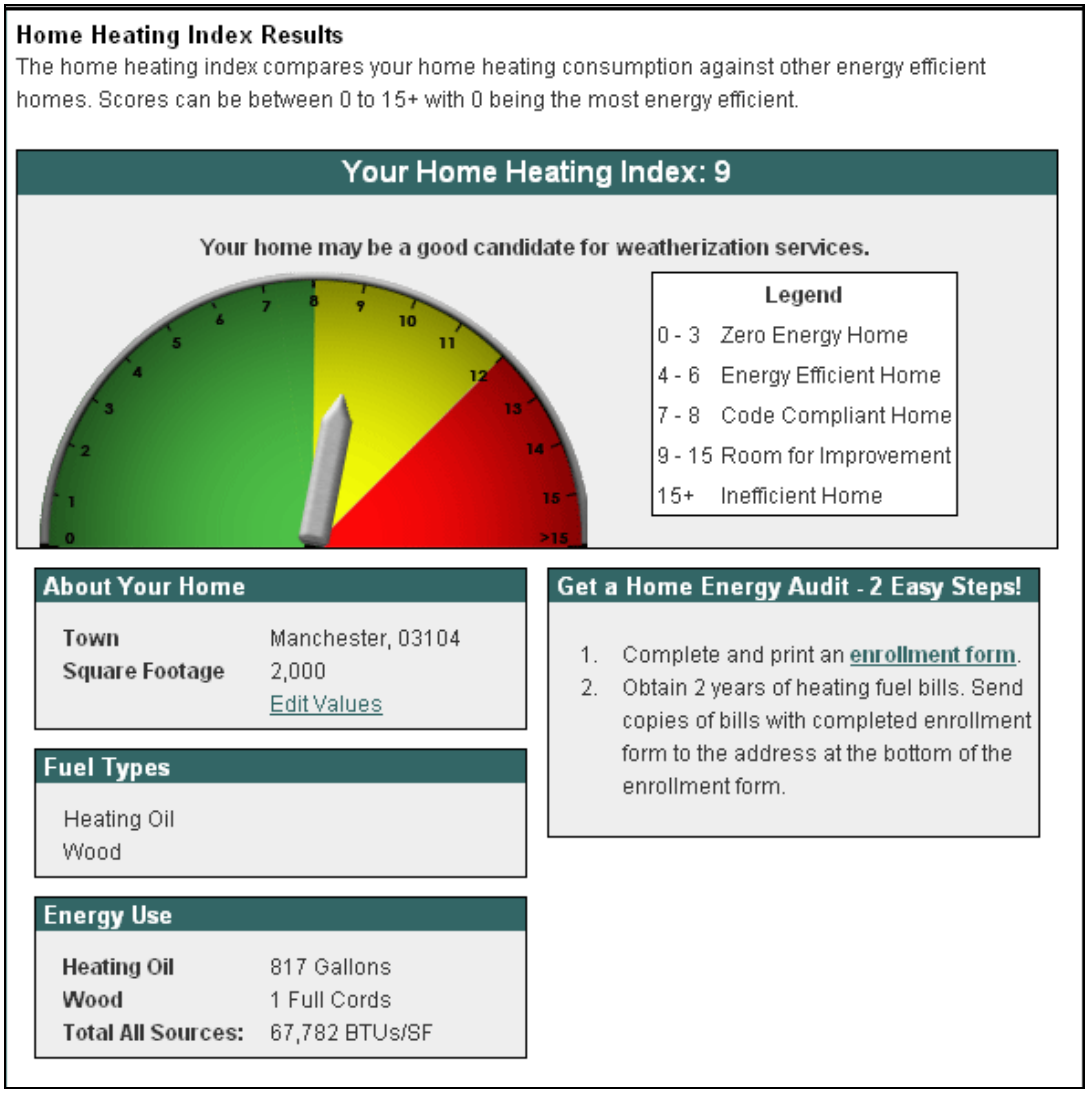
  1. The $100 up-front customer co-pay for the energy audit does not seem to present a barrier.

  2. Of the weatherization projects in process today, the customer co-pay has averaged approximately $700, and to date, it does not appear that this co-pay is a barrier to getting the customer to move forward with the weatherization opportunities recommended.

  3. Customers are required to pay only their co-pay to the weatherization contractors, while the utilities pay the incentive directly to the contractor. To date our weatherization contractors have not experienced any problems collecting the customer co-payments.

  The Utilities understand that these observations are preliminary, and that an evaluation conducted after the 2009-2010 heating season will provide a far more complete picture of the program and its impacts. However, the Utilities believe it would be a mistake to halt implementation of the program at the completion of the Pilot in order to conduct an evaluation. The need is great. According to the New Hampshire Climate Action Plan, there are approximately 600,000 residential housing units in need of weatherization services. Furthermore, few things are as detrimental to a program's infrastructure as starting and stopping delivery. For these reasons the Utilities are proposing that program implementation proceed in parallel with the evaluation in 2010.

With respect to the Fuel Blind HES Pilot Program, the Utilities would like to share some of the progress made to date. The Utilities developed a screening tool[10] that helps customers answer the question "How efficiently does my home perform?" With just three pieces of information (zip code, conditioned square footage of home and annual heating fuel usage) this tool will create a tailored Home Heating Index. PSNH and UES are using this tool to screen for qualified weatherization candidates. The higher the score, the more energy used per square foot, and therefore the more opportunity for savings. Customers whose homes are already code compliant or better are given links to educational material and other energy-related web sites. Customers whose homes have room for improvement are asked to fill out an application form and provide two year's of heating fuel usage data. As the higher use customers are served, the qualifications can be lowered over time. The following is a screen shot of our screening tool of a customer who qualifies for the program.



[10] http://www.nhsaves.com/homeheating/Default.aspx

- The American Recovery and Reinvestment Act of 2009 extended many consumer tax incentives originally introduced in the Energy Policy Act of 2005[11] and amended in the Emergency Economic Stabilization Act of 2008. Homebuilders were eligible for a $2,000 tax credit for a new energy efficient home that achieves a 50% energy savings for heating and cooling over the 2004 International Energy Conservation Code and supplements (ends December 31, 2009). Over 50% of the Energy Star Homes built in NH qualified for this tax credit. For existing homes, tax credits[12] are available for 30% of the cost, up to $1,500, in 2009 and 2010 (must be taxpayer's principal residence) for: Windows and Doors; Insulation; Roofs (Metal and Asphalt); HVAC; Water Heaters (non-solar); and Biomass Stoves. Participants in the NH Home Performance with Energy Star program are being notified of these additional benefits as they participate in a weatherization project. Finally, tax credits are available at 30% of the cost, with no upper limit through 2016 (for existing homes & new construction) for: Geothermal Heat Pumps; Solar Panels; Solar Water Heaters; Small Wind Energy Systems; Fuel Cells; and Biomass Stoves. Customers in both the Weatherization Programs and the Energy Star Homes new construction program are being made aware of the additional benefits of this tax credit. Customers in the Home Performance with Energy Star are also being informed of the renewable energy incentives offered through the NHPUC Sustainability Division.

- In addition to these larger evolving issues, programs and technology continue to evolve, such as:

  - ✓ IECC 2006 -> IECC 2009: New Hampshire has adopted the 2009 International Energy Conservation Code, with an effective date of October 1, 2009. The NH Utilities have been following the transition from IECC 2006 to IECC 2009 energy conservation code and will identify the changes that affect incentive levels and will make changes to the Residential and C&I New Construction / Lost Opportunity Programs as appropriate.

  - ✓ Light emitting diodes (LEDs): LEDs have been used to retrofit traffic lights and exit signs for over a decade. Newer LED fixtures and retrofit kits are starting to come on the market. Both the Energy Star Lighting Program and the commercial programs are watching closely as this technology emerges and becomes more cost effective. From our customers' point of view, LED lights are very cool. They hear "savings" and "long life" and may not fully understand the cost of these new products or the risk of not attaining the attributes seen in the ads (e.g, claims of 50,000 – 100,000 hour life, no light output or color shifts over time, etc.), The utilities are closely following progress with LEDs and will look for the U.S. Department of Energy or Illuminating Engineering Society of North America to develop a rating system for LEDs, which is scheduled to happen in 2010 or 2011.

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[11] http://energy.senate.gov/public/_files/ConferenceReport0.pdf and http://www.energystar.gov/index.cfm?c=products.pr_tax_credits#7

[12] http://www.energystar.gov/index.cfm?c=tax_credits.tx_index

For commercial applications, the New England utilities are working with Rensselaer Polytechnic Institute's Lighting Resource Center to verify the claims of LED retrofit fixtures. In the meantime, LED retrofits are being considered as custom measures for 2010 commercial programs, and will continue to be included in the NHSaves lighting catalog.

- ✓ High Performance T8 Lighting: In an ongoing effort to improve lighting efficiency, the utilities are promoting High Performance T8 systems and providing training to distributors, energy service companies, and customers. As such, the utilities are planning to drop prescriptive T8 retrofit rebates in 2010 while promoting and incenting retrofits using the High Performance T8 systems.

- ✓ Energy Star Homes Program: The EPA is currently developing additional changes to the ENERGY STAR Homes Program for 2011 which will raise the bar even further for homes to earn the ENERGY STAR certification. The NH Utilities, and Home Energy Raters, are engaged in these changes, and have been following closely the changes being recommended. The electric utilities will work to provide the necessary training for builders as these new program requirements are adopted.

- ✓ Energy Star Appliance Program: In response to product improvements, the ENERGY STAR appliance standards continue to ratchet upwards. For example, the efficiency standard for clothes washers was increased 36% in January 2007, 5% in July 2009 and will increase another 11% in 2011. The changing standards and the introduction of new models by manufacturers result in continual changes to the list of ENERGY STAR labeled washers. In response to these changes, the utilities are working with retailers to ensure accuracy in point of sale labeling and are monitoring program cost-effectiveness.

Energy Star Clothes Washer Criteria			
As of	1/1/07	7/1/09	1/1/11
MEF >=	1.72	1.80	2.00
WF <=	8.00	7.50	6.00
Federal Standard		MEF>=1.26	MEF >=1.26
MEF = Modified Energy Factor			WF <= 9.5
WF = Water Factors (gallons of water per cycle per cubic foot)			

D. Measurement & Verification and the ISO-NE Forward Capacity Market

In this filing, the utilities want to recognize an emerging role for Monitoring and Evaluation (M&E). Effective June 16, 2006, the Federal Energy Regulatory Commission (FERC) approved a Settlement Agreement that addresses the future capacity needs of New England. As part of that Settlement, the Independent System Operator (ISO-NE) has been leading an effort: (1) to develop rules that will govern a new Forward Capacity Market (FCM) that will begin operation June 1, 2010, and (2) develop rules which will govern the Transition Period leading up to the start of the FCM. Under the terms of these rules, energy efficiency measures installed after June 16, 2006, and which can be demonstrated to be operational during hours of peak electrical usage, are eligible to receive capacity payments.

Measurement and Verification (M&V) will be used to evaluate the impact of efficiency measures during system peak hours and thus the capacity value that will be used in determining any applicable payments. As currently drafted, state utility commissions are responsible for approving M&V plans for efficiency measures installed through programs under their jurisdiction. The utilities will work with the Staff and other interested parties to ensure that the CORE Programs' M&E efforts evolve in such a way that they are in alignment with ISO-NE M&V requirements in order to minimize expense and possible duplication of effort.

The New Hampshire utilities are also members of the Regional Evaluation, Measurement and Verification Forum (EM&V Forum) described below in Section IV - Monitoring and Evaluation. The EM&V Forum monitoring and evaluation projects are focused on developing data that will cost-effectively facilitate members' compliance with ISO-NE M&V standards.

Continuing the policy approved by the Commission in 2008, the NH Electric Utilities will continue reporting to ISO-NE the demand savings achieved via these energy efficiency programs as Other Demand Resources (ODR). Customers who participate in these energy efficiency programs must agree to forego any associated ISO-NE qualifying capacity payments and allow their electric utility to report kW savings and collect the payments on behalf of all customers. All ISO-NE capacity payments received will be used to supplement the utilities' energy efficiency program budgets.

E. Customer Comments

While aggregate measures of success such as kilowatt-hours saved, customers served, and emissions reduced provide a sense of the overall impact of the CORE programs, it is also important to recognize the tangible impact of the programs on individual residents and businesses. The following comments from customers who have participated in the energy efficiency programs illustrate the impact these programs have had on New Hampshire families and businesses. These are just a few examples of the comments that participants in the New Hampshire energy efficiency programs have shared.

- Hy-Ten Plastics of Milford NH received one of ten 2009 Northeast Business Leaders for Energy Efficiency awards for "*outstanding achievement*" from Northeast Energy Efficiency Partnerships, Inc. (NEEP). Hy-Ten was sponsored by PSNH due to their sustained commitment to energy efficiency. A short video[13] was made highlighting Hy-Ten's efforts and was shown at the awards ceremony in Albany, NY on May 25, 2009. Energy Efficiency measures include: high efficiency lighting, high efficiency all electric injection molding machines, variable frequency drives, premium efficiency motors, and a new high efficiency air compressor.

- After a lighting retrofit project at the Concord Litho Group, facility electrician Harvey Greene said "*it is a brighter more effectively lit facility, providing the right light at the right time, thanks to the new fixtures and occupancy sensors*". [This project included retrofitting 560 older T12, high pressure sodium and metal halide fixtures with high output T5 fluorescent fixtures and occupancy sensors, saving over 100 kW/month and 832,000 kwh annually.]

[13] http://www.neep.org/conference/2009/hyten.html and http://www.neep.org/conference/2009/allbiz.pdf

- *"In every case presented to our customers to upgrade to a higher SEER/EER unit w/rebate – they have upgraded! Thank you for having this program! It allows us to install the highest efficiency commercial equipment available. Anne Karczmarczyk has made this program very easy and simple to utilize. She has done a great job!"* Energy Service Company, K. E. B. Mechanical Systems, LLC, Dublin, NH

- *"I have recommended the process to other businesses and our town government. They too are taking advantage of the program. Thank you."* Small Business Program Participant, Farmington, NH

- *"Lighting is much better for Mfg. Team! Everyone was easy to work with, professional and knowledgeable. Steve, Mario and Mark were great to deal with. Thank you!"* Small Business Program Participant.

- "*Our energy costs have gone down and the lights are great*." Small Business Program Participant

- "*This program, in addition to being beneficial to our church, has encouraged our congregation at Pilgrim Church to be more attentive to conserving electricity and thereby lowering their carbon footprints. Our electric bill has consistently been lower since the installations. February 2009 kWhs were half of the consumption of kWh in 2008."* Small Business Program Participant.

- "*Our house did have some huge issues in terms of installation. Weird things that one would never think of such as a big leak at the peak of the roof in the living room (required simple caulking) and ducts that were uninsulated passing through a space that was just out in the cold. I loved the energy audit. I followed those guys around like a puppy dog learning everything I could. They did a great job. We made decisions together about what was most important and managed to deal with most of the issues….I think the best thing about all of this is:….I've learned a lot and I now very consciously monitor how I use the energy that heats and cools my home… Thank you so much for all your help."* NH Representative Claudia Chase, Home Energy Solutions Program Participant

- *I've never used air conditioning before (we have a unit that came with our house that I never turned on), but this summer my husband insisted we try using geothermal for air conditioning. Turns out he was right in his estimation that it would cost very little. In fact, the air conditioning heats the hot water for free so when you balance it out it costs very little to use the air conditioning. It's just the cost of the pumps, as it would be for heat without the electric back up. I was very pleased with that. Plus the geothermal air conditioning doesn't feel like normal air conditioning. Hard to explain. You have to experience it. It's kind of this calm wind of soft cool air. Nice."* Customer who converted from Oil to Geothermal, then participated in the HES Program for weatherization services.

F. Statewide Consistency and Coordinated Program Management

The uniform planning, delivery, evaluation and access to energy efficiency programs will continue under the proposed 2009 CORE NH Energy Efficiency Programs. To the extent practicable, the efficient delivery of services will not depend on the community in which the customer resides or does business. CORE Program offerings are designed to be consistent throughout the State with equal access for any eligible customer subject to available budget. Each utility will continue to have flexibility in its implementation strategies and may deliver its programs in a particular way. However, from a customer's perspective, the programs will continue to look virtually the same in all service territories:

In the first Settlement Agreement in Docket No. DE 01-057 the parties provided:

> The Utilities will establish a CORE Program Management Team (the "Management Team") to oversee all CORE Program activities and to resolve problems as they arise. The Management Team will be comprised of representatives from each utility and will make decisions by consensus with one member specifically designated as the liaison with the Parties and Staff. The Management Team will meet at least quarterly to review program progress and to resolve problems. [October 3, 2001, Section 5, page 11]

The Management Team will continue to fulfill its responsibilities to coordinate and oversee statewide activities, recognize problems in program delivery early on, communicate those problems among the NH utilities, identify corrective actions, and provide quarterly status reports to the Staff and interested parties.

Steps are also being taken to more closely align the CORE Programs with efficiency programs offered to New Hampshire's natural gas customers. From an organizational standpoint, with the completion of the National Grid/Keyspan merger and the acquisition of Northern Utilities by Unitil in 2008, both of the state's regulated gas utilities will become part of one of the CORE Utilities. Further, in an effort to improve communications, gas program representatives are now included in the Quarterly CORE Programs Review Meetings with interested Parties and Staff. And finally, from a customer perspective, duel fuel customers are offered an opportunity to participate in both the gas and electric programs.

G. Administrative Costs

The NH Electric Utilities, Commission Staff, and other interested parties have spent considerable time and effort setting up uniform program administration and reporting protocols, as well as joint marketing and coordinated monitoring and evaluation for all eight of the CORE Programs. The NH Electric Utilities will continue to direct their limited time and resources to successful program implementation, and the Commission Staff and other interested parties will be able to judge each utility's performance relative to agreed-upon program performance goals that are clear and measurable.

Cost-control measures are in place in the performance incentive mechanism, in that an inefficiently managed and administered program will likely fail to meet its cost-effectiveness and energy savings goals. On the other hand, the level of administrative costs that are spent on successful programs will vary from program to program and utility to utility for valid reasons. For example, a small utility and a large utility will generate unequal amounts of System Benefits Charge revenue and have unequal program budgets. However, what matters is that each utility devotes sufficient resources to operate the CORE Programs effectively in their service territory, as demonstrated by the outcomes of the programs and measured through the performance criteria (i.e., cost-effectiveness and energy savings).

H. Performance Incentive

The NH Electric Utilities are proposing that all programs in this filing be included in the determination of the performance incentive. In accordance with Commission Order No. 24,203, issued September 5, 2003, the utilities will continue to utilize the approved performance incentive mechanism. The current incentive mechanism fosters efficient program implementation efforts and the achievement of program goals while retaining most funding for program efforts. The performance incentive also serves as a motivating factor for the NH Electric Utilities and holds each utility accountable for meeting their individual program goals. If any individual utility does not meet its program goals, it will not earn its target incentive, and the Commission can require the utility to take corrective measures.

I. Multi-year Project Approval

In 2003 the Commission authorized what was termed "multi-year approval" – a process whereby customers with multi-year projects could receive a commitment assuring program continuity and funding for long term projects. The NH Electric Utilities seek to continue multi-year approval and specifically request authorization to make customer commitments during 2009 for projects to be completed in 2009, 2010, and 2011. All customer classes currently eligible to participate in the CORE Programs will be eligible. The remainder of this section provides background and support for continuing this policy.

Customers of the NH Electric Utilities often plan and budget for large capital projects with multi-year lead times. Construction projects, renovations and replacement of existing equipment for 2010 and 2011 will be developed in 2009, and the resources necessary to fund such projects need to be arranged when these customers' decisions are made. Large commercial and industrial customers sometimes have two-year planning horizons for large capital expenditures, which are essential to the growth of the NH economy. Home Builders will plan construction starts for the following year based upon the number of ENERGY STAR Homes that are approved by the local electric utility. With pre-approval of the number of households that can be served by the Home Energy Assistance Program, the Community Action Agencies or other contractors delivering these services can better plan for the crews that will be necessary to keep on board and coordinate with the Department of Energy Home Weatherization jobs.

The NH Electric Utilities will make commitments to customers who have presented definitive plans for projects to be completed in subsequent years. The energy efficiency measures will include those measures that are approved under the then existing CORE Programs and utility-specific programs. All 2009 program guidelines and rules will apply to the 2010 and 2011 commitments. Customers receiving commitments in 2009 will not be barred from participating in any new programs introduced in 2010 and 2011 which supplement or supplant the existing programs, subject to any limits on the dollar amount that a single customer may receive under the 2010 and 2011 programs. The funds will be paid out of the 2010 and 2011 budget amounts, respectively; however, the commitment to the customer will be made contingent upon the continuation of funding.

The total of all customer commitments, in any given program, in any given future year, will not exceed 40% of the amount budgeted for that program in 2009 for Customer Rebates and Services without prior concurrence of the Parties and Staff. Any such commitments will be monitored and reported in the NH Electric Utilities' quarterly reports. All customer commitments will be made contingent upon the continuation of the program funding.

J. Interim Changes in Program Budgets

The NH Electric Utilities recommend continuation of the budget adjustment guidelines currently in place. Specifically,

- Once the budgets are approved, there will be no movement of funds between the residential and commercial industrial sectors unless specifically approved by the Commission.

- Budget transfers to or from individual programs of 20% of the individual program's budget or less can be made without consultation and without Commission approval. Notice to the Staff and interested parties is required.

- Budget transfers to or from individual programs greater than 20% of the individual program's budget shall be filed with the Commission. Staff and interested parties may file any comments with the Commission within two weeks of the filing. If no action has been taken by Staff and interested parties, the budget transfer request shall be deemed approved unless the Commission notifies the company of the need for a more in-depth review within thirty (30) days of the filing.

- Notwithstanding the 2nd and 3rd bullets above, no funds shall be transferred out of the Home Energy Assistance Program without prior approval by the Commission.

II. CORE PROGRAM OFFERINGS

A. Residential Program Descriptions

1. ENERGY STAR® Homes Program

Overview:
This program is intended to transform New Hampshire's housing stock by offering incentives to build homes that are at least 20% more efficient than homes built to the 2009 International Energy Conservation Code (IECC)[14]. The program is fuel neutral and aligned with a national effort developed by the U.S. Environmental Protection Agency. The New Hampshire ENERGY STAR Homes program provides builders with technical assistance, financial incentives and instruction needed to ensure that homes meet stringent ENERGY STAR technical standards. The program provides incentives for home certification, upgrades to ENERGY STAR products, and a sliding scale performance based incentive designed to encourage builders to improve efficiency levels above the minimum required by the national program. The program also addresses market transformation by providing a Home Energy Rating (HERS)[15] - a nationally recognized index for measuring a home's energy efficiency. The program targets both single and multi-family homes and is open to customers building a new home or undertaking a complete renovation of their existing home.

NH Electric Utility staff will coordinate program delivery to ensure that consistent services are provided to home builders across the state. In addition, the utilities will continue to collaborate with the New Hampshire gas utilities to incorporate their rebates for high efficiency HVAC equipment. During 2002-2008, implementation efforts included builder and subcontractor training as well as marketing and distribution of promotional materials to raise awareness of and interest in ENERGY STAR Homes. On September 30, 2005 the EPA made changes to the federal ENERGY STAR Homes Program and the NH utilities have incorporated these changes into this program. These new standards resulted in the following changes to the program in 2008 and beyond:

- ✓ Home Energy Rater must perform a "Thermal Bypass Inspection" using checklist.
- ✓ Air duct testing is now mandatory to ensure tighter standards are met.
- ✓ Some ENERGY STAR products (heating or cooling equipment, windows, or lighting/appliances) must be part of the new home.

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[14] The New Hampshire Energy Code, adopted in August 2007, is based upon the 2006 International Energy Conservation Code. It is anticipated that New Hampshire will adopt the IECC 2009 International Energy Conservation Code for 2010 and the utilities have incorporated this into the 2010 program.

[15] As of 2007, an ENERGY STAR® home must meet the Home Energy Rating System (HERS) index of no more than 85/80 (NH standardized on 80 statewide) on a scale of 100-0 (in accordance with the *Mortgage Industry National Home Energy Rating Standards* administered by the Residential Energy Services Network (RESNET). This HERS index is recognized by the US Environmental Protection Agency as the qualification for ENERGY STAR® home designation.

The EPA is currently developing additional changes to the ENERGY STAR Homes Program for 2011 which will raise the bar even further for homes to earn the ENERGY STAR certification. During 2010, the focus will be to continue educating builders on the national 2007 program changes, the expected 2011 program changes, and assisting them as they work to meet these new requirements. Efforts will also include educating consumers on the benefits of building to the ENERGY STAR level and beyond. The NH electric utilities will continue to work with the Home Builders & Remodelers Association of NH, customers, and building trade allies (e.g., insulation and HVAC contractors) to encourage the construction of ENERGY STAR homes in the state

On a national basis, the "U. S. Environmental Protection Agency[16] announced that nearly 17% of all single-family homes built in 2008 earned EPA's Energy Star label, up from 12% in 2007". In their July 2, 2008 press release[17], the EPA also recognized New Hampshire as one of 15 states leading the nation with an ENERGY STAR market share of 20% or greater. This is an honor for New Hampshire to be recognized for this accomplishment, and the utilities want to make sure the state remains at the top of the list by proactively working with builders to get ready for the many changes coming in this program.

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	2009	2010
Goals/Benefits:		
Estimated Number of Customers to be completed:	512	520
Projected lifetime kWh savings:	4,944,960	5,719,313

Over time there will be an increased awareness of and demand for ENERGY STAR Homes by homebuyers, renters, homebuilders and the real estate community.

Budget:		
January 1 - December 31, 2010 Budget:	$1,362,346	$1,485,323

Measures of Success & Market Transition Strategy:
Success factors for this program include: the number of homes completed versus goal, the energy savings achieved, and the benefit/cost ratio. We expect that increased awareness of and demand for "ENERGY STAR Homes" may eventually decrease the need for incentives. New technologies may change the types of products that are eligible for rebates in the future. Evaluations will help determine program changes, if needed, over time.

[16] See http://energystar.gov/index.cfm?c=news.nr_news#states
[17] http://www.energystar.gov/index.cfm?c=news.nr_news

2. NH Home Performance with Energy Star Program

Overview:
This program will continue to improve the efficiency of the existing housing stock in NH by assisting customers with improvements to the energy efficiency of their home. Basic services include insulation, weatherization, and cost effective appliance and lighting upgrades. Participating customers can receive up to $4,000 in program services. Co-payments are required and are determined based on the measures installed. The program also has a strong educational component designed to help customers better understand their home and the factors that affect energy use.

Delivery:
Due to the market saturation of electrically heated homes in different service territories, PSNH and UES are proposing to serve high energy use[18] homes while NHEC and GSECo will continue serving electrically heated homes. NH Electric Utility personnel will administer the program and will contract for the delivery of program services.

	2009	2010
Goals/Benefits:		
Estimated Number of Customers to be served:	868	883
Projected lifetime kWh savings:	7,160,161	8,333,289

In addition to improving the energy efficiency of NH homes, another benefit will be the continued development of a NH infrastructure that can support and deliver energy efficiency improvements. Other benefits include developing a demand for energy efficiency by homebuyers, renters, property owners, homebuilders, and the real estate community.

Budget:

January 1 - December 31, 2010 Budget:	$2,019,389	$2,059,676

Measures of Success & Market Transition Strategy:
Success factors for this program include attaining the planned participation and energy savings goals. New technologies may change the types of products that are eligible for rebates in the future. Evaluations will help determine program changes, if needed, over time.

[18] "High Energy Use" customers are currently being qualified using the Home Heating Index tool.

3. ENERGY STAR® Lighting Program

Overview:
This program will continue to increase the use and availability of energy efficient lighting products in New Hampshire. The program is open to all residential customers and will (1) offer rebates for interior and exterior ENERGY STAR labeled bulbs and fixtures, (2) promote the efficiency and environmental benefits of the latest lighting technologies, and (3) leverage the ENERGY STAR branding across three programs - Lighting, Homes, and Appliances.

Program delivery will be through New Hampshire retailers, mail order catalogs, and utility web sites. Contractors will continue to provide retailer training and to work with the 130 retailers to ensure the availability and visibility of ENERGY STAR lighting products. Services will also include rebate processing and the development and placement of cooperative advertising with participating retailers. Instant rebate coupons for qualifying bulbs and fixtures will make these products more affordable at participating retailers.

The program catalog is designed to raise customers' awareness of the products, to inform them of the new technologies being developed, and to make it easy to purchase products. The NH Electric Utilities will continue promoting energy efficient lighting via special events with retailers and directly with customers via Energy Fairs, Trade Shows, etc. A statewide toll free number and website will remain available to all New Hampshire residential customers.

	2009	2010
Goals/Benefits:		
Estimated Number of Products Incented:	300,201	370,382
Projected lifetime kWh savings:	90,960,835	90,964,469

The overall goal of the program is to raise the visibility and availability of ENERGY STAR lighting products in order to build customer demand to the point that the market will become self-sustaining.

Budget:		
January 1 - December 31, 2010 Budget:	$1,339,352	$1,318,316

Measures of Success & Market Transition Strategy:
Program success factors will include attaining the planned participation and energy saving goals, increased market share, and customer awareness and acceptance of the ENERGY STAR brand. Evaluations will help determine program changes, if needed, over time.

4. ENERGY STAR® Appliance Program

Overview:
This program will increase the use and availability of energy efficient appliances in New Hampshire. It will be tailored to the needs of New Hampshire, but coordinated with similar national or regional initiatives. A prime objective is to raise awareness and educate consumers on the benefits of ENERGY STAR rated appliances through joint marketing, promotional, and educational materials. The program is open to all residential customers and will feature a $50 rebate for ENERGY STAR rated clothes washers, a $20 rebate for ENERGY STAR rated room air conditioners, and a $10 rebate for smart power strips. Rebate levels may be adjusted during the year to meet current market conditions.

Contractors will continue to provide services including retailer retention and recruitment, training, point of purchase promotional materials, and product labeling for the more than 90 participating retailers. Services will also include rebate processing and the development and placement of cooperative advertising with participating retailers. In addition, the NH Electric Utilities will seek opportunities to collaborate with manufacturers on matching rebate programs.

	2009	2010
Goals/Benefits:		
Estimated Number of Products Incented:	12,720	14,363
Projected lifetime kWh savings:	19,545,785	21,637,376

The overall goal of the program is to raise the visibility and availability of ENERGY STAR appliances in order to build customer demand to the point that the market will become self-sustaining.

Budget:		
January 1 - December 31, 2010 Budget:	$889,198	$1,014,372

Measures of Success & Market Transition Strategy:
Program success factors will include attaining the planned participation and energy saving goals, and increasing market share. Customers will be surveyed to determine the impact of ENERGY STAR labeling and promotion on their purchasing decisions. Evaluations will help determine program changes, if needed, over time.

B. Low Income Weatherization

1. Home Energy Assistance Program

This program is designed to help low income customers manage their energy use and reduce their energy burden. Basic services include insulation, weatherization, cost effective appliance and lighting upgrades, and appropriate health and safety measures. Participating customers can receive up to $5,000 in program services. Customers served by Community Action Agencies may be eligible for additional DOE Weatherization Assistance (Wxn) funding. The program will also have a strong educational component specifically tailored for income eligible customers and designed to help them better understand their home and the factors that affect energy use.

The utilities are committed to working with the Community Action Agencies (CAAs), the Office of Energy and Planning, The Way Home (TWH), and other interested parties to improve and expand the collaboration initiated during the first phase of this program (see Attachment A). Specific goals for this collaboration include expanding the number of participants served by the CAAs and increasing the number of jobs jointly funded by the CORE and Wxn programs.

Delivery:
The Community Action Agencies (CAAs) and other independent contractors will deliver the program in a way that maximizes participation and energy saving goals. The NH Electric Utilities and contractors will cooperatively market the program, address customer intake, schedule work, conduct the initial home visit, install energy efficient measures, and perform quality assurance. The program will be open to all customers who meet the eligibility criteria for participation in the Fuel Assistance Program, the NH Electric Assistance Program, the DOE Weatherization Program and anyone living in subsidized housing or municipal and non-profit shelters serving the needy.

Qualified CAAs will be offered right of first refusal to deliver services under the Low Income Home Energy Assistance Program provided: (1) The CAAs agree to participate in a bidding process with other energy service providers to establish qualifications and pricing for program services. (2) The CAAs agree to provide services at established statewide rates. Where the same services are provided in the NH Home Performance with Energy Star Program, pricing would be the same for both programs. (3) CAAs would meet established statewide standards for customer response time, work quality, and delivery of program services. These statewide standards will apply to both the Home Energy Assistance as well as the NH Home Performance with Energy Star Programs.

The Electric Utilities will strive to market the program in such a fashion as to promote a reasonably level flow of work. In cases where the CAAs cannot provide low income energy efficiency services in accordance with the approved CORE weatherization production schedule, or they choose not to deliver the services, the work will be assigned to other qualified vendors who will be held to the same standards for pricing, customer

responsiveness and work quality. In such cases, the utility will provide notice to the CAA, and thereafter to the Weatherization Directors Association (WDA), that the work is being assigned to other qualified vendors. The utility will offer to discuss the matter with the CAA and WDA; however, the utility shall be permitted to assign work to other qualified vendors once notice has been provided to the CAA. If the matter cannot be resolved, the CAA reserves the right to file an appropriate motion with the Commission for resolution of the matter.

	2009	2010
Goals/Benefits:		
Estimated Number of Customers to be served:	691	1,053
Projected lifetime kWh savings:	19,744,078	25,057,203

The program will be coordinated closely with the Electric Assistance Program (EAP) in order to identify eligible customers. While all income eligible customers may participate in this program, working with EAP participants to reduce their energy burden has the further benefit of increasing the EAP funds available to other customers.

Budget:		
January 1 - December 31, 2010 Budget:	$2,641,742	$2,870,141

Measures of Success & Market Transition Strategy:
Success factors for this program include: attaining the planned participation and energy savings goals, high customer satisfaction ratings, and successful delivery of all program services through the CAAs and independent contractors. No market transition strategy is recommended at this time based on the significant need for these services in the state, and the relatively small number who can be served in any given year due to budget constraints. This is consistent with the recommendation of the Energy Efficiency Working Group[19].

[19] See Final Report of the Energy Efficiency Working Group, July 6, 1999, Docket No. DR 96-150, page A34.

C. Commercial & Industrial Program Descriptions

1. New Equipment and Construction Program

Overview:
This program targets customers, 100 kW and larger, with new construction, major renovation, or failed equipment replacement projects. The program offers prescriptive and custom rebates designed to cover the lesser of a one year payback or 75% of incremental costs up to the customer's incentive cap. The program also offers Technical Assistance including project evaluation, measure identification, equipment monitoring, and efficiency studies. Technical Assistance and Commissioning services may require a customer co-payment.

Other initiatives will include: Energy Efficient Schools Initiative - offering rebates of up to 100% of incremental costs; Building Codes - training on the proper implementation of New Hampshire's commercial energy building code; and Compressed Air Services - assisting customers with comprehensive audits and training. NH Electric Utilities will initially reserve five percent of the program budget for the Energy Efficient Schools Initiative; however, actual funding will be higher or lower depending on the number of new school building opportunities.

Delivery:
NH Electric Utility staff will be responsible for delivery of this program through multiple channels including: Account Executives and Energy Service Representatives working directly with customers; Economic Development staff working with new prospects as well as assisting customers who are relocating; and Energy Efficiency Program Administrators generating leads through the building development community, real estate professionals, and town permitting offices. The program will emphasize the benefits of selecting premium efficiency alternatives during the design stage of a project.

Goals/Benefits:	2009	2010
Estimated Number of Customers to be served:	151	225
Projected lifetime kWh savings:	97,633,457	113,098,140

Budget:		
January 1 - December 31, 2010 Budget:	$2,587,328	$2,657,079
Energy Efficient Schools Initiative Percent	5%	

Measures of Success & Market Transition Strategy:
Program success will be based on attaining the planned participation and energy saving goals. Evaluations will help determine program changes, if needed, over time.

2. Large C&I Retrofit Program

Overview:
This program targets customers, 100 kW and larger[20], operating aging, inefficient equipment and systems. The program offers prescriptive and custom rebates designed to cover the lesser of a one year payback or 35%[21] of equipment and installation costs up to the customer's incentive cap. Opportunities typically include lighting, motors, HVAC, variable frequency drives as well as custom measures. The program also offers Technical Assistance including project evaluation, measure identification, equipment monitoring, compressed air leak detection, and energy audits. Technical Assistance services may require a customer co-payment.

This program also includes an educational component that will offer training seminars of interest to commercial, municipal and industrial customers. Training seminars being considered include Commercial Audit Training, Compressed Air Services, Certified Energy Manager Class, and EPA's Motor Master.

Delivery:
Account Executives and Energy Service Representatives will offer this program directly to customers. Audits may be used to identify the opportunities for energy efficiency improvements. Customers wishing to take advantage of this program will sign a rebate application that documents what will be done, the estimated completion date, and the anticipated incentive amount.

	2009	2010
Goals/Benefits:		
Estimated Number of Customers to be served:	168	262
Projected lifetime kWh savings:	165,209,310	192,202,306
Budget:		
January 1 - December 31, 2010 Budget:	$3,038,634	$3,291,971

Measures of Success & Market Transition Strategy:
Program success will be based on attaining the planned participation and energy saving goals. Evaluations will help determine program changes, if needed, over time.

[20] National Grid and Unitil will limit this program to customers with demands of 200 kW and larger, allowing those customers under 200 kW to participate in the Small Business Energy Solutions Program.
[21] National Grid will pay up to 50% on Custom Retrofit Projects due to current market saturation in its service territory.

3. Small Business Energy Solutions Program

Overview:
This program will provide turnkey energy efficiency services for customers under 100 kW demand[22]. Program offerings include but are not limited to lighting, programmable thermostats, electric hot water measures, and refrigeration measures. The program pays 50%[23] of the installed costs up to the customer's incentive cap.

Delivery:
Utility personnel will administer the program and will contract for the delivery of program services. Leads will be generated from referrals from Customer Service or Energy Service Representatives, past audits, and other marketing efforts. Contractors will meet with the customer, perform a simple audit of the customer's facility, and recommend cost effective energy saving measures for installation. Customers may elect to have measures installed by the utility's contractor or a licensed electrician of their own choosing.

	2009	2010
Goals/Benefits:		
Estimated Number of Customers to be served:	528	598
Projected lifetime kWh savings:	102,703,290	114,224,692
Budget:		
January 1 - December 31, 2010 Budget:	$2,938,614	3,146,306

Measures of Success & Market Transition Strategy:
Program success will be based on attaining the planned participation and energy saving goals as well as customer satisfaction with the program. Evaluations will help determine program changes, if needed, over time.

[22] National Grid and Unitil have opened this program to customers with an average demand up to 200 kW due to the high level of market saturation these companies have achieved among customers with demands under 100 kW.
[23] National Grid will pay 70% in its service territory.

4. Educational Programs

Overview:
The NH Electric Utilities believe that educational programs play an important role in raising awareness about energy efficiency and complement the other programs. The Educational Programs planned for 2010 are as follows:

1. Energy Code Training: Provide financial support for the Utility/State of NH/NHPUC statewide residential and C&I energy code trainings.

2. Commercial Energy Auditing Class: Deliver training program to assist facility managers in learning tools of the trade, identifying energy efficiency opportunities, monitoring and tracking energy use, and developing an energy management plan.

3. C&I Customer Education: Develop and offer training seminars and workshops of interest to C&I customers and professionals (e.g., NH Energy in Schools Workshop, High Performance T8 Systems, Operations and Management Best Practices). These seminars and workshops will help building owners, facility personnel, architects, engineers, energy service companies and others better understand the opportunities for improving the energy performance of their buildings and equipment. This also includes collaborating and partnering with trade allies to encourage and sponsor energy efficiency seminars and presentations for NH businesses.

4. Energy Education for Students: The NH Electric Utilities will support programs such as:
   Grades K-2: Poss's Energy Posse
   Grade 3: Teacher Consultants performing 1 hour Energy Efficiency classes in schools
   Grades 3-4: "We understand it's up to us to use energy….wisely!" ("Energy UUUU")
   Grades 3-4: Energy UUUU2, a 1-day program for students and their teachers
   Grades 5-6: Watt Watchers, a 2-day program for students on lighting surveys
   Grades 7-12: Savings Through Energy Management (STEM)
   Grades 7-12: Bright Ideas, a 3-day program for students and their teachers
   The purpose of these programs is to educate students in grades K-12 about energy efficiency. The NH Electric Utilities will conduct outreach to schools to promote these programs.

In addition, the NH Electric Utilities have committed to numerous education initiatives as part of its CORE programs. The residential and low income education initiatives are integral to the delivery of the respective programs and are budgeted with the programs.

Delivery:
Varies by program; educational classes are presented by industry specialists.

Goals/Benefits:
Each educational effort is focused on meeting the needs of a particular customer or group of customers; however, the common theme of these efforts is to raise awareness and

understanding of the benefits of energy efficiency, and encourage the implementation of energy efficiency improvements.

Budget:

Educational Program Budgets	NGRID	NHEC	PSNH	UNITIL	2010
Energy Code Training	$3,020	$3,515	$37,675	$5,790	**$50,000**
Commercial Energy Auditing Class	$906	$1,055	$11,303	$1,737	**$15,000**
C/I Customer Education	$1,642	$5,996	$33,529	$17,473	**$58,640**
Energy Education K-12	$3,928	$25,000	$75,000	$15,000	**$118,928**
Total	**$9,496**	**$35,566**	**$157,507**	**$40,000**	**$242,568**

Measures of Success:
Success of these programs is based on customer satisfaction. This includes informal feedback from instructors and participants as well as customer satisfaction surveys used to evaluate a particular training session. These programs will be modified as needed to meet changing customer needs.

III. Utility Specific Program Descriptions

NEW HAMPSHIRE ELECTRIC COOPERATIVE, INC.

A. Load Management System

Overview:
Load Management is a Demand-Side Management (DSM) technique that NHEC, with NHPUC approval, has offered since 1993. By means of a radio-controlled switch, NHEC is able to turn off, or control electric baseboard heat and electric water heaters in the homes of participating members. NHEC members receive the benefit of lower bills through the off-peak Heating and Controlled Water Heating Rates. NHEC's participating members have embraced this space heating and water heating strategy.

NHEC plans to maintain and operate the existing Load Management infrastructure, but will not actively market the program to new participants. NHEC believes that this program is very important to it's members because it helps to control the ever increasing cost of transmission.

Delivery:
NHEC will continue to provide load management programs and services upon member requests as well as to existing program participants requiring maintenance. Field Technicians trained in the load management programs and its related equipment will deliver these programs.

Goals/Benefits:
Approximately 4,000 members system wide have had water heater controls installed. Additionally, approximately 1,000 members have had Electric Thermal Storage (ETS), Dual Fuel (DF), and Storage Water Heater controls installed. Continued maintenance of these controls and related equipment is one focus of this program.

	2009	2010
Budget:		
January 1 - December 31, 2010 Budget:	$104,720	$100,707

Measures of Success & Market Transition Strategy:
Success for this program will be based on the continued maintenance of existing load management equipment. NHEC is in the development phase of an automated metering infrastructure project. This may provide NHEC with new and additional opportunities for managing resources. As this project moves forward, NHEC will determine how the current load management system will integrate with the new communications network and NHEC may propose program modifications in the future.

B. Smart Start Program

Overview:
The Smart Start Program provides members with an opportunity to install energy efficient measures with no up front costs, and pay for them over time with the savings obtained from lower energy costs. Under the program, NHEC pays all of the costs associated with the purchase and installation of the approved measures. A Smart Start Delivery Charge, calculated to be less than the monthly savings, is added to the member's monthly electric bill until all costs are repaid. The program is designed to overcome many of the traditional barriers to energy efficiency projects including: high first cost, customer uncertainties related to achieving energy savings, customer reluctance to install measures if there is a possibility of moving from the premise before benefiting from the efficiency project, and the so-called "split incentive", where a landlord gets little return on an investment that reduces a tenant's energy costs and a tenant has no incentive to invest in their landlord's building.

Delivery:
NHEC plans to continue offering Smart Start to commercial members. NHEC staff will identify potential projects and make Smart Start offers where it applies. These offers may be combined with other energy efficiency programs for which the member is eligible.

	2009	2010
Budget:		
January 1, - December 31, 2010	$15,263	$8,372

Measures of Success & Market Transition Strategy:
Success factors for this program include Member acceptance of Smart Start offers, achieving high customer satisfaction ratings, and having a low default rate on Smart Start loans.

C. High Efficiency Heat Pump Program

Overview:
The objective of the High Efficiency Heat Pump Program is to assist residential members to reduce their energy costs by installing high efficiency heat pump technologies. These technologies include high efficiency air source heat pumps and geothermal heat pumps. The program has a number of goals, which include:

1. Increasing availability of energy efficient, zero onsite emission solutions to NHEC member's heating and cooling needs;
2. Assessing the market potential and technical feasibility of various heat pump technologies;
3. Identifying barriers to increased penetration of energy efficient heat pumps and ways to overcome them;
4. Determining the cost effectiveness of various heat pump technologies and applications; and
5. Assessing the viability for a more extensive program in future years.

NHEC will offer this program to residential members for new construction applications in conjunction with the Energy Star Homes Program.

Delivery:
Delivery will be coordinated with the Core Energy Star Homes Program. NHEC will work with its members and installation contractors to insure maximum performance from the building shell and heating/cooling equipment.

	2009	2010
Goals/Benefits:		
Estimated Number of Members to be served:	15	13
Projected lifetime kWh savings:	5,077,000	7,279,361
Projected Benefit/Cost Ratio:	1.55	2.60
Budget:		
January 1 - December 31, 2010:	$87,257	$97,482

Measures of Success & Market Transition Strategy:
Success factors for this program include attainment of the planned participation and estimated savings, and high customer satisfaction ratings.

PUBLIC SERVICE COMPANY OF NEW HAMPSHIRE

This section provides details on issues and programs specific to PSNH.

A. Budget Narrative

The following assumptions were used to develop PSNH's budget:

1. The budget is based on forecasted 2010 sales of 7,828,389 MWh (down 5.2% from 2009 forecast of 8,259,654 MWh) and a System Benefits Charge (SBC) rate of 1.8 mills/kWh.
2. A carry forward balance of -$31,574 from 2008 was subtracted from this budget
3. Estimated ISO-NE Forward Capacity Payments for January – December 2010 were added to this budget ($1,200,000). (In NHPUC Order No. 24,719 on December 22, 2007, the NHPUC stated "We also believe that it is appropriate, as a preliminary matter, to contribute any payments received by utilities for Core program peak load reduction back to the Core programs."). These funds were split first 14.0% for Home Energy Assistance (HEA) and then 70% of the remainder for C&I and 30% for Residential.
4. All customers fund the Low Income Energy Efficiency Program (HEA) in proportion to their contributions to SBC revenues. Funding for this program comes "off the top" of the budget. For 2010, a change was made to fund HEA at 14.0% of the budget. (In years 2002-2008, PSNH determined its budget for this program using the same ratios used by the Low Income Subcommittee of the Energy Efficiency Working Group. For the 2009 budget, 13.5% was used.)
5. Monitoring and evaluation was estimated and budgeted at 5% of the overall budget.
6. The funds remaining after funding the Low Income program are allocated between customer classes in proportion to contributions to SBC revenues (39.05% residential, 60.95% Commercial & Industrial);
7. A set aside was reserved for a shareholder incentive. The actual incentive will be based on the methods approved by the New Hampshire Public Utilities Commission. Two separate calculations are required. The first applies to the Smart Start Program and is based on 6% of Smart Start loans repaid[24]. The second applies to all other programs and is based on the calculations recommended by the Energy Efficiency Working Group and approved by the Commission. The Shareholder Incentive section of this document covers this calculation in more detail. The set aside for the remaining programs was estimated at 8%[25]; the budget includes separate line items for the estimated commercial and residential incentives.

[24] Docket DE 01-080, Order No. 23,851, November 29, 2001, Section III, page 19.

[25] More precisely, this calculation is based on 8% of the non-incentive portion of the budget in accordance with the Energy Efficiency Working Group Report which states on page 21, part 3f, " For incentive calculation purposes only, 'planned energy efficiency budget' is defined as the total program budget minus shareholder incentives…".

In addition there are several factors that could impact the budget during implementation of the CORE Programs including:

8. Any difference between the actual spending level achieved in the 2009 CORE Programs and the System Benefits Charge revenues collected will be allocated to future year program budgets.
9. PSNH plans to monitor spending in each of the programs and propose adjustments as necessary (e.g. in response to customer demand) in accordance with the guidelines proposed in the Executive Summary of this filing.
10. PSNH will accrue interest[26] monthly at the prime rate[27] on the average net balance of the SBC revenues less funds expended for programs and services.
11. PSNH's budget and SBC revenues are based on sales projections. Actual sales may differ resulting in proportionately more or less SBC revenue available for energy efficiency programs. Budgets will be adjusted to reflect actual sales.

The budget is presented in Attachment H.

B. Availability of C&I Programs

PSNH proposes to offer the CORE and Utility specific programs to all of the Company's commercial and industrial customers except for those taking service under Backup Delivery Service Rate B. Rate B is designed for customers who require backup and maintenance delivery service, but who normally provide their own generation during which time they make no contribution to the System Benefits Charge.

C. Customer Installed Generation

PSNH's commercial and industrial customers who supply a portion of their energy needs through means which by-pass their meter and for which no System Benefits Charge revenues are collected will qualify for services and incentives offered as part of the state-wide energy efficiency programs with certain restrictions. The energy supply could be generation installed by the Customer or another party on the customer's side of the meter. However, the restrictions noted below apply regardless of the source of the energy (collectively referred to here as "customer generation").

- ❑ Customer generation which exceeds 50% of the customer's annual maximum kW demand ("Demand") will not qualify for services and incentives.

- ❑ A customer's maximum incentive will be based on the net of their demand less the name plate rating of the customer generation. For example, a Rate GV customer with a demand of 150 kW who installs 60 kW of generation will be capped at the incentive available to Rate G customers. The table below depicts incentive levels for commercial and industrial customers. Incentives are limited to the customer's end uses and may not be applied to the generation equipment.

[26] DE 96-150, Order 23,574, November 1, 2000, page 25.
[27] http://www.moneycafe.com/library/primerate.htm

- Customers who install generation within one year of the date they install measures for which they receive a monetary incentive must refund any difference between the incentive received and the incentive for which they would qualify after installing generation. Any such amount would be repaid within 60 days of PSNH's request for payment.

This policy does not apply to customer generation used for emergency supply during service outages on PSNH's transmission and distribution system. The customer may periodically test emergency generators and may participate in a PSNH demand reduction program using the customer's emergency generation. In addition, customer generation which meets the requirements for net metering are not subject to the restrictions noted above.

D. Incentive Caps on C&I Programs

In order to manage the overall budget and to help achieve an equitable distribution of program funds, PSNH proposes the following annual caps on the level of incentives offered to any individual customer.

Customer Classification	**Retrofit Programs Annual Cap**	**New Construction Cap Annual Cap**
Rate G Customers (100 kW and below)	$50,000	$50,000
Rate GV Customers (101 kW to 1,000 kW)	$50,000 plus $5,000 for each GWH[28] above 1 GWH	$100,000
Rate LG Customers (in excess of 1,000 kW)	$100,000 plus $1,000 for each GWH above 10 GWH	$150,000

The retrofit caps apply to the total of all retrofit program incentives paid. Retrofit and New Equipment & Construction incentives are independent of one another. Customers selected to participate in the C&I RFP Pilot Program described below in Section I may earn additional incentives and are not limited by the annual incentive caps shown above.

These customer caps are intended to allow PSNH to spread funds out to many different customers rather than on one or two large projects or customers. The caps will serve as guidelines to be used in dispersing rebates, and will not be absolute limits on the amount of incentive to be provided to any particular customer. PSNH reserves the right to provide incentive payments in excess of the caps on a case-by-case basis.

[28] GWH – a gigawatt-hour (equal to 1,000,000 kilowatt-hours). The cap will be based on the customer's GWHs for the preceding calendar year. For new or expanding facilities, the cap will be based on the estimated annual usage.

E. Smart Start Program

Overview:
The Smart Start Program provides customers with an opportunity to install energy saving measures with no up front costs and to pay for them over time with the savings obtained from lower energy costs. Under the program, PSNH pays all of the costs associated with the purchase and installation of approved measures. A Smart Start Delivery Charge, calculated to be no more than the monthly savings, is added to the monthly electric bill until all costs are repaid. The program is designed to overcome many of the traditional barriers to energy efficiency projects including: high first cost, customer uncertainties related to achieving energy savings, customer reluctance to install measures if there is a possibility of moving from the premise before benefiting from the efficiency project, and the so-called "split incentive" where a landlord gets little return on an investment that reduces a tenant's energy costs and a tenant has no incentive to invest in their landlord's building.

Delivery:
PSNH plans to continue offering Smart Start to municipal customers. Company personnel will meet with municipal customers to inform them of the program, identify potential projects, and to make Smart Start offers. Smart Start offers may be combined with other energy efficiency programs for which the customer is eligible.

This program provides eligible customers with an opportunity to purchase energy efficient products and services with no up-front costs.

Budget:	2009	2010
Program Implementation	$50,000	$50,000

Measures of Success & Market Transition Strategy:
Success factors for this program include attaining the planned participation goal, achieving high customer satisfaction ratings, and having a low default rate on Smart Start loans.

F. ENERGY STAR® Homes Program Enhancement: Geothermal and Air Source HP Option

Overview:
This enhancement will provide an incentive for customers to install geothermal and air source heat pumps as part of the ENERGY STAR Homes Program.
Delivery:
Delivery would be coordinated with the CORE ENERGY STAR Homes Program. Builders working with Geothermal systems contractors and/or HVAC contractors would provide the services specific to these options.

	2009	2010
Goals/Benefits:		
Estimate number of customers to be served	40	48
Projected lifetime kWh savings:	16,723,166	20,590,605
Projected Benefit/Cost Ratio:	1.48	2.08

According to the Environmental Protection Agency, geothermal systems are the most energy efficient, environmentally clean, and cost efficient space conditioning systems available[29]. PSNH has been a strong supporter of geothermal systems in New Hampshire since 1994. More than 400 New Hampshire builders, contractors, and vendors have participated in earlier programs. The industry is growing as evidenced by customer demand and attendance at manufacturers' heat pump training sessions around the state. PSNH has also seen an interest by builders, HVAC contractors and customers to install Air Source Heat Pumps in New Hampshire. This enhancement to the ENERGY STAR Homes Program is important to the continued viability and growth of geothermal and Air Source Heat Pump systems in New Hampshire.

Budget:

January 1 - December 31, 2010 Budget:	$346,769	$360,016

Measures of Success & Market Transition Strategy:
Success factors for this program include attaining the planned participation and energy savings goals. The geothermal and air source heat pump options would be available for the duration of the ENERGY STAR Homes Program.

[29] http://www.ghpc.org/home.htm

G. Education Enhancement - C&I Customer Partnerships

Overview:
Partner with up to five customer groups to provide focused education to members on energy efficiency technologies and opportunities available in NH.

Delivery:
There is no set format envisioned for this proposal; it is intentionally left open to accommodate a wide range of opportunities. However, a few examples may serve to illustrate the type of partnerships undertaken so far.

In 2009, PSNH partnered with:

- ✓ the New Hampshire Community Technical Colleges to provide training and educational tools and equipment to reinforce the infrastructure for energy efficiency in New Hampshire and provide hands-on experiences for the next generation of energy auditors. For example, a Cellulose Insulation Blower was purchased in 2009 for the Manchester Community College to provide students with hands-on experience using the newest techniques in insulating homes. Also, a Building Performance Institute (BPI) training program has been established at the Manchester Community College. Earlier this year a train-the-trainer class was held to establish a pool of instructors. As of this filing, three BPI certification classes have been conducted.

- ✓ the NH Lodging & Restaurant Association in the development and implementation of a "sustainable lodging" program. The goal of the program was to work with the state's lodging and restaurant industry to address energy efficiency, waste stream management, and water usage. The program specifically targets the needs of the restaurant and lodging industry in New Hampshire through Seminars, Newsletters, Webinars, and the installation of efficiency measures.

Goals/Benefits:
In its order[30] approving the CORE Programs, the Commission expressed interest in finding innovative approaches for market transformation. PSNH believes this proposal provides an opportunity to work with customers and other parties to develop alternatives to traditional approaches.

	2009	2010
Budget:		
January 1 - December 31, 2010 Budget:	$30,000	$30,000

Measures of Success & Exit Strategy
Specific success factors will vary depending on the partnership; however, in general, the goal will be to advance the partnership to a point where it can become self-sustaining.

[30] Order No. 23,850, November 29, 2001, page 18

H. C&I RFP Program for Competitive and Economic Development

Objective:
To promote competitive market development in the energy efficiency industry by encouraging third parties to bid for energy efficiency projects on a competitive basis. The RFP Pilot Program is aimed at energy efficiency potential from large C&I projects that are not participating through other existing energy efficiency programs.

Target Market:
The minimum customer size is 350 kW of demand, the minimum project energy saving is 100,000 kWh per year (can be aggregated sites), and the minimum total project cost is $150,000. C&I customers of PSNH, energy service companies[31] and other third party service providers representing C&I customers are eligible to participate in this program.

RFP participants can be any PSNH customer[32], energy service company, or third party service provider representing a PSNH customer who contracts with PSNH to provide energy savings from an approved energy efficiency project. It is expected that bidders typically will be of two types:

1. customers with significant in-house technical capability, or
2. customers allied with firms that specialize in implementing energy efficiency projects and have a staff of professionals trained to identify energy efficiency opportunities, calculate potential savings, design system modifications, manage construction and installation of energy efficiency measures, and measure energy savings.

Incentives:
The program offers incentives for measurable energy savings achieved by the installation of energy efficiency measures as specified in a project agreement. Eligible improvements include energy-efficient equipment, products, and measures that are cost-effective according to the criteria established by the NH Energy Efficiency Working Group and approved by the NHPUC. The estimated savings are verified using approved protocols. The estimated savings are measured based on the difference between the energy use of the new versus the existing customer equipment.

Eligible measures include replacing standard fluorescent lighting with high efficiency fluorescent lighting, installing variable speed drives on motors, installing lighting controls to reduce lighting operating hours, and replacing low efficiency air conditioning equipment with high efficiency equipment.

Measures that are not eligible include new construction projects, any power-producing project such as cogeneration, switching from electric energy to another fuel (fuel switching), or any repair or maintenance project.

[31] Contractors involved in the implementation of PSNH's C&I energy efficiency programs are ineligible to participate in the RFP Program.
[32] Except for Rate B customers (see Availability under C&I Program Descriptions).

One of the program's goals is to assess the degree to which projects require incentives. As such this program will not have published incentives. Each proposal will need to identify the required incentive amount. All bids are evaluated based upon a comparison of energy savings and other price and non-price variables. Non-price variables include such factors as whether the project includes measures other than lighting (e.g., HVAC and process measures) and whether the environmental impacts reduce on-site emissions or waste stream impacts. All projects will be evaluated on the basis of established cost-effectiveness criteria.

Incentive Strategy:
Incentives are intended to be market driven in that bidders (or potential participants) request the incentive level that is needed to implement a retrofit or replacement energy efficient project. If their incentive request is too high or their project savings are too low, a competing project will be awarded the limited RFP Program funds.

Delivery:
Potential bidders are invited to an annual bidders conferences" to learn how to participate in the program. PSNH will provide information on this program at this session as well as on the PSNH website to PSNH customers greater than 200 kW peak demand who might qualify either individually or on an aggregated demand basis. Potential energy service companies and third party service providers will also be notified. Collateral materials will be made available to educate these groups on the RFP Program.

	2009	2010
Goals/Benefits:		
Estimated Number of Customers to be served:	3	3
Projected lifetime kWh savings:	13,287,932	27,144,006
Projected Benefit/Cost Ratio:	1.97	2.83

This program is designed to foster competition and to stimulate the development of innovative energy efficiency projects. It will also provide an opportunity to provide incentives for larger projects that might not be pursued because of funding "caps" in other programs. And finally, it will provide the data needed to assess whether or not the incentive levels in the other C&I programs are set appropriately. For example, if bidders in the RFP program consistently seek incentives lower or higher than those offered in the CORE C&I energy efficiency programs, it may be lead to review and possible revision of the CORE incentive levels.

Budget:

January 1 - December 31, 2010 Budget:	$475,726	$507,859

Measures of Success & Market Transition Strategy:

Success factors for this program include: attaining the planned customer participation and energy savings goals as well as and generating a high level of interest among customers, energy service companies and third party service providers that results in a competitive bidding process.

A decision to discontinue this program will be based on factors such as customer/contractor participation, incentive level requirements, and project level details (e.g. innovative energy efficiency measures vs. lighting only projects). PSNH staff will review the success of this program annually.

UNITIL ENERGY SYSTEMS, INC.

A. Energy Efficiency Website

Overview:
In addition to the CORE programs, Unitil Energy Systems, Inc. ("UES" or "Company") will continue to maintain and enhance as needed, its existing energy efficiency-related ("EE") website and web-based energy use analysis application.

The Company's website provides customers with easy access to energy efficiency-related information and educational materials. Energy savings tips, programs materials and contact information are provided for both the residential and commercial customers.

Customers are also provided with on-line tools which allow them to explore how they use energy in their homes and businesses. The Home*Energy*Suite™ ("HES") features an interactive house to help customers understand where and how energy is used in the home and a home energy calculator that allows residential customers to estimate energy use and costs based on inputs. Other tools in the HES include appliance and lighting calculators, a residential energy library, the Fundamentals of Electricity module, and the popular Kids Korner. The Commercial*Energy*Suite™ ("CES") module helps commercial customers, primarily small-to-medium-sized, understand their energy use and find ways to reduce their operating costs. CES includes an energy calculator (ComCalc) and reference libraries of technical information about commercial buildings and energy use, including the *Understanding Demand* library.

Implementation / Delivery:
Implementation will consist of maintaining and updating the energy efficiency-related website content and the Home*Energy*Suite and Commercial*Energy*Suite. Additionally, the Company is reaching out to primary school educators to make them aware of the resources available to them in our "Teacher Feature" module of Kids Korner.

Goal and Benefits:
This program offers residential and small-to-medium commercial customers a convenient way to examine their energy use and better understand their energy costs. To the extent it can eliminate on-site audits, it is a relatively inexpensive way to provide customers with the information they need to control their energy use. It also provides an alternative option for customers who may not be ready to make energy efficiency investments or simply wish to make improvements on their own.

	2009	2010
Program Budget:		
January 1 - December 31, 2010 Budget:	$38,500	$44,500

Measures of Success:
Success for this education enhancement will be measured by the number of participants ("hits" on the site) and customer feedback on their experience with the on-line resources.

IV. MONITORING & EVALUATION

A. MONITORING AND EVALUATION PLAN

A settlement agreement about Core program efforts in 2006 approved by the New Hampshire Public Utilities Commission on March 17, 2006 (Order No. 24,599 in DE 05-157) transferred responsibility for monitoring and evaluation efforts from the Utilities to Commission Staff. Under that agreement, the Commission agreed to seek input and advice from the utilities on monitoring and evaluation and to also coordinate efforts with the Utilities' Core programs implementation efforts. In addition, there was also agreement:

> (1) to provide utilities with the opportunity to comment on preliminary study findings and results prior to publication, (2) to invite interested parties to attend and provide input at evaluation presentations, (3) to permit utilities, on a case-by-case basis considered in light of study design, costs, schedule and similar issues, to participate in regional monitoring and evaluation studies as well as studies conducted by multi-jurisdictional utilities, and (4) that the Commission would aggressively pursue all available means to protect customer confidential information as permitted by the Right-to-Know Law, RSA 91-A, given that monitoring and evaluation studies frequently require access to such information. (Order No. 24,599, Page 5)

For 2010, the Utilities have identified a number of evaluation activities planned for or needed in New Hampshire. During 2009, the following three activities were completed:

1. **Technical Potential Study:** During 2008-2009 the M&E focus has been on a study to evaluate the potential for cost-effective energy efficiency investments in the residential, small commercial, large commercial and industrial classes in New Hampshire. This study was completed and a final report was issued in January 2009. Attachment J includes charts created by the utilities highlighting the results of this study and mapping the existing Core Programs to many of the opportunities identified.

2. **Avoided Energy Supply Cost Study:** Additionally, an updated avoided energy supply cost study was completed in 2009 for use in supporting 2010 and 2011 planning efforts. Avoided energy supply costs are typically updated on a regional basis every two years. New England electric and gas utilities hired a consultant to update the avoided energy and capacity supply cost projections that are used to analyze the cost-effectiveness of energy efficiency programs in the region. The research will produce a long-run forecast of avoided electric energy and capacity costs in New Hampshire, including internalized avoided emission costs, as well as a long-run forecast of fossil fuel costs. This study was recently completed in September 2009. The New Hampshire allocated share of the project budget is $33,300.

3. **PUC Audit:** The New Hampshire Public Utilities Commission has undertaken an audit the CORE Energy Efficiency Programs in 2008 and has been working with each utility to review their data. The results of this audit will be available in the Fall of 2009.

For 2010, the NH Utilities recommend performing the following evaluations that are needed as part of the CORE programs and/or to continue reporting FCM Other Demand Resource savings to ISO-NE:

1. Multi-Year Evaluation Plan: This plan will describe the measurement and verification projects and activities that will be required to demonstrate the effectiveness and quantify the savings achieved by energy efficiency programs that are funded by New Hampshire customers via the System Benefits Charge. The evaluation plan will also address the requirements that have been established by ISO New England to measure and verify the demand reduction value of qualified demand resources offered into the ISO-NE Forward Capacity Market.

2. ENERGY STAR® Lighting Program Lighting Impact Evaluation: An impact and process evaluation of this program was last completed in 2003.

3. Small Business Energy Solutions Program Impact Evaluation: An impact evaluation of this program was last completed in 2004.

4. Commercial & Industrial New Equipment and Construction Program Impact Evaluation: A commercial and industrial new construction baseline evaluation was last completed in 2003.

5. Home Energy Solutions Fuel-Neutral Pilot Program Evaluation: An evaluation of the HES Pilot will be conducted in 2010 after the end of the heating season. The purpose of the evaluation will be to review the effectiveness of program delivery and to verify energy savings achieved by the energy efficiency measures installed during the 2009 implementation year.

6. Regional Projects: The following projects are being jointly sponsored either by utilities in the New England states or by utilities in the Northeastern states, including New England, New York and Mid-Atlantic states. NEEP Regional Evaluation, Measurement and Verification Forum (EM&V) activities planned include:
   a. Protocol Development Projects:
      #A1. Glossary of EM&V Terms & Definitions Project
      #A2. Develop Common EM&V Methods Guidelines and Survey Savings Assumptions.
      #A3: Survey Existing EE Savings Reporting Requirements and Develop Common Reporting Guidelines.
      #A4: EM&V Protocol Development/Modifications in Wholesale Capacity Markets (for ISO-New England and PJM wholesale markets).
      #A5: Develop Common Savings Assumptions/Algorithms Database. Sub-region Mid-Atlantic project
   b. Research & Evaluation Projects:
      #B1: Loadshape Project - Survey Available Data Sources (Phase 1), and Conduct Primary Research (Phase 2).
      #B2: C&I Lighting Measure Life and Persistence Project.

#B3: Scoping Projects: Survey Net Savings Methods, Impact of EE on Advancing Codes and Standards.

c. Education & Information Access Activities:
#C1: Develop EM&V Forum website
#C2: Hold Annual Forum Public Meeting
#C3: Develop EM&V Forum library
#C4: Develop communications plan, information sharing and confidentiality policy

B. REPORTING

Beginning in 2002, the NH Electric Utilities have worked with Parties and Staff to refine the NH CORE Energy Efficiency Quarterly Reports that are used to help gauge the progress of both the CORE Programs and the Utility Specific Programs. These reports provide information on the progress towards goals of each program by utility and in aggregate. These quarterly reports are defined as follows:

1. "**CORE NH Program Highlights**" compares program goals to actual accomplishments and includes data about progress toward achieving program goals, including actual expenditures, participation, and lifetime kWh savings.

2. "**Budget Details Report**" provides a series of pie charts illustrating program and sector (e.g. residential and commercial/industrial) expenditures by the program tracking activities defined on the next page.

3. "**Home Energy Assistance Program Report**":
   - states the number of single family homes and the number of multi-family units that received energy efficiency measures and services for that quarter.
   - identifies the county where energy efficiency services were provided and includes the number of units in the county where such services were provided or measures installed.
   - identifies for each Electric Utility and for the state in total, the number of projects completed, the number of jobs funded by both CORE and DOE, the cumulative collaborative DOE expenditures, the cumulative collaborative CORE expenditures, and the cumulative non collaborative CORE expenditures.
   - provides a breakdown of the types of measures installed and services provided sorted by county, utility, and dwelling type (e.g. single or multi-family).
   - provides a breakdown of completed jobs by county and contractor type (e.g. Local CAA, Outside CAA, Private Contractor).
   - includes an action plan for any utility that is below its quarterly production goals by more than 20%. The action plan shall include revised production goals. The subsequent quarterly report shall report on the status of the revised production goals.

4. **"Forward Capacity Market Report"** documents the payments received from ISO-NE and the associated expenses with this effort.

These reports will be submitted to the Commission with copies to the Parties and Staff in advance of quarterly meetings of the CORE Management Team with Parties and Staff.

Program Tracking Activities	
Tracking Activity	**Description**
ADMINISTRATION – INTERNAL	Used to track all internal utility costs associated with program design, development, regulatory support, and quality assurance. Costs captured in this activity include: employee labor, benefits, expenses, materials, and supplies
ADMINISTRATION – EXTERNAL	Used to track the total cost of contractors and consultants used in support of program design, development, regulatory support, and quality assurance. Captures all of the utility's external costs associated with program administration.
CUSTOMER REBATES & SERVICES	All rebate dollars paid directly to customers as well as "indirect" payments to customers such as discounted prices. Also includes all costs directly attributable to providing energy efficiency services to customers (e.g. technical audits, employee and contract labor for installing efficiency measures, expenses, materials, and supplies).
INTERNAL IMPLEMENTATION SERVICES	Used to track the utility's internal costs associated with delivering program services to customers. Costs captured in this activity include: employee labor, benefits, expenses, materials, and supplies.
MARKETING	Used to track all costs associated with marketing, advertising, trade shows, toll free numbers, and WEB site. Costs captured in this activity include: labor, benefits, expenses, consultants, contractors, materials, and supplies.
EVALUATION	Used to track all costs associated with monitoring and evaluation. Costs captured in this activity include: labor, benefits, expenses, consultants, contractors, tracking systems, materials, and supplies.

V. Shareholder Incentive Methodologies

Basic Calculation

The NH Electric Utilities are allowed to earn a portion of their energy efficiency budget as an incentive "to motivate companies to achieve and exceed program goals." NHPUC Order No. 24,203, at 13 (September 5, 2003). The formula used to calculate this incentive was initially proposed by the Energy Efficiency Working Group in its final report and the Commission adopted the formula in its order regarding Electric Utility Restructuring – Energy Efficiency Programs, 85 NHPUC 684, 694 (2000) and approved the formula in Order No. 23,982 (May 31, 2002) regarding the CORE Energy Efficiency Programs. Most recently, the Commission found that "the present incentive mechanism provides a just and reasonable balance between the interest of shareholders and the interest of customers." Order No. 24,203, at 13 (September 5, 2003)

Three factors influence the incentive: (1) the size of the budget, (2) the ratio of the actual Benefit-to-Cost Ratio achieved to the predicted Benefit-to-Cost Ratio, and (3) the ratio of the kWh savings achieved to the predicted kWh savings. The basic formula is:

$$\text{INCENTIVE} = [4\% \times \text{BUDGET}] \times [(BC_{ACT}/BC_{PRE}) + (kWh_{ACT}/kWh_{PRE})]$$

Where:

INCENTIVE - Shareholder incentive in dollars
BUDGET – Total dollars budgeted less the shareholder incentive
BC_{ACT} - Actual Benefit-to-Cost ratio achieved
BC_{PRE} - Predicted Benefit-to-Cost ratio
kWh_{ACT} - Actual Lifetime Kilowatt-hour savings achieved
kWh_{PRE} - Predicted Lifetime Kilowatt-hour savings

Residential and Commercial/Industrial Incentive Components

The shareholder incentive is made up of a residential component and a commercial/industrial component. The residential component is determined by summing the budgets and kWh savings and calculating a combined program benefit-to-cost ratio for residential programs. These values are then used in the formula above to determine an overall residential incentive. Programs included in the residential calculation are as follows: NH Home Performance with Energy Star, Low Income Energy Efficiency (Home Energy Assistance), ENERGY STAR® Homes, ENERGY STAR® Lighting, ENERGY STAR® Appliances and any utility specific programs. The commercial/industrial component is determined in an analogous manner. Programs included in the commercial/industrial calculation are as follows: New Equipment & Construction, Large C&I Retrofit, Small Business Energy Solutions, Education, and any utility specific programs.

Avoided Costs

The NH Electric Utilities requested and the NHPUC approved[33] the use of a single avoided cost methodology for Generation, Transmission, and Distribution. In determining the Benefit-to-Cost ratio, the NH Electric Utilities used the avoided generation costs from the *2009 Avoided-Energy-Supply Costs in New England*[34].

For the avoided Transmission and Distribution costs, we used the weighted average of all the NH Electric Utilities costs. Refer to Attachments B and C for additional information on avoided costs.

Other assumptions used in determining the future and present values of benefits include inflation at 1.56%[35] per annum and a nominal discount rate of 3.25%[36].

Threshold Conditions

There are three threshold conditions that apply to the shareholder incentive calculation. Specifically,

1. The combined benefit-to-cost ratio for residential programs must be 1.0 or greater. If not, there is no incentive associated with program cost effectiveness. The commercial/industrial component is calculated similarly.

2. The actual lifetime kWh savings for the residential programs must be 65% or greater than the predicted lifetime kWh savings; otherwise, there will be no incentive associated with kWh savings. Kilowatt-hour savings for the commercial/industrial component are treated similarly.

3. The Residential and Commercial/Industrial components are calculated separately and are independent of one another. The residential incentive component is capped at 12% of the combined budget for residential programs. The commercial/industrial component is calculated similarly.

[33] DE 01-057, Order No. 23,850, November 29, 2001, page 19.
[34] *Avoided Energy Supply Costs in New England*, August 2007.
[35] Used the Gross Domestic Product: Implicit Price Deflator and calculated the difference between the April 1, 2009 and April 1, 2008 rates. See http://research.stlouisfed.org/fred2/data/GDPDEF.txt
[36] Prime rate as of June 1, 2007, in accordance with Energy Efficiency Working Group Report, Section 7, page 17. Prime rate data taken from http://www.moneycafe.com/library/primerate.htm.

Potential Earnings: Shareholder Incentive Set Aside

The NH Electric Utilities have set aside a portion of their budget for the shareholder incentive. The Energy Efficiency Working Group Report states, "For incentive calculation purposes only, 'planned energy efficiency budget' is defined as the total program budget minus shareholder incentives[37]…" To comply with this, the NH Electric Utilities budgeted for an 8% shareholder incentive as follows:

$$INCENTIVE = 8\% \times [BUDGET_{TOT} - INCENTIVE]$$

Where:

INCENTIVE - Shareholder incentive in dollars

$BUDGET_{TOT}$ – Total dollars budgeted

Solving this equation for the shareholder incentive:

$$INCENTIVE = 0.074074 \times BUDGET_{TOT}$$

Smart Start Shareholder Incentive

A different methodology has been adopted by the Commission for determining the Smart Start shareholder incentive. It is calculated as 6% of loans repaid.

Shareholder Incentive Calculations

Attachments D, E, F, and G present each utility's calculations for cost effectiveness, shareholder incentive, planned benefit-to-cost ratios, and planned energy savings for each program.

[37] DR 96-150, Energy Efficiency Working Group Report, July 6, 1999, page 21, part 3f.

VI. Attachments

ATTACHMENT A: CORE/WXN COLLABORATION IMPLEMENTATION PLAN

Project Timeline

While each customer situation may be different, the CAAs will make every effort to contact a customer within two weeks of the time the customer is assigned and to work with the customer to conduct all necessary audits within four weeks, and to complete the installation of all approved measures within eight weeks. The following illustrates the typical project timeline.

Task	Week 1	Week 2	Week 3	Week 4	Week 5	Week 6	Week 7	Week 8
Schedule Audit								
Conduct Audit								
Transmit Data To OEP/Utility								
Provide Services								

Implementation Targets:

Initial Contact Customer:	2 weeks
Lead Assignment to Invoice Submittal:	8 weeks (on average) Up to 10 weeks (with exceptional conditions) Over 10 weeks – CAAs must submit customer specific documentation explaining the reason(s) for the extended timeline. No case should exceed 12 weeks.

Program Outline

1. Customer Intake
   This step produces a prioritized list of eligible customers from the combined intake efforts of the Wxn and CORE programs. Eligibility for CORE includes customers who meet the eligibility criteria for participation in the Electric Assistance Program, the Fuel Assistance Program, the DOE Weatherization Program or anyone living in subsidized housing. Customers who are eligible for DOE Weatherization and who authorize any required data sharing between their Utility and CAA, will be eligible for funding from both programs. See the Customer Intake Process diagram below for additional detail.
   a) CORE Customers (Utility Marketing)
      i. Marketing priority is based on (first priority) electric heat and (second priority) high usage, and then to all EAP participants
      ii. Utilities send marketing package with Customer Reply Card
      iii. Interested customers request services by returning Customer Reply Card
   b) Direct inquiries to Utilities from customers not participating in the EAP
      i. Customers accepted based on (first priority) electric heat and (second priority) high usage
      ii. Customer's eligibility is verified by CAA.
      iii. Customer is notified of eligibility outcome.
   c) Weatherization Program Customers (CAA Marketing)

i. Customers are prioritized in accordance with DOE Wxn Program rules (e.g. elderly, young children, persons with disabilities, households with high energy burden), and as needed, to meet CORE prioritization requirements described in Section (a)(i) above.

ii. Customers will be given an opportunity to request services from both Wxn and the CORE energy efficiency program and authorize required data sharing.

2. Work Scheduling

In this step eligible customers are assigned to a CAA, and an audit is scheduled. Every effort will be made to contact the customer within a two week period to schedule the audit at a mutually agreeable time.

a) Utility assigns jobs to CAA. Alternatively, Utility may request CAAs to develop leads and initiate A-lead jobs[38] from the Wxn waiting list. CAAs initiate B-lead jobs[39] from the Wxn waiting list.

b) CAA prescreens customer (e.g. electric heat? high use? still at this address?, previously served? any remaining opportunities? Etc.)

c) Utility assigns all customers who will receive CORE program services and who pass the prescreen regardless of how they were brought into the program (EAP list, direct inquiry, and Wxn customers). [*Note: Based on field experience, this step may be moved to a point after the audit if it can simplify overall implementation of the program.*]

d) CAA schedules audit within two weeks of job assignment.

e) CAA notifies Utility of audit schedule date.

f) If audit is not scheduled within two weeks, Utility may elect to reassign job to another CAA or a non-CAA contractor, approved by the Utility and trained in low income program delivery.

3. Conduct Audit

In this step the CAA will conduct all necessary home audits as detailed below, the initial blower door and combustion air zone testing as appropriate, and provide the customer and the Utility with their report. The home visit is typically completed within four weeks of assigning the job; report distribution may take longer as noted below.

a) For A-lead jobs that include weatherization services, the audit software creates a list of cost effective measures to install.

b) For B-lead jobs conduct Baseload Audit which will identify measures such as refrigerator replacement, CFLs, etc. The Utility provides a list of predetermined cost effective measures to install.

c) Auditors will also identify any health and safety items and/or customer education that need to be addressed.

d) The auditor will review the preliminary audit results with the customer and/or landlord, and if appropriate, seek written customer approval to provide weatherization services.

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[38] Jobs where CORE pays for conservation measures, i.e. wall insulation, air sealing, baseload etc. and DOE pays for health & safety and repairs (For details see Section on Project Funding).

[39] Jobs where DOE pays for non-baseload conservation measures, wall insulation, air sealing, health & safety, and repairs and CORE pays for baseload (For details see Section on Project Funding).

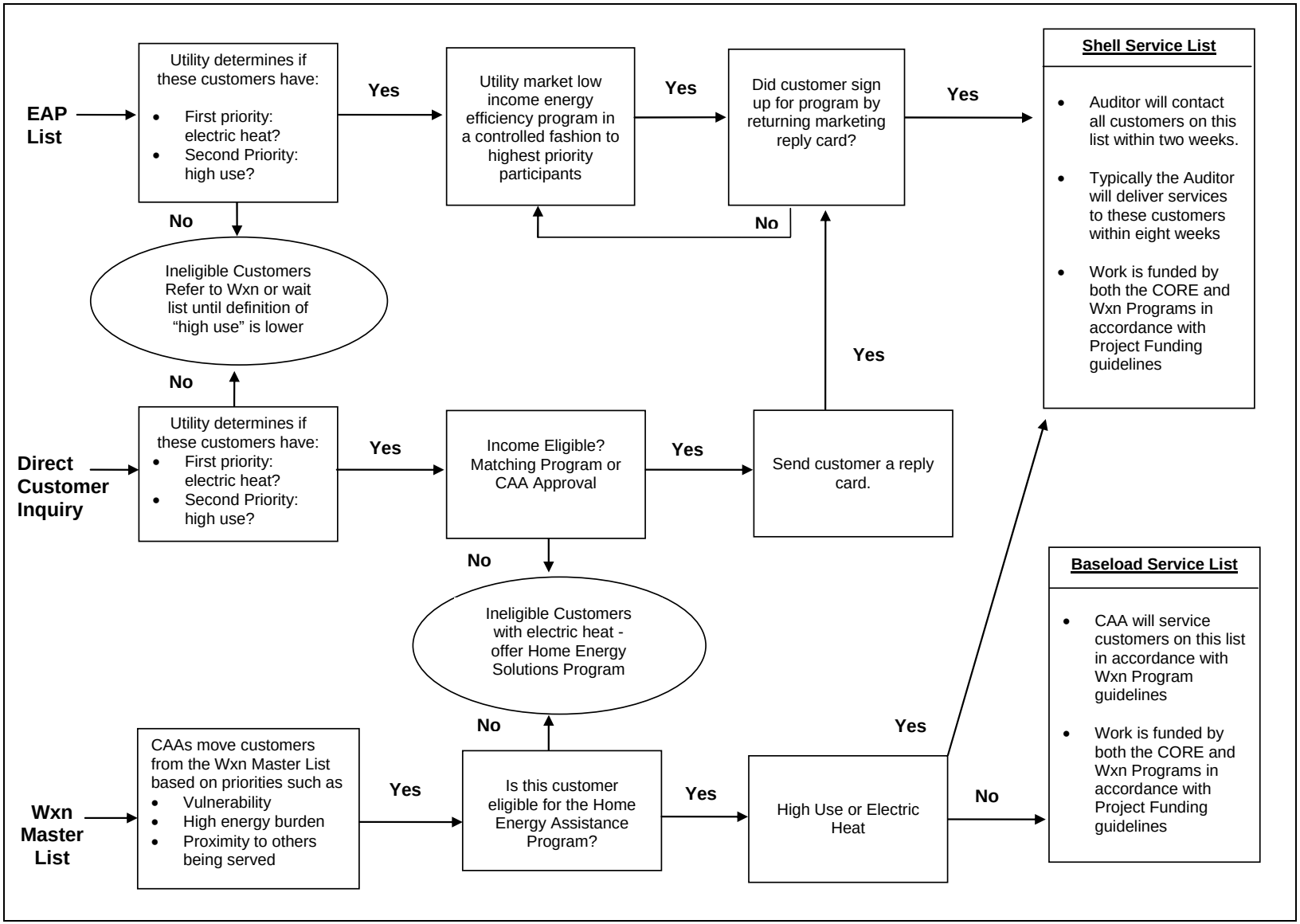
e) Audit data is sent electronically to Utility within six weeks of the time the job is assigned.
f) During the home visit, the CAA auditor identifies energy saving actions the customer can take and provides appropriate educational materials.
g) A report is provided to customer/landlord within two weeks of the home visit and details the list of proposed services to be provided.

4. Provide Services
This step includes the installation of measures, continuing customer education, the inspection of all completed work, customer signoff, and invoicing.
   a) All services, final inspections, and invoicing will typically be completed within eight weeks of authorization to provide services.
   b) CAA conducts final inspection on all jobs. Final inspection includes:
      i. Post-completion blower door and combustion air zone test
      ii. Review of all work completed by sub contractors to ensure compliance with program specifications
   c) CAA delivers education component of program including:
      i. Energy efficiency materials (as appropriate, may be covered in step 3.f above)
      ii. Review the "as installed" measures and audit report with the customer/landlord
   d) Obtain customer/landlord acknowledgement and approval of the services provided.
   e) When job (including Final Inspection) is complete, CAA electronically sends job completion report and invoice to Office of Energy & Planning (OEP) and Utility as appropriate.
   f) A customer satisfaction survey is mailed to the customer; survey results are shared by the Utility and OEP as appropriate.

5. Quality Assurance
This step provides overall assurance that services are delivered in compliance with all program requirements.
   a) To ensure compliance with federal auditing requirements, OEP personnel will inspect a sampling of all jobs receiving Wxn funding. The Utilities will coordinate their QA activity with OEP when possible to avoid duplicate inspections of the same premise.
   b) QA will typically be conducted on a minimum of 10% of all jobs – more as deemed necessary.

6. Job Closeout
This step includes follow-up on any customer concerns and invoice payment.
   a) Follow-up on any call back or QA concerns before processing invoices for payment.
   b) Review and pay CAA invoices. Check for errors such as "double billing."
   c) Process Customer Satisfaction Surveys.

Customer Intake Process



Project Funding

Measures will be funded based on the table below. The current program "caps" are $5,000 for the CORE low income program and $2,500 for Wxn.

Measure Description	Funding Source	
	Shell	**Baseload**
Health & Safety	CORE/DOE[40]	DOE
Repair/Replace Non-electric Heating System[41]	DOE	DOE
Refrigerator	CORE	CORE
Lighting	CORE	CORE
Weatherization Services	CORE	DOE
Repair/Replace Electric Heating System[42] & Controls	CORE	CORE
Additional Measures As They Are Defined	*To Be Determined*	*To Be Determined*

CORE Program Auditor Training

All program auditors will be trained in the following areas. Training will be coordinated with utilities, OEP, and software vendor(s) to insure continuity, efficiency and consistency:

a) Sensitivity to low income customer's needs and guidelines for safe professional behavior in the low income community
b) Health and safety protocols related to Wxn will be reviewed and emphasized
c) Health and safety elements relating to appliances will be covered in depth
d) In-depth appliance diagnostics training
e) Training on customer education including how adults learn and how best to motivate customers to conserve.
f) Elements (b) through (e) must be coordinated with appliance software training and must thoroughly address the elements in the Customer Education Specifics Chart.
g) Auditing software and the process for communicating data to the Utilities.

The training will be offered as needed to accommodate new staff and changing program requirements. Costs for training may be shared between OEP and the Utilities.

[40] In the event the work is assigned to a non-CAA contractor or DOE funds are not available, CORE funds may be used for Health & Safety measures.
[41] Applies to qualifying systems fired by oil, propane, and solid fuels.
[42] Applies to electric heating systems only (for National Grid, does not apply to thermal storage or heat pump systems).

Training For Customer Service Representatives

Utility Customer Service Representatives will be trained to handle customer inquires regarding the CORE/Wxn program as well as other related programs designed to assist low income customers such as the Electric Assistance Program, the Fuel Assistance Program, and winter protections.

Low Income Customer Education and Training

Customer education will include a review of the customer's energy usage, and ways to reduce the energy usage. The auditor will discuss advantages of efficient lighting and appliances as well as life style changes that could reduce energy usage. The auditor will also discuss the weatherization opportunities in the customer's home. The booklet *Practical Tips for Saving Energy & Money at Home*, will be provided to all program participants. Written materials will be available in English, Spanish, and other languages as appropriate.

Capacity Planning

The tables on the next page depict (1) the Quarterly Production Schedule for each Utility and (2) the year end Job Distribution By County and By Utility.

The Utilities are committed to working with OEP and the CAAs to ensure there are sufficient qualified CAA personnel to meet program goals. If problems develop, the Utilities will address them with the CAAs and OEP before reassigning work to non-CAA contractors. It is understood that OEP cannot reimburse non-DOE approved subgrantees, and this must be taken into account in any work reassignment plan. For example, this would create significant problems in reassigning work that is already in progress. As such, to the extent non-CAA contractors were required to meet program goals, they would likely be given work that had not yet been assigned.

Maximizing Potential Benefits To Income Eligible Customers

The fundamental principle underlying the collaboration with the Community Action Agencies (CAAs) is that by working together, it will be possible to bring more services to more low income customers. As detailed in the Project Funding Table above, both Shell and Baseload jobs will be jointly funded by CORE and DOE dollars for all jobs implemented by the CAAs. The following table details the quarterly production schedule as well as the annual distribution of jobs by county and utility.

Low Income CORE & Wxn Participants by County

2010 HEA Quarterly Production Schedule

Utility	Total Jobs	1st. Qtr. 24%	2nd. Qtr. 26%	3rd. Qtr. 26%	4th. Qtr. 25%
Unitil	83	20	22	22	19
NGRID	45	11	12	12	10
NHEC	72	14	20	21	17
PSNH	853	204	218	218	213
TOTAL	1,053	249	272	273	259
Year-to-date TOTAL		249	521	794	1,053

2010 HEA Job Distribution By County and By Utility

BY COUNTY	Unitil		Nationalgrid		NHEC		PSNH		Totals		Grand Total
	Shell	Baseload	Shell	Baseload	Shell	Baseload	Shell	Baseload	Shell	Baseload	
	A	B	A	B	A	B	A	B	A	B	
Belknap					3	8	60	11	63	19	82
Carroll					2	8	90	8	92	16	108
Cheshire			5	2			55	9	60	11	71
Coos					1	3	95	8	96	11	107
Grafton			13	3	6	14	32	6	51	23	74
Hillsborough			6	1			180	65	186	66	252
Merrimack	28	14			1	5	60	11	89	30	119
Rockingham	34	7	7	1	6	5	32	22	79	35	114
Strafford					0	0	51	8	51	8	59
Sullivan			5	2	2	8	41	9	48	19	67
Program Totals	62	21	36	9	21	51	696	157	815	238	
Grand Totals	83		45		72		853		1,053		1,053

A = Shell job - where Utility pays for conservation measures, ie wall insulation, air sealing, baseload etc. and DOE (or other programs) pays for H&S heating system, repairs (See Section on Project Funding)

B =Baseload job - where Utility pays for baseload measures and DOE (or other programs) pays for non-baseload conservation measures, ie: wall insulation, air sealing, etc., H&S and repairs (See Section on Project Funding)

ATTACHMENT B: COMPLETED MONITORING & EVALUATION STUDIES

Evaluation Studies Completed since 2000

1. Hagler Bailly, Inc., 1999 Commercial & Industrial Free Rider Study, June 20, 2000.
2. RER, 1999 Energy Initiative Lighting Program Impact Evaluation, June 20, 2000.
3. RLW Analytics, Inc., Energy Initiative and Small C&I Programs Indoor Prescriptive Lighting Impact Study, June 19, 2000.
4. Michael P. Gallaher, Stephen A. Johnston, Laura J. Bloch, Research Triangle Institute Center for Economics Research, Small Commercial and Industrial Program Evaluation, June 2000.
5. RLW Analystics, Sample Design for the 1999 Custom Evaluation Studies Final Report, February 16, 2000.
6. RLW Analystics, Impact Evaluation analysis of the 1999 Custom Program Final Report, June 28, 2000.
7. SBW Consulting, Inc., Impact Evlauation Study of 1999 Custom Industrial Process Installations, June 1, 2000.
8. DMI, Impact Evaluation of 1999 Custom Industrial Process Installations, June 8, 2000.
9. Michael Ketcham, David Wortman, PE, Wortman Engineering, Impact Evaluation Study of 1999 Custom O&M Installations, June 7, 2000.
10. Michael Ketcham, David Wortman, PE, Wortman Engineering, Impact Evaluation Study of 1998 Custom Comprehensive Installations, February 24, 2000.
11. RER, Multifamily EnergyWise Program Impact Evaluation, July 2000.
12. quantec LLC, Impact Evaluation: Single-Family EnergyWise Program, July 10, 2000.
13. RLW Analytics, ENERGY STAR Market Update FINAL REPORT, June 28, 2000.
14. Easton Consultants, Inc., and Xenergy, Inc., Northeast Premium Motor Initiative Market Baseline and Transformation Assessment Final Report, August 17, 1999.
15. Aspen Systems Corporation, Final Report The Compressed Air Systems Market Assessment and Baseline Study for New England, January 7, 2000.
16. RLW Analystics, Commercial & Industrial O&M Market Segment Baseline Study Final Report, July 1999.
17. PA Consulting Group, National Grid 2000 Commercial and Industrial Free-Ridership and Spillover Study, August 24, 2001.
18. RLW Analytics, Sample Design for the 2000 Custom Evaluation Studies, July 19, 2001.
19. RLW Analytics, Impact Evaluation Analysis of the 2000 Custom Program Executive Summary, July 23, 2001.

20. HEC, Inc., Impact Evaluation Study of 1999 Custom HVAC Installations, December 8, 2000.
21. Science Applications International Corporation, 2000 Custom Lighting Impact Evaluation Executive Summary, July 17, 2001.
22. Xenergy, Inc., Compact Fluorescent Toirchiere Impact Evaluation Executive Summary, August 17, 2001.
23. PA Consulting Group, National Grid 2001 Commercial and Industrial Free-ridership and Spillover Study, July 2, 2002.
24. Shon Kraley, Ph.D., Lauren Miller, Heather Williams, M. Sami Khawaja Ph.D., Quantec, LLC, Impact Evaluation: Energy Initiative Prescriptive Lighting, 2000 – 2001, June 25, 2002.
25. Michael P. Gallaher, Stephen A. Johnston, Andrea Goesele, RTI Health, Social, and Economics Research, Small Commercial and Industrial Program Evaluation, June 2002.
26. Regional Economic Research, Inc. (RER), Impact Evaluation of the 2001 Multifamily Energy Wise Program, June 21, 2002.
27. Ebu Alpay, Scott Dimetrosky, Ken Seiden, Ph.D., Quantec, LLC, Impact Evaluation of the 2001 Appliance Management Program, July 1, 2002.
28. Bruce Harley, Conservation Service Croup, Inc., Energy Consumption Analysis of the ENERGY STAR® Homes Program, June 15, 2002.
29. Select Energy Services, Inc., Evaluation of 2000 Custom Process Installations – Part I, June 26, 2002.
30. DMI, Final Report for National Grid USA Service Company Evaluation of 2000 Custom Process Installations-Part II, June 26, 2002.
31. SBW Consulting Inc., Impact Evaluation of 2000 Custom Comprehensive Installation FINAL REPORT, June 27, 2002.
32. RLW Analystics, Impact Evaluation Analysis of the 2001 Custom Program, June 26, 2002.
33. PA Government Services, Inc., National Grid 2002 Commercial and Industrial Free-ridership and Spillover Study, May 30, 2003.
34. RLW Analytics, Design 2000plus Lighting Hours of Use and Load Shape Measurement Executive Summary, May 30, 2003.
35. RLW Analytics, Sample Design for the 2002 Custom Evaluation Studies, July 2, 2003.
36. SBW Consulting, Inc., Evaluation of 2001 Custom Process Installations – Part I FINAL REPORT, June 23, 2003.
37. DMI, Evaluation of 2001 Custom Process Installations – Part II, June 27, 2003.
38. Select Energy Services, Inc., Evaluation of 2001 Custom Process Installations – Part III Compressed Air, June 30, 2003.
39. Select Energy Service, Inc., Evaluation of 2001 Custom HVAC Installations, July 9, 2003.
40. RLW Analytics, Impact Evaluation Analysis of the 2002 Custom Program, July 2, 2003.
41. Jane S. Peters, Ph.D., Marjorie R. McRae, Ph.D., Jessica B. Letteney, Research Into Action, Inc. and Tom Rooney, P.E. GDS Associates, Inc., Evaluation of the

Building Operator Training and Certification (BOC) Program in the Northeast, September 6, 2002.
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45. Select Energy Services, Inc., Evaluation of 2002 Custom Process Installation s – Part I, July 15, 2004.
46. DMI, Evaluation of 2002 Custom Process Installations Part II, June 2, 2004.
47. SBW Consulting, Inc., Impact Evaluation Study of 2002 Custom Process Installations Part III FINAL REPORT, July 16, 2004.
48. Science Applications International Corporation, National Grid USA Service Company Impact Evaluation of 2002 Custom Comprehensive Projects Final Report, June 8, 2004.
49. Science Applications International Corporation, Impact Evaluation of 2002 Custom Lighting Installations Final Report, July 15, 2004.
50. RLW Analytics, Impact Evaluation Analysis of the 2003 Custom Program, July 23, 2004.
51. Summit Blue Consulting, Billing Analysis of the Small Business Services Program Final Report, June 7, 2004.
52. RLW Analytics, 2003 Multiple Small Business Lighting Retrofit Program Impact Evaluation Final Report, June 2004.
53. RLW Analytics, National Grid 2003 Energy Initiative “EI” Program Lighting Impact Evaluation FINAL Report, June 2004.
54. RLW Analytics, Inc., Impact Evaluation of a Unitary HVAC Tune-Up Program Final Report – Executive Summary, June 14, 2004.
55. Nexus Market Research, Inc., Dorothy Conant, Shel Feldman Management Consulting, Scoping Study on Market Penetration Tracking of Energy-Efficient Motors and Packaged HVAC Systems in New England and New York, August 8, 2003.
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57. Summit Blue Consulting, Impact Analysis of the 2004 Energy Initiative Program Final Report, July 26, 2005.
58. RLW Analytics, Sample Design and Impact Evaluation Analysis of the 2004 Custom Program, October 26, 2004.
59. Select Energy Services, Inc., Final Report for National Grid USA Service Company Evaluation of 2003 Custom Process Installations – Part I, August 24, 2005.
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62. Select Energy Services, Inc., Final Report for National Grid USA Service Company Evaluation of 2003 Custom HVAC Installations – Part II, September 27, 2005.
63. RLW Analytics, Inc., National Grid USA Custom Lighting Impact Study Executive Summary 2004 energy Initiative and Design 2000plus Program, August 25, 2005.
64. PA Government Services Inc., National Grid USA Process Evaluation of 2004 Targeted Demand Response Program, June 30, 2005.
65. RLW Analytics, Impact and Process Evaluation Building Operator Training and Certification (BOC) Program Final Report, June 2005.
66. PA Consulting Group, 2005 Commercial and Industrial Programs Free-ridership and Spillover Study Revised, August 11, 2006.
67. Demand Management Institute, Prescriptive Variable Frequency Drive Worksheet Development, June 9, 2006.
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69. RLW Analytics, Sample Design and Impact Evaluation Analysis for Prescriptive Compressed Air Measures in the Energy Initiative and Design 2000 Programs, May 31, 2006.
70. RLW Analytics, Sample Design and Impact Evaluation Analysis of the 2005 Custom Program, July 18, 2006.
71. Demand Management Institute, Impact Evaluation of 2004 Custom Process Installations – Part I, June 1, 2006.
72. Select Energy Services, Inc., Evaluation of 2004 Custom Process Installations – Part II, June 19, 2006.
73. Science Applications Incorporated, Impact Evaluation of 2004 Custom Process Installations – Part III, July 3, 2006.
74. CDH Energy Corp., Final Report: Field Monitoring the ECR Watter$aver Heat Pump Water Heater, May 2006.
75. GDS Associates and ENTECH Engineering, Survey of Commercial New Construction Activities in New Hampshire, May 2000
76. The Cadmus Group, Inc., National Analysis of CEE 2001 ENERGY STAR Household Surveys, August 1, 2002
77. NH Electric Utilities, Cost-Effectiveness Model Review and Common Assumptions Assessment, December 23, 2002.
78. Nexus Market Research, Inc, (and others), Evaluation of the New Hampshire ENERGY STAR Homes Program, March 2003.
79. GDS Associates, Inc., Process Evaluation of the Pilot “Pay As You Save” (PAYS) Energy Efficiency Program, November 2003
80. ICF Consulting, Report on Avoided Energy Supply Costs in New England, August 21, 2003.
81. Energy & Resource Solutions, New Hampshire New Construction Program Baseline Evaluation, June 2003.
82. RWL Analytics, Inc., New Hampshire Low-Income Retrofit Program Process Evaluation, July 2003.

83. Nexus Market Research, Inc, and RLW Analytics, Inc., Process and Impact Evaluation of the New Hampshire Residential Lighting Program, November 9, 2003.
84. Kema-Xenergy Inc (and others), National Awareness of ENERGY STAR for 2003, 2004.
85. RLW Analytics, New Hampshire Small Business Energy Solutions Program Impact Evaluation, September 2004.
86. Nexus Market Research, Inc., Report on the Web TV Survey for the New Hampshire ENERGY STAR Appliances Program, January 26, 2005.
87. ICF Consulting, Avoided Energy Supply Costs in New England, December 23, 2005.
88. Summit Blue Consulting, LLC, Statewide Impact Evaluation of the 2003 Residential Retrofit Program (Home Energy Solutions Program), February 3, 2005.
89. Opinion Dynamics Corporation, The New Hampshire Electric Utilities' Low-Income Retrofit Program – Impact Evaluation, January 16, 2006.
90. GDS Associates, Inc., Summary Report of the Residential and Commercial & Industrial Building Energy Code Compliance Training Workshops, November 2005.
91. Kema Inc., National Awareness of ENERGY STAR for 2005 – Analysis of CEE Household Survey, 2005.
92. Kema Inc., New Hampshire Large Business Retrofit Program Impact Evaluation, May 11, 2006.
93. Demand Management Institute, Impact Evaluation of 2004 Custom Process Installations - Part I, June 1, 2006.
94. Select Energy Services, Inc., Evaluation of 2004 Custom Process Installations - Part II, June 19, 2006.
95. Science Applications Incorporated, Impact Evaluation of 2004 Custom Process Installations - Part III, July 3, 2006.
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97. PA Consulting Group, National Accounts Study: Customer Energy Efficiency Equipment Decision Making Process and Standard Practice, September 8, 2006.
98. Energy & Resource Solutions, Inc., Market Research Report of High Performance T8 Commercial Lighting Technology, June 2006.
99. Synapse Energy Economics, Inc., Avoided Energy Supply Costs in New England: 2007 Final Report, August 2007.
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102. RLW Analytics, Inc., Sample Design and Impact Evaluation of the 2006 Custom Program, July 20, 2007.
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ATTACHMENT C: AVOIDED COSTS

Summary of Avoided Electric Costs

In accordance with Commission Order No. 23,850, in DE 01-057, dated November 29, 2001, the NH Electric Utilities have based their avoided costs on the 2009 *Avoided-Energy-Supply Costs in New England: 2009 Report* ("2009 AESC"). Use of common avoided costs by the utilities ensures that all New Hampshire customers will have access to the same programs and services.

The present value of avoided costs over the life of program measures was calculated using a discount rate of 3.25% and a general inflation rate of 1.56%. The use of the 15% adder to represent non-quantified benefits – including environmental and other benefits as recommended by the Energy Efficiency Working Group, originally authorized by the NHPUC in DR 96-150, Order No. 23,574, dated November 1, 2000, has been discontinued because the 2009 AESC avoided costs include market-based price proxies for power plant emissions of NOx, SO_2, Mercury and CO_2.

The 2009 AESC avoided costs also include a 9% generic retail adder to account for the expected differential between retail and wholesale market prices. In recognition of diversity among states and utilities in energy service procurement and retail pricing policies, the contractor provided the sponsors the option to remove the adder from the avoided cost data. PSNH and NHEC have concluded that the 2009 AESC forecasted wholesale prices of energy and capacity represent a better approximation to the cost of energy service avoided by their retail customers than the prices which include a 9% increase to the wholesale prices.

Avoided Transmission and Distribution Costs

In accordance with Commission Order No. 23,850, in DE 01-057, dated November 29, 2001, the NH Electric Utilities have based their avoided transmission and distribution costs on the weighted average of NH utility costs and have escalated them for inflation and put them in 2009 dollars. Use of common avoided costs by the utilities ensures that all New Hampshire customers will have access to the same programs and services.

The following table also includes an adjustment to reduce the energy and capacity line loss multipliers by the estimated losses that are accounted for in the 2009 forecast of energy prices.

Marginal T&D Costs and Line Loss Factors ($2009)

	MDC ($/kW-yr)		MTC	Line Loss Multipliers				
	Res.(1)	C&I(2)	($/kW-yr)	Transmission Capacity	Summer Capacity	Winter Capacity	On-Peak Energy	Off-Peak Energy
Granite State	$51.11	$51.11	$24.78	1.1220	1.1500	1.1350	1.0630	1.0890
PSNH	$25.12	$25.12	$3.76	1.0000	1.0820	1.0820	1.0820	1.0840
Unitil	$71.57	$71.57	$28.67	1.0000	1.1217	1.1217	1.1217	1.0152
NHEC	$101.38	$101.38	$64.57	1.0000	1.0917	1.0917	1.0917	1.0917

MWh Sales to Ultimate Customers in 2008

Granite State	639,471	6.04%
PSNH	7,970,949	75.34%
Unitil	1,224,893	11.58%
NHEC	744,150	7.03%
Total	10,579,463	100.00%

Weighted Average Marginal T&D Costs and Line Loss Factors
(2009 Energy Line Loss Multipliers have been reduced by estimated transmission losses.)

	MDC ($/kW-yr)		MTC	Line Loss Multipliers				
	Res.(1)	C&I(2)	($/kW-yr)	Transmission Capacity	Summer Capacity	Winter Capacity	On-Peak Energy	Off-Peak Energy
2009$	$37.44	$37.44	$12.19	1.007	1.071	1.070	1.062	1.053

ATTACHMENT D: NATIONAL GRID PROGRAM COST-EFFECTIVENESS

National Grid Program Cost-Effectiveness

Program Cost-Effectiveness - 2010 PLAN

	Total Resource Benefit/Cost Ratio	Present Value Benefit ($000)	Utility Costs ($000)	Customer Costs ($000)	Shareholder Incentive ($000)	Annual MWh Savings	Lifetime MWh Savings	Winter kW Savings	Summer kW Savings	Number of Customers Served
Residential Programs										
ENERGY STAR Homes	6.40	$ 1,632.0	$ 200.8	$ 54.2		62.4	886.4	532.0	457.7	75
NH Home Performance with ENERGY STA	1.48	$ 99.8	$ 62.3	$ 4.9		99.8	1,276.8	20.8	6.7	72
ENERGY STAR Lighting *1	2.59	$ 218.2	$ 59.5	$ 24.7		455.0	3,014.6	103.2	27.4	9,710
ENERGY STAR Appliances	3.20	$ 486.6	$ 64.5	$ 87.8		102.8	1,379.3	24.3	20.9	680
Home Energy Assistance	2.43	$ 464.2	$ 190.9	$ -		74.1	1,130.8	13.7	7.5	45
EnergyStar Homes (Geothermal)	0.00	$ -								
Other	0.00	$ -	$ -	$ -	$ -	-	-	-	-	-
Subtotal Residential	**3.65**	**$ 2,900.8**	**$ 578.0**	**$ 171.5**	**$ 46.2**	**794.1**	**7,687.9**	**693.9**	**520.2**	**10,582**
Commercial/Industrial Programs										
New Construction / Major Renovation	3.17	$ 1,094.9	$ 270.3	$ 75.1		775.5	11,835.8	123.6	189.8	13
Large C&I Retrofit	3.15	$ 1,421.7	$ 229.1	$ 222.8		1,305.9	16,977.2	175.5	223.3	12
Small C&I Retrofit	1.74	$ 633.5	$ 286.4	$ 78.4		588.3	7,060.0	71.8	126.9	46
Other	0.00	$ -								3
Other	0.00	$ -		$ -		-	-	-	-	-
Other	0.00	$ -	$ -	$ -	$ -	-	-	-	-	-
Subtotal C&I	**2.57**	**3,150.1**	**785.9**	**376.3**	**62.9**	**2,669.8**	**35,873.0**	**370.9**	**540.0**	**74**
Total	**2.99**	**$ 6,050.9**	**$ 1,363.8**	**$ 547.8**	**$ 109.1**	**3,463.8**	**43,560.9**	**1,064.8**	**1,060.1**	**10,656**

Note 1: National Grid plan estimates number of products rebated.

NATIONAL GRID
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2010 TRC BENEFIT COST TEST
National Grid

	Total Benefits									
		Capacity				Energy				Non Electric
		Generation				Winter		Summer		
BCR Activity	Total Benefits	Summer	Winter	Trans	MDC	Peak	Off Peak	Peak	Off Peak	Resource
Residential										
ENERGY STAR Homes	$1,631,990	$196,694	$0	$76,497	$234,950	$18,348	$22,321	$9,226	$10,955	$1,062,998
Home Performance w/ENERGY STAR	$99,832	$2,083	$0	$788	$2,420	$26,477	$32,211	$13,246	$15,640	$6,966
ENERGY STAR Lighting *1	$218,205	$6,839	$0	$2,089	$6,415	$62,243	$74,079	$30,727	$35,812	$0
ENERGY STAR Appliances	$486,620	$7,991	$0	$3,173	$9,747	$28,149	$34,515	$14,999	$16,903	$371,143
Home Energy Assistance	$464,156	$3,770	$0	$1,276	$3,919	$23,403	$28,573	$11,751	$13,947	$377,518
Subtotal Residential	**$2,900,803**	**$217,378**	**$0**	**$83,823**	**$257,451**	**$158,621**	**$191,699**	**$79,949**	**$93,257**	**$1,818,626**
New Construction / Major Renovation	$1,094,863	$88,049	$0	$32,886	$101,006	$449,082	$129,863	$232,567	$61,410	$0
Large C&I Retrofit	$1,421,697	$81,743	$0	$32,571	$100,038	$527,462	$276,663	$268,246	$134,974	$0
Small C&I Retrofit	$633,531	$43,436	$0	$17,220	$52,890	$264,626	$80,124	$136,810	$38,423	$0
Subtotal C&I	**$3,150,090**	**$213,228**	**$0**	**$82,678**	**$253,935**	**$1,241,170**	**$486,650**	**$637,623**	**$234,807**	**$0**
Grand Total	**$6,050,893**	**$430,606**	**$0**	**$166,501**	**$511,385**	**$1,399,791**	**$678,349**	**$717,572**	**$328,064**	**$1,818,626**

Shareholder Incentive Calculation
2010

	Planned	Actual
Commercial/Industrial Incentive		
1. Benefit/Cost Ratio	**2.57**	**0.00**
2. Threshold Benefit / Cost Ratio [1]	1.00	
3. Lifetime kWh Savings	**35,873,001**	**0**
4. Threshold Lifetime kWh Savings (65%) [2]	23,317,451	
5. Budget	$785,850	$0
6. Benefit / Cost Percentage of Budget	4.00%	
7. Lifetime kWh Percentage of Budget	4.00%	
8. C/I Shareholder Incentive	$62,868	
9. Cap (12%)	$94,302	
Residential Incentive		
10. Benefit / Cost Ratio	**3.65**	**0.00**
11. Threshold Benefit / Cost Ratio [1]	1.00	
12. Lifetime kWh Savings	**7,687,896**	**0**
13. Threshhold Lifetime kWh Savings (65%) [2]	4,997,132	
14. Budget	$577,999	
15. Benefit / Cost Percentage of Budget	4.00%	
16. Lifetime kWh Percentage of Budget	4.00%	
17. Residential Incentive	$46,240	
18. Cap (12%)	$69,360	
19. TOTAL INCENTIVE EARNED		

Notes

1. Actual Benefit / Cost Ratio for each sector must be greater than or equal to 1.0.
2. Actual Lifetime kWh Savings for each sector must be greater than or equal to 65% of projected savings.

National Grid Planned Benefit/Cost Ratio by Sector

Planned Versus Actual Benefit / Cost Ratio by Sector
2010

	Planned	Actual
Commercial & Industrial:		
1. Benefits (Value) From Eligible Programs	$ 3,150,090	$ -
2. Implementation Expenses	$ 785,850	$ -
3. Customer Contribution	$ 376,274	$ -
4. Estimated Shareholder Incentive	$ 62,868	$ -
5. Total Costs	$ 1,224,992	$ -
6. Benefit/Cost Ratio - C&I Sector	**2.57**	**0.00**
Residential:		
7. Benefits (Value) From Eligible Programs	$ 2,900,803	$ -
8. Implementation Expenses	$ 577,999	$ -
9. Customer Contribution	$ 171,512	$ -
10. Estimated Shareholder Incentive	$ 46,240	$ -
11. Total Costs	$ 795,751	$ -
12. Benefit/Cost Ratio - Residential Sector	**3.65**	**0.00**

National Grid Planned Lifetime kWh Savings by Sector

Actual Lifetime Energy Savings by Sector and Program
2010

	Lifetime kWh Savings	
	Planned	**Actual**
Commercial & Industrial:		
New Equipment & Construction	11,835,770	0
Large C&I Retrofit	16,977,238	0
Small Business Energy Solutions	7,059,993	0
Education	0	0
Utility Specific (Energy Rewards RFP Program)	0	0
Other	0	0
Total Commercial & Industrial Included for Incentive Calculation	**35,873,001**	**0**
Residential:		
Home Energy Assistance Program	1,130,822	0
Home Energy Solutions Program	1,276,803	0
ENERGY STAR Homes Program	886,409	0
ENERGY STAR Appliance Program	1,379,308	0
ENERGY STAR Lighting Program	3,014,554	0
Electro-Thermal Storage Units	0	0
Eutility Specific: ENERGY STAR Homes - Geothermal)	0	0
Total Residential Included for Incentive Calculation	**7,687,896**	**0**

ATTACHMENT E: NHEC PROGRAM COST-EFFECTIVENESS

NHEC Program Cost-Effectiveness

Program Cost-Effectiveness - 2010 PLAN

	Total Resource Benefit/Cost Ratio	Present Value Benefit ($000)	Present Value Utility Costs ($000)	Present Value Customer Costs ($000)	Annual MWh Savings	Lifetime MWh Savings	Winter kW Savings	Summer kW Savings	Number of Customers Served
Residential Programs									
ENERGY STAR Homes	4.9	$ 1,026.8	$ 116.5	$ 93.3	21.7	270.6	6.2	7.1	28
Home Energy Solutions	2.2	$ 355.7	$ 143.0	$ 15.5	164.9	2,887.7	54.8	42.6	29
ENERGY STAR Lighting *1	3.0	$ 434.5	$ 93.8	$ 52.4	953.7	5,263.6	415.8	81.1	22,020
ENERGY STAR Appliances	1.3	$ 238.0	$ 96.8	$ 90.6	121.1	1,431.5	22.4	22.9	982
Home Energy Assistance	1.8	$ 306.1	$ 171.4	$ -	84.9	1,211.7	24.1	15.5	72
High Efficiency Heat Pump Program	2.6	$ 595.2	$ 97.5	$ 127.7	291.2	7,279.4	158.4	12.5	13
Load Management	0.0	$ -	$ 100.7	$ -	-	-	-	-	-
Subtotal Residential	**2.5**	**$ 2,956.3**	**$ 819.7**	**$ 379.5**	**1,637.4**	**18,344.5**	**681.8**	**181.6**	**23,144**
Commercial/Industrial Programs									
New Construction / Major Renovation	2.8	$ 1,319.9	$ 133.3	$ 340.4	1,064.4	15,966.3	565.9	53.2	22
Large C&I Retrofit	1.4	$ 499.7	$ 131.1	$ 220.0	452.3	5,879.3	82.3	95.2	19
Small C&I Retrofit	1.5	$ 216.5	$ 95.9	$ 44.9	206.8	2,688.2	26.4	32.8	24
Other	0.0	$ -	$ -	$ -	-	-	-	-	-
Other (Education)	0.0	$ -	$ 35.6	$ -	-	-	-	-	-
Smart Start	0.0	$ -	$ 8.4	$ -	-	-	-	-	-
Subtotal C&I	**2.0**	**2,036.1**	**404.3**	**605.3**	**1,723.5**	**24,533.8**	**674.5**	**181.2**	**65**
Total		**$ 4,992.4**	**$ 1,224.0**	**$ 984.8**	**3,360.9**	**42,878.4**	**1,356.3**	**362.8**	**23,209**

Present Value Benefits - 2010 PLAN

		CAPACITY				ENERGY				
	Total Benefits ($000)	Summer Generation	Winter Generation	Transmission	Distribution	Winter Peak	Winter Off Peak	Summer Peak	Summer Off Peak	Non Electric Resource
Residential Programs										
ENERGY STAR Homes	$1,027	$2,777	$0	$922	$2,831	$4,860	$5,912	$4,431	$3,529	$1,001,581
Home Performance w/Energy Star	$356	$35,449	$0	$9,711	$29,827	$60,162	$75,479	$28,827	$34,541	$81,747
ENERGY STAR Lighting *1	$435	$16,693	$0	$16,271	$49,974	$108,615	$128,326	$53,210	$61,416	$0
ENERGY STAR Appliances	$238	$7,126	$0	$2,679	$8,228	$28,386	$34,701	$17,342	$17,711	$121,778
Home Energy Assistance	$306	$10,418	$0	$3,179	$9,765	$25,093	$30,506	$12,618	$14,992	$199,509
High Efficiency Heat Pump Program	$595	$14,159	$0	$21,822	$67,025	$162,808	$302,070	$15,578	$11,701	$0
Load Management	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0
Subtotal Residential	**$2,956**	**$86,622**	**$0**	**$54,584**	**$167,650**	**$389,924**	**$576,994**	**$132,006**	**$143,890**	**$1,404,615**
Commercial/Industrial Programs										
New Construction / Major Renovation	$1,320	$22,125	$0	$51,272	$157,476	$387,121	$609,197	$57,710	$35,047	$0
Large C&I Retrofit	$500	$34,833	$0	$12,942	$39,749	$149,780	$122,867	$79,219	$60,267	$0
Small C&I Retrofit	$216	$12,021	$0	$4,318	$13,261	$63,289	$60,674	$33,336	$29,577	$0
Other	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0
Other (Education)	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0
Smart Start	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0
Subtotal C&I	**$2,036**	**$68,979**	**$0**	**$68,532**	**$210,486**	**$600,190**	**$792,738**	**$170,265**	**$124,891**	**$0**
Total	**$4,992**	**$155,601**	**$0**	**$123,116**	**$378,136**	**$990,114**	**$1,369,732**	**$302,271**	**$268,781**	**$1,404,615**

Member Incentive Calculation
2010

	Planned	Actual
Commercial/Industrial Incentive		
1. Benefit/Cost Ratio	**1.95**	**0.00**
2. Threshold Benefit / Cost Ratio [1]	1.00	
3. Lifetime kWh Savings	**24,533,845**	**0**
4. Threshold Lifetime kWh Savings (65%) [2]	15,946,999	
5. Budget	$404,269	$0
6. Benefit / Cost Percentage of Budget	4.00%	
7. Lifetime kWh Percentage of Budget	4.00%	
8. C/I Incentive	$32,342	
9. Cap (12%)	$48,512	
Residential Incentive		
10. Benefit / Cost Ratio	**2.34**	**0.00**
11. Threshold Benefit / Cost Ratio [1]	1.00	
12. Lifetime kWh Savings	**18,344,508**	**0**
13. Threshhold Lifetime kWh Savings (65%) [2]	11,923,930	
14. Budget	$819,692	
15. Benefit / Cost Percentage of Budget	4.00%	
16. Lifetime kWh Percentage of Budget	4.00%	
17. Residential Incentive	$65,575	
18. Cap (12%)	$98,363	
19. TOTAL INCENTIVE EARNED		

Notes

1. Actual Benefit / Cost Ratio for each sector must be greater than or equal to 1.0.
2. Actual Lifetime kWh Savings for each sector must be greater than or equal to 65% of projected savings.

Planned Versus Actual Benefit / Cost Ratio by Sector

2010

	Planned	Actual
Commercial & Industrial:		
1. Benefits (Value) From Eligible Programs	$ 2,036,081	$ -
2. Implementation Expenses	$ 404,269	$ -
3. Customer Contribution	$ 605,272	$ -
4. Estimated Member Incentive	$ 32,342	$ -
5. Total Costs	$ 1,041,882	$ -
6. Benefit/Cost Ratio - C&I Sector	**1.95**	**0.00**
Residential:		
7. Benefits (Value) From Eligible Programs	$ 2,956,285	$ -
8. Implementation Expenses	$ 819,692	$ -
9. Customer Contribution	$ 379,491	$ -
10. Estimated Member Incentive	$ 65,575	$ -
11. Total Costs Excluding Shareholder Incentive	$ 1,264,758	$ -
12. Benefit/Cost Ratio - Residential Sector	**2.34**	**0.00**

Actual Lifetime Energy Savings by Sector and Program
2010

	Lifetime kWh Savings	
	Planned	**Actual**
Commercial & Industrial:		
New Equipment & Construction	15,966,338	0
Large C&I Retrofit	5,879,337	0
Small Business Energy Solutions	2,688,170	0
Other	0	0
Other (Education)	0	0
Smart Start	0	0
Total Commercial & Industrial Included for Incentive Calculation	**24,533,845**	**0**
Residential:		
Home Energy Assistance Program	1,211,703	0
Home Energy Solutions Program	2,887,716	0
ENERGY STAR Homes Program	270,604	0
ENERGY STAR Appliance Program	1,431,540	0
ENERGY STAR Lighting Program	5,263,584	0
High Efficiency Heat Pump Program	0	0
Load Management	7,279,361	0
Total Residential Included for Incentive Calculation	**18,344,508**	**0**

ATTACHMENT F: PSNH PROGRAM COST-EFFECTIVENESS

PSNH Program Cost-Effectiveness

Program Cost-Effectiveness - 2010 PLAN

	Total Resource Benefit/Cost Ratio	Present Value Benefit ($000)	Present Value Utility Costs ($000)	Present Value Customer Costs ($000)	Annual MWh Savings	Lifetime MWh Savings	Winter kW Savings	Summer kW Savings	Number of Customers Served
Residential Programs									
ENERGY STAR Homes	2.65	$ 3,174.0	$ 945.0	$ 252.6	297.5	4,101.6	66.2	24.0	350
NH Home Performance with Energy Star	1.40	$ 2,860.0	$ 1,620.1	$ 422.4	254.9	3,298.7	82.7	77.9	685
ENERGY STAR Lighting *1	3.45	$ 4,604.0	$ 945.0	$ 387.6	11,749.7	63,748.1	2,754.2	731.9	276,154
ENERGY STAR Appliances	1.63	$ 2,049.2	$ 630.0	$ 625.8	1,139.6	14,577.4	164.5	316.5	10,190
Home Energy Assistance	1.25	$ 5,343.2	$ 2,136.3	$ 2,133.1	919.4	11,951.8	99.3	137.9	853
EnergyStar Homes (Geothermal)	2.08	$ 1,384.4	$ 360.0	$ 306.9	823.6	20,590.6	493.4	-	48
Other	0.00	$ -	$ -	$ -	-	-	-	-	-
Subtotal Residential	**1.80**	**$ 19,414.7**	**$ 6,636.6**	**$ 4,128.5**	**15,184.7**	**118,268.2**	**3,660.3**	**1,288.2**	**288,280**
Commercial/Industrial Programs									
New Construction / Major Renovation	2.98	$ 7,228.2	$ 1,958.9	$ 469.1	5,641.5	75,081.5	1,096.1	1,997.3	177
Large C&I Retrofit	1.72	$ 13,238.5	$ 2,466.7	$ 5,217.7	11,823.0	146,871.9	2,234.3	3,139.1	212
Small C&I Retrofit	1.77	$ 7,323.5	$ 2,321.6	$ 1,820.7	6,284.7	84,843.5	1,112.4	1,313.5	465
C&I RFP Pilot	2.83	$ 2,503.9	$ 507.9	$ 377.7	2,263.8	27,144.0	513.8	703.3	3
Other (Education, Partnership)	0.00	$ -	$ 187.5	$ -	-	-	-	-	-
Smart Start	0.00	$ -	$ 50.0	$ -	-	-	-	-	-
Subtotal C&I	**1.97**	**30,294.2**	**7,492.6**	**7,885.2**	**26,013.0**	**333,940.8**	**4,956.6**	**7,153.2**	**857**
Total		**$ 49,709.0**	**$ 14,129.2**	**$ 12,013.7**	**41,197.7**	**452,209.0**	**8,616.9**	**8,441.4**	**289,137**

Note 1: Plan included 69,039 customers purchasing a total of 276,154 lighting products (Estimated at 4 per customer)

PSNH Present Value of Benefits

Present Value Benefits - 2010 PLAN

		CAPACITY				ENERGY				
	Total Benefits	**Summer Generation**	**Winter Generation**	**Transmission**	**Distribution**	**Winter Peak**	**Winter Off Peak**	**Summer Peak**	**Summer Off Peak**	**Non Electric Resource**
Residential Programs										
ENERGY STAR Homes	$3,174,013	$13,769	$0	$4,011	$12,321	$84,926	$103,296	$42,631	$50,535	$2,862,525
NH Home Performance with Energy Sta	$2,859,954	$29,607	$0	$11,787	$36,202	$68,189	$83,526	$34,029	$40,124	$2,556,489
ENERGY STAR Lighting	$4,603,989	$152,436	$0	$48,332	$148,446	$1,315,308	$1,552,233	$644,072	$743,163	$0
ENERGY STAR Appliances	$2,049,229	$97,678	$0	$37,515	$115,223	$273,858	$335,750	$210,148	$185,209	$793,849
Home Energy Assistance	$5,343,191	$50,482	$0	$20,115	$61,781	$247,320	$303,189	$123,362	$145,529	$4,391,413
EnergyStar Homes (Geothermal)	$1,384,359	$0	$0	$0	$0	$474,441	$909,918	$0	$0	$0
Other	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0
Subtotal Residential	**$19,414,736**	**$343,972**	**$0**	**$121,761**	**$373,972**	**$2,464,042**	**$3,287,911**	**$1,054,241**	**$1,164,560**	**$10,604,277**
Commercial/Industrial Programs										
New Construction / Major Renovation	$7,228,248	$762,964	$0	$303,918	$933,446	$1,135,994	$1,281,189	$1,581,192	$1,229,544	$0
Large C&I Retrofit	$13,238,503	$1,109,712	$0	$441,037	$1,354,587	$3,353,168	$2,703,709	$2,529,271	$1,747,018	$0
Small C&I Retrofit	$7,323,526	$496,980	$0	$198,141	$608,565	$2,404,050	$1,560,191	$1,280,185	$775,414	$0
C&I RFP Pilot	$2,503,943	$237,121	$0	$93,683	$287,736	$462,861	$546,971	$496,747	$378,823	$0
Other (Education, Partnership)	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0
Smart Start	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0
Subtotal C&I	**$30,294,219**	**$2,606,777**	**$0**	**$1,036,780**	**$3,184,334**	**$7,356,073**	**$6,092,060**	**$5,887,395**	**$4,130,800**	**$0**
Total	**$49,708,955**	**$2,950,750**	**$0**	**$1,158,540**	**$3,558,306**	**$9,820,115**	**$9,379,971**	**$6,941,637**	**$5,295,360**	**$10,604,277**

Shareholder Incentive Calculation
2010

	Planned	Actual
Commercial/Industrial Incentive		
1. Benefit/Cost Ratio	**1.90**	**0.00**
2. Threshold Benefit / Cost Ratio [1]	1.00	
3. Lifetime kWh Savings	**333,940,828**	**0**
4. Threshold Lifetime kWh Savings (65%) [2]	217,061,538	
5. Budget	$7,492,634	$0
6. Benefit / Cost Percentage of Budget	4.00%	
7. Lifetime kWh Percentage of Budget	4.00%	
8. C/I Shareholder Incentive	$599,411	
9. Cap (12%)	$899,116	
Residential Incentive		
10. Benefit / Cost Ratio	**1.72**	**0.00**
11. Threshold Benefit / Cost Ratio [1]	1.00	
12. Lifetime kWh Savings	**118,268,175**	**0**
13. Threshhold Lifetime kWh Savings (65%) [2]	76,874,313	
14. Budget	$6,636,557	
15. Benefit / Cost Percentage of Budget	4.00%	
16. Lifetime kWh Percentage of Budget	4.00%	
17. Residential Incentive	$530,925	
18. Cap (12%)	$796,387	
19. TOTAL INCENTIVE EARNED		

Notes

1. Actual Benefit / Cost Ratio for each sector must be greater than or equal to 1.0.
2. Actual Lifetime kWh Savings for each sector must be greater than or equal to 65% of projected savings.

PSNH Planned Benefit/Cost Ratio by Sector

Planned Versus Actual Benefit / Cost Ratio by Sector

2010

	Planned	Actual
Commercial & Industrial:		
1. Benefits (Value) From Eligible Programs	$ 30,294,219	$ -
2. Implementation Expenses	$ 7,492,634	$ -
3. Customer Contribution	$ 7,885,244	$ -
4. Estimated Shareholder Incentive	$ 599,411	
5. Total Costs	$ 15,977,288	$ -
6. Benefit/Cost Ratio - C&I Sector	**1.90**	**0.00**
Residential:		
7. Benefits (Value) From Eligible Programs	$ 19,414,736	$ -
8. Implementation Expenses	$ 6,636,557	$ -
9. Customer Contribution	$ 4,128,466	$ -
10. Estimated Shareholder Incentive	$ 530,925	
11. Total Costs	$ 11,295,947	$ -
12. Benefit/Cost Ratio - Residential Sector	**1.72**	**0.00**

Actual Lifetime Energy Savings by Sector and Program
2010

	Lifetime kWh Savings	
	Planned	**Actual**
Commercial & Industrial:		
New Equipment & Construction	75,081,482	0
Large C&I Retrofit	146,871,876	0
Small Business Energy Solutions	84,843,464	0
Education	0	0
Utility Specific (Energy Rewards RFP Program)	27,144,006	0
Other	0	0
Total Commercial & Industrial Included for Incentive Calculation	**333,940,828**	**0**
Residential:		
Home Energy Assistance Program	11,951,799	0
Home Energy Solutions Program	3,298,735	0
ENERGY STAR Homes Program	4,101,556	0
ENERGY STAR Appliance Program	14,577,389	0
ENERGY STAR Lighting Program	63,748,090	0
Electro-Thermal Storage Units	0	0
Eutility Specific: ENERGY STAR Homes - Geothermal)	20,590,605	0
Total Residential Included for Incentive Calculation	**118,268,175**	**0**

ATTACHMENT G: UES PROGRAM COST-EFFECTIVENESS

UES Program Cost-Effectiveness

Program Cost-Effectiveness - 2010 PLAN

	Total Resource Benefit/Cost Ratio	Present Value Benefit ($000)	Present Value Utility Costs [1] ($000)	Present Value Customer Costs ($000)	Annual MWh Savings	Lifetime MWh Savings	Winter kW Savings	Summer kW Savings	Number of Customers Served
Residential Programs									
ENERGY STAR Homes	2.2	$ 767	$ 241.8	$ 114.7	55.6	460.7	12.3	3.7	67
Home Performance with Energy Star	2.1	$ 617.3	$ 261.1	$ 36.0	64.1	870.0	4.6	9.5	97
ENERGY STAR Lighting [2]	4.0	$ 1,455.2	$ 245.4	$ 115.3	3,251.5	18,938.2	800.4	212.7	62,498
ENERGY STAR Appliances [2]	1.2	$ 672.8	$ 249.3	$ 299.4	322.1	4,249.1	59.1	77.0	2,511
Home Energy Assistance [3]	1.6	$ 647.9	$ 401.4	$ -	80.4	1,476.8	41.2	2.0	107
Res/K-12 Education	0.0	$ -	$ 15.0	$ -					
ISO-Related Expenses Res	0.0	$ -	$ 6.5	$ -	-	-	-	-	-
Subtotal Residential	**2.1**	**$ 4,160.3**	**$ 1,420.5**	**$ 565.4**	**3,773.8**	**25,994.9**	**917.5**	**304.9**	**65,280**
Commercial/Industrial Programs									
New Construction / Major Renovation	2.6	$ 1,007.7	$ 326.1	$ 59.0	681.0	10,214.6	241.1	294.0	13
Large C&I Retrofit	1.8	$ 1,843.2	$ 511.6	$ 525.2	1,728.8	22,473.9	265.9	324.3	19
Small C&I Retrofit	2.2	$ 1,702.9	$ 487.2	$ 277.8	1,510.2	19,633.1	262.7	358.3	63
C&I Education	0.0	$ -	$ 25.0	$ -	-	-	-	-	-
ISO-Related Expenses C&I	0.0	$ -	$ 7.5	$ -	-	-	-	-	-
Subtotal C&I	**2.1**	**4,553.9**	**1,357.5**	**862.0**	**3,920.0**	**52,321.5**	**769.7**	**976.6**	**95**
Total		**$ 8,714.2**	**$ 2,778.0**	**$ 1,427.5**	**7,693.7**	**78,316.4**	**1,687.2**	**1,281.5**	**65,375**

(1) Utility Costs include direct program costs plus projected Shareholder Incentive.
(2) Target number of products purchased.
(3) The Home Energy Assistance (HEA) Program is offered as fuel-blind. Estimated lifetime non-electric savings have been converted into kWh as follows to establish UES' HEA program savings goal: [Lifetime MMBtu ÷ 0.003413] ÷ 1,000 = Lifetime MWh.

Present Value Benefits - 2010 PLAN

	Total Benefits ($000)	CAPACITY				ENERGY				Non Electric Resource
		Summer Generation	Winter Generation	Transmission	Distribution	Winter Peak	Winter Off Peak	Summer Peak	Summer Off Peak	
Residential Programs										
ENERGY STAR Homes	$767	$984	$0	$768	$2,359	$9,545	$11,486	$4,724	$5,487	$731,695
Home Performance w/Energy Star	$617	$8,732	$0	$1,552	$4,767	$18,171	$23,038	$8,437	$10,031	$542,565
ENERGY STAR Lighting *1	$1,455	$45,775	$0	$34,570	$106,176	$391,260	$463,271	$192,068	$222,096	$0
ENERGY STAR Appliances	$673	$27,837	$0	$9,706	$29,810	$85,873	$105,277	$48,037	$52,283	$314,014
Home Energy Assistance	$648	$523	$0	$4,747	$14,580	$33,267	$59,011	$3,351	$3,916	$528,474
Res/K-12 Education	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0
ISO-Related Expenses Res	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0
Subtotal Residential	**$4,160**	**$83,851**	**$0**	**$51,342**	**$157,691**	**$538,116**	**$662,083**	**$256,617**	**$293,813**	**$2,116,747**
Commercial/Industrial Programs										
New Construction / Major Renovation	$1,008	$122,335	$0	$44,320	$136,124	$179,845	$233,065	$154,464	$137,582	$0
Large C&I Retrofit	$1,843	$118,706	$0	$43,042	$132,199	$396,158	$513,097	$339,028	$301,014	$0
Small C&I Retrofit	$1,703	$131,168	$0	$45,289	$139,101	$538,684	$378,513	$283,703	$186,466	$0
C&I Education	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0
ISO-Related Expenses C&I	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0
Other	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0
Subtotal C&I	**$4,554**	**$372,210**	**$0**	**$132,652**	**$407,424**	**$1,114,686**	**$1,124,675**	**$777,194**	**$625,062**	**$0**
Total	**$8,714**	**$456,060**	**$0**	**$183,995**	**$565,115**	**$1,652,803**	**$1,786,758**	**$1,033,811**	**$918,876**	**$2,116,747**

Shareholder Incentive Calculation
2010

		Planned	Actual
Commercial/Industrial Incentive			
1. Benefit/Cost Ratio		**2.1**	**0.00**
2. Threshold Benefit / Cost Ratio [1]		1.00	
3. Lifetime kWh Savings		**52,321,469**	**0**
4. Threshold Lifetime kWh Savings (65%) [2]		34,008,955	
5. Budget		$1,256,907	$0
6. Benefit / Cost Percentage of Budget		4.00%	
7. Lifetime kWh Percentage of Budget		4.00%	
8. C/I Shareholder Incentive		$100,553	
9. Cap (12%)		$150,829	
Residential Incentive			
10. Benefit / Cost Ratio		**2.1**	**0.00**
11. Threshold Benefit / Cost Ratio [1]		1.00	
12. Lifetime kWh Savings		**35,281,038**	**0**
13. Threshhold Lifetime kWh Savings (65%) [2]		22,932,675	
14. Budget		$1,315,287	
15. Benefit / Cost Percentage of Budget		4.00%	
16. Lifetime kWh Percentage of Budget		4.00%	
17. Residential Incentive		$105,223	
18. Cap (12%)		$157,834	
19. TOTAL INCENTIVE EARNED	**$**	**205,776**	

Notes

1. Actual Benefit / Cost Ratio for each sector must be greater than or equal to 1.0.
2. Actual Lifetime kWh Savings for each sector must be greater than or equal to 65% of projected savings.

UES Planned Benefit/Cost Ratio by Sector

Planned Versus Actual Benefit / Cost Ratio by Sector
2010

		Planned		Actual
Commercial & Industrial:				
1. Benefits (Value) From Eligible Programs	$	4,553,904	$	-
2. Implementation Expenses	$	1,256,907	$	-
3. Customer Contribution	$	862,025	$	-
4. Shareholder Incentive	$	100,553	$	-
5. Total Costs	$	2,219,484	$	-
6. Benefit/Cost Ratio - C&I Sector		**2.1**		**0.00**
Residential:				
7. Benefits (Value) From Eligible Programs	$	4,160,260	$	-
8. Implementation Expenses	$	1,315,287	$	-
9. Customer Contribution	$	565,436	$	-
10. Shareholder Incentive	$	105,223	$	-
11. Total Costs	$	1,985,947	$	-
12. Benefit/Cost Ratio - Residential Sector		**2.1**		**0.00**

Actual Lifetime Energy Savings by Sector and Program
2010

	Lifetime kWh Savings	
	Planned	**Actual**
Commercial & Industrial:		
New Equipment & Construction	10,214,550	0
Large C&I Retrofit	22,473,855	0
Small Business Energy Solutions	19,633,065	0
Total Commercial & Industrial Included for Incentive Calculation	**52,321,469**	**0**
Residential:		
Home Energy Assistance Program	10,762,879	0
Home Energy Solutions Program	870,035	0
ENERGY STAR Homes Program	460,744	0
ENERGY STAR Appliance Program	4,249,139	0
ENERGY STAR Lighting Program	18,938,241	0
Total Residential Included for Incentive Calculation	**35,281,038**	**0**

ATTACHMENT H: STATEWIDE BUDGET S AND GOALS

Proposed Budgets by Activity

NH CORE Energy Efficiency Program - 2010 Budget Details

RESIDENTIAL PROGRAMS	Internal Adm	External Adm	Cust Rebts/Services	Internal Impl.	Marketing	(see Note 1) Evaluation	Total
National Grid	$9,020	$12,379	$168,872	$0	$947	$9,560	$200,777
NHEC	$9,967	$1,000	$47,590	$45,787	$5,355	$6,800	$116,499
PSNH	$19,335	$10,000	$774,780	$80,400	$15,000	$45,532	$945,047
Unitil	$18,238	$182	$120,217	$51,231	$18,918	$14,214	$223,000
ENERGY STAR Homes	$56,560	$23,562	$1,111,459	$177,418	$40,219	$76,106	$1,485,323
National Grid	$3,189	$7,282	$47,329	$0	$1,529	$2,967	$62,296
NHEC	$9,967	$1,000	$52,599	$67,309	$5,355	$6,800	$143,030
PSNH	$33,146	$40,000	$1,294,880	$164,000	$10,000	$78,055	$1,620,080
Unitil	$12,305	$1,368	$150,913	$35,965	$16,464	$17,256	$234,270
Home Performance w/ Energy Star	$58,607	$49,650	$1,545,721	$267,274	$33,348	$105,077	$2,059,676
National Grid	$3,800	$18,190	$31,000	$2,023	$6,800	$2,715	$64,528
NHEC	$9,967	$1,000	$40,076	$25,612	$13,355	$6,800	$96,810
PSNH	$12,890	$0	$507,786	$54,000	$25,000	$30,355	$630,031
Unitil	$17,076	$1,995	$108,391	$46,809	$30,710	$18,022	$223,003
Energy Star Appliances	$43,734	$21,185	$687,253	$128,444	$75,865	$57,891	$1,014,372
National Grid	$18,099	$10,091	$152,561	$0	$1,096	$9,092	$190,939
NHEC	$9,967	$1,000	$102,446	$45,786	$5,355	$6,800	$171,354
PSNH	$48,839	$50,000	$1,716,486	$176,000	$30,000	$115,009	$2,136,334
Unitil	$26,274	$2,503	$221,849	$73,170	$27,134	$20,584	$371,514
Home Energy Assistance	$103,179	$63,594	$2,193,341	$294,956	$63,585	$151,485	$2,870,141
National Grid	$4,000	$18,331	$17,975	$2,550	$14,100	$2,503	$59,459
NHEC	$9,967	$1,000	$40,076	$25,612	$10,355	$6,800	$93,810
PSNH	$19,335	$0	$549,430	$85,750	$245,000	$45,532	$945,047
Unitil	$11,366	$1,414	$118,710	$32,378	$43,142	$12,990	$220,000
ENERGY STAR Lighting	$44,668	$20,745	$726,191	$146,290	$312,597	$67,825	$1,318,316
National Grid	$0	$0	$0	$0	$0	$0	$0
NHEC	$19,934	$2,000	$70,133	$93,967	$5,355	$6,800	$198,189
PSNH	$7,366	$0	$284,882	$44,625	$5,800	$17,346	$360,018
Unitil (Res. Website, ISO Expenses)	$975	$3,700	$33,300	$5,525	$0	$0	$43,500
Other Residential Programs	$28,275	$5,700	$388,315	$144,117	$11,155	$24,146	$601,707
Total Residential Programs	**$335,023**	**$184,435**	**$6,652,279**	**$1,158,499**	**$536,769**	**$482,530**	**$9,349,535**
COMMERCIAL, INDUSTRIAL AND MUNICIPAL PROGRAMS							
National Grid	$27,017	$44,720	$180,648	$0	$5,059	$12,873	$270,317
NHEC	$9,967	$1,000	$82,353	$27,857	$5,355	$6,800	$133,332
PSNH	$42,954	$0	$1,582,380	$229,400	$3,000	$101,151	$1,958,884
Unitil	$19,551	$0	$177,052	$52,263	$24,090	$21,589	$294,545
New Equipment & Construction	$99,490	$45,720	$2,022,433	$309,520	$37,503	$142,413	$2,657,079
National Grid	$25,415	$43,169	$146,922	$0	$2,698	$10,910	$229,114
NHEC	$9,967	$1,000	$80,148	$27,857	$5,355	$6,800	$131,127
PSNH	$54,090	$0	$1,940,678	$341,600	$3,000	$127,375	$2,466,743
Unitil	$31,682	$0	$282,817	$87,376	$28,692	$34,420	$464,987
Large C&I Retrofit	$121,154	$44,169	$2,450,565	$456,833	$39,745	$179,505	$3,291,971
National Grid	$8,035	$7,892	$255,370	$0	$1,484	$13,639	$286,419
NHEC	$9,967	$1,000	$44,892	$27,858	$5,355	$6,800	$95,872
PSNH	$50,908	$20,000	$1,717,081	$385,770	$28,000	$119,882	$2,321,641
Unitil	$29,689	$2,837	$277,775	$85,208	$26,030	$20,835	$442,374
Small Business Energy Solutions	$98,599	$31,729	$2,295,118	$498,836	$60,869	$161,156	$3,146,306
National Grid	$0	$0	$0	$0	$0	$0	$0
NHEC	$0	$0	$30,484	$13,454	$0	$0	$43,938
PSNH (Education, RFP, Smart Start)	$11,136	$0	$616,669	$88,336	$3,000	$26,224	$745,366
til (Education, C&I Web, ISO Expenses)	$1,125	$4,750	$42,750	$6,375	$0	$0	$55,000
Other C&I Programs	$12,261	$4,750	$689,903	$108,165	$3,000	$26,224	$844,304
Total Non-Residential Programs	**$331,504**	**$126,367**	**$7,458,019**	**$1,373,354**	**$141,117**	**$509,297**	**$9,939,660**
TOTAL (Both Sectors)	**$666,527**	**$310,803**	**$14,110,299**	**$2,531,854**	**$677,886**	**$991,827**	**$19,289,196**

Note 1: Evaluation amounts are based on 5% of total budgets. Actual program expenses will vary from numbers shown.

Proposed Budgets with Participation and Lifetime kWh Savings Goals

New Hampshire CORE Energy Efficiency Goals - 2010

	National Grid		NHEC		PSNH		UNITIL		TOTALS	
PROGRAMS										
Energy Star Homes										
Number of Homes / Lifetime kWh Savings	75	886,409	28	270,604	350	4,101,556	67	460,744	520	5,719,313
B/C Ratio / Planned Budget	6.40	$200,777	4.90	$116,499	2.65	$945,047	2.20	$223,000		$1,485,323
NH Home Performance with Energy Star										
Number of Units / Lifetime kWh Savings	72	1,276,803	29	2,887,716	685	3,298,735	97	870,035	883	8,333,289
B/C Ratio / Planned Budget	1.48	$62,296	2.20	$143,030	1.40	$1,620,080	2.10	$234,270		$2,059,676
Energy Star Appliances										
Number of Rebates / Lifetime kWh Savings	680	1,379,308	982	1,431,540	10,190	14,577,389	2,511	4,249,139	14,363	21,637,376
B/C Ratio / Planned Budget	3.20	$64,528	1.30	$96,810	1.63	$630,031	1.20	$223,003		$1,014,372
Home Energy Assistance (see Note 1)										
Number of Units / Lifetime kWh Savings	45	1,130,822	72	1,211,703	853	11,951,799	83	10,762,879	1053	25,057,203
B/C Ratio / Planned Budget	2.43	$190,939	1.80	$171,354	1.25	$2,136,334	1.70	$371,514		$2,870,141
Energy Star Lighting										
Number of Rebates / Lifetime kWh Savings	9,710	3,014,554	22,020	5,263,584	276,154	63,748,090	62,498	18,938,241	370,382	90,964,469
B/C Ratio / Planned Budget	2.59	$59,459	3.00	$93,810	3.45	$945,047	4.00	$220,000		$1,318,316
C&I New Equipment & Construction										
Number of Participants / Lifetime kWh Savings	13	11,835,770	22	15,966,338	177	75,081,482	13	10,214,550	225	113,098,140
B/C Ratio / Planned Budget	3.17	$270,317	2.80	$133,332	2.98	$1,958,884	2.60	$294,545		$2,657,079
Large C&I Retrofit										
Number of Participants / Lifetime kWh Savings	12	16,977,238	19	5,879,337	212	146,871,876	19	22,473,855	262	192,202,306
B/C Ratio / Planned Budget	3.15	$229,114	1.40	$131,127	1.72	$2,466,743	1.80	$464,987		$3,291,971
Small Business Energy Solutions										
Number of Participants / Lifetime kWh Savings	46	7,059,993	24	2,688,170	465	84,843,464	63	19,633,065	598	114,224,692
B/C Ratio / Planned Budget	1.74	$286,419	1.50	$95,872	10.77	$2,321,641	2.20	$442,374		$3,146,306
Educational Programs (see Note 2)										
B/C Ratio / Planned Budget		$9,496		$35,566		$157,507		$40,000		$233,073
Company Specific Programs										
Number of Participants / Lifetime kWh Savings			13	7,279,361	51	47,734,611				55,013,972
B/C Ratio / Planned Budget		$0	2.60	$198,189		$897,877		$58,500		$1,154,566
Smart Start Program										
Number of Participants / Planned Budget		$0		$8,372		$50,000		$0		$58,372
Utility Incentive										
B/C Ratio / Planned Budget		$109,108		$97,917		$1,130,335		$205,776		$1,543,136
TOTAL PLANNED BUDGET		**$1,472,957**		**$1,321,878**		**$15,259,526**		**$2,777,970**		**$20,832,331**

NOTES:
(1) Unitil's HEA savings target equals 1,476,774 lifetime kWh + (31,693 lifetime MMBtu ÷ 0.003413) = 10,762,879 lifetime kWh
(2) National Grid's Educational Program budget is included within other program budgets and therefore is not included in the total to avoid double counting.

Proposed Budget & Goals

NH CORE Energy Efficiency Program Goals

(January 1 - December 31, 2010)

NH CORE ENERGY EFFICIENCY PROGRAMS	EXPENSES ($)	SAVINGS (Lifetime kWh)	NUMBER OF CUSTOMERS
RESIDENTIAL (nhsaves@home)			
ENERGY STAR Homes	$1,485,323	5,719,313	520
NH Home Performance w/Energy Star	$2,059,676	8,333,289	883
Home Energy Assistance	$2,870,141	25,057,203	1,053
ENERGY STAR Lighting [1]	$1,318,316	90,964,469	370,382
ENERGY STAR Appliances	$1,014,372	21,637,376	14,363
TOTAL RESIDENTIAL	**$8,747,828**	**151,711,650**	**387,201**
COMMERCIAL & INDUSTRIAL (nhsaves@work)			
Educational Programs	$233,073		
Small Business Energy Solutions	$3,146,306	114,224,692	598
Large Business Energy Solutions	$3,291,971	192,202,306	262
New Equipment & Construction	$2,657,079	113,098,140	225
TOTAL COMMERICAL & INDUSTRIAL	**$9,328,429**	**419,525,138**	**1,085**
TOTAL	**$18,076,257**	**571,236,788**	**388,286**

[1] "Number of customers" is actually number of lighting products purchased.

New Hampshire CORE Utilities
Response to Greenhouse Gas Emissions Reduction Fund RFP

March 20, 2009

2. Executive Summary

As noted above, *RE-CORE* builds on the existing CORE Programs by adding new program elements and by increasing the budgets for current programs. Because much of the infrastructure for administering and delivering the expanded programs is already in place, RGGI dollars will be used primarily for services and equipment to reduce energy use and CO_2 emissions. This section will summarize the proposed changes.

2.1. Energy Star Appliance Program: This program will be expanded to include a turn in/recycle component for room air conditioners and second refrigerators and freezers. The air conditioner program will offered through selected NH retailers. Customers who turn-in an old air conditioner will be given a discount coupon towards a new high efficiency Energy Star unit. The second refrigerator-freezer recycle program addresses two of the top energy saving measures identified in *Additional Opportunities for Energy Efficiency in NH*. Customers will be able to responsibly recycle their second refrigerator or freezer by notifying their utility to arrange for pickup and removal.

2.2. Energy Star Homes Program: This program will be expanded to include an option to participate in the National Green Building Program developed by the National Association of Home Builders. The Home Builders & Remodelers Association of NH (HBRANH) will be partnering with the Utilities at the local level. The Utilities will provide accredited verifiers to inspect homes and report to the NAHB for certification of homes to the nationally recognized and ANSI approved Green Building Standard. The Standard calls for homes to be evaluated against criteria in seven categories: (1) lot design/development, (2) resource, (3) energy and (4) water efficiency, (5) indoor environmental quality, (6) operation, maintenance, and homeowner education, and (7) global impact.

2.3. Home Energy Solutions Program: [Note: In Order No. 24,930, the Commission ruled that the Utilities' fuel neutral home weatherization proposal was not ripe for approval, but that the Utilities may petition for reconsideration when they have a more fully developed proposal. The Utilities are currently circulating among the Parties and Staff to DE 08-120 a new fuel neutral proposal. The Utilities are seeking review of and concurrence with the proposal from the Parties and Staff; a fuel neutral filing will be made on or before April 1, 2009. The remainder of this section is contingent upon the Commission approving the fuel neutral proposal. Should the fuel neutral proposal not be approved, the remainder of this section and its corresponding budget line items should be disregarded.]

The HES Program will be expanded in two ways: the NHEC and National Grid will join PSNH and Unitil in offering fuel neutral weatherization services and the fuel neutral program will be broadened to include multi-family facilities larger than four units. The large multi-family weatherization services will include a comprehensive up-front facility audit, assistance with bid preparation and evaluation, and a post installation quality assurance inspection. Incentives for HVAC systems will be comparable to those offered under the New Equipment and Construction Program – the lesser of 75% of the incremental cost or the buy down to a one year payback. All other measures will be incented at 50% of the installed cost (e.g. lighting, weatherization, domestic hot water, etc.). Weatherization services for large multi-family facilities will be offered on a first come first served basis to customers who are positioned to invest in their facility and who have significant energy savings opportunities. Customers who receive natural gas service will be referred to their gas company's energy efficiency programs for all gas energy efficiency measures including weatherization. The customer's gas utility will be the preferred provider; however, the electric Utilities will provide these services if gas program funds are depleted and electric funds are available.

2.4. Large Business Retrofit Program: The utilities believe that expanded spending in this program provides the single largest and most cost-effective opportunity for savings. In addition to the traditional mix of energy saving measures – lighting, process, and cooling – the Utilities recognize that the Commission's recently conducted potential study cited retro-commissioning as the number one opportunity for electric savings. The Utilities will be expanding their efforts to work with customers to identify and capitalize on retro-commissioning projects.

2.5. Education: The Utilities are proposing to expand educational training efforts in three areas: code training, Building Operator Certification (BOC), and BPI Building Analyst training course development. The code training proposal will add four full-day training sessions – two residential and two commercial – to an identical series of trainings being offered across the state as part of the CORE Programs. The BOC course is designed to enhance the skills of facility engineers and operators and will provide them with the training needed to address energy saving and retro-commissioning projects. The final training proposal is a partnership to develop a Building Performance Institute training program with the Manchester and Lakes Region Community Colleges. Once developed, the course syllabus and materials would be available to and used by both colleges to provide training which can lead to BPI certification.

In addition, two new self-directed educational components will be added. The first is modeled after similar regional programs (e.g. Kill-A-Watt™) and encourages customers to better understand their energy usage using a watt-hour monitor borrowed from their local library. The Utilities will partner with local libraries as well as the NH State Library to establish a distribution network for the monitors. The second component is a training video designed to show homeowners how they can save energy around the home.

2.6. Passive Solar Program: This program will provide financial incentives to promote the integration of passive solar technologies with heating, domestic hot water, and industrial process systems. Additional uses for solar thermal systems may be included in this program as the technology matures. The program is open to all customers of the CORE Utilities for residential, commercial, and industrial applications and will be available as a standalone program or can be combined with other programs to enhance the portfolio of available measures. In order to ensure quality, qualifying systems must be Solar Rating Certification Corporation (SRCC) rated. The incentive will fund 25% of qualified solar thermal systems up to the following incentive caps: residential customers - $1,500, small business customers - $4,500, and large business customers - $9,000.

2.7. Project Financing: The Utilities plan to offer financing options for customer co-payments associated with the installation of energy efficiency measures. Specifically, financing would be available to residential customers participating in the Home Energy Solutions Program as well as business customers participating in the Small and Large Business Retrofit Programs. The loans would be offered at no interest and funded through a revolving loan pool established by each utility. Customers will repay the loans through fixed monthly payments on their electric bills, and as an option, customers would be able to choose to repay the loan more quickly. Loans would be capped at the customer co-payment.

The Public Utilities Commission regulates the Utilities with respect to the CORE Energy Efficiency Programs. To the extent that proposed uses of RGGI Funds exceed the authority previously granted to the utilities by the Commission to offer services, the utilities will seek approval of the service offerings. Within 30 days of the approval of RGGI funds, the Utilities will file their proposed tariff for loan services described herein.

While program changes are not being proposed for the remaining CORE Programs, the Utilities are proposing additional funding for Energy Star Lighting, Home Energy Assistance, Small Business Retrofit, Large Business Retrofit, and New Equipment & Construction. Of particular note is the funding request for the Home Energy Assistance program which accounts for more than 30% of this RE-CORE proposal. It should also be noted that additional funding has been requested for Utility Specific Programs. Please refer to the Budget section of this proposal for funding details.

ATTACHMENT J: NH TECHNICAL POTENTIAL STUDY

The following charts were developed by the NH Utilities using the data from the Technical Potential Study completed in January 2009. The charts are intended to be self-explanatory, and to provide a very high level view of the 662 page report and appendices. Definitions of the different energy efficiency potential estimates are pulled directly from the study reprinted here for reference.

- **Technical potential** is defined in this study as the complete and immediate penetration of all measures analyzed in applications where they were deemed technically feasible from an engineering perspective. For the residential sector, two technical potential scenarios were developed: a technical potential (best) scenario, where "best" options are assumed to be installed in situations where "good/better/best" options exist; and a technical potential (traditional) scenario, where "good/better/best" options are allocated for model installation across applicable populations.

- **Maximum Achievable potential** is defined as the maximum penetration of an efficient measure that would be adopted absent consideration of cost or customer behavior. The term "achievable" refers to efficiency measure penetration, based on estimates of New Hampshire-specific building stock, energy using equipment saturations and realistic efficiency penetration levels that can be achieved by 2018 if all remaining standard efficiency equipment were to be replaced on burnout (at the end of its useful measure life) and where all new construction and major renovation activities in the state were done using energy efficient equipment and construction/installation practices. In certain circumstances, where early replacement of specific measures is becoming standard practice, maximum achievable potential includes the retrofit of measures before the end of their useful measure life (i.e., T8 lighting, thermostats, insulation and weatherization of existing homes).

- **Maximum Achievable Cost Effective (M.A.C.E.) potential** is defined as the portion of the maximum achievable potential that is cost effective according to the economic criteria currently used to determine energy efficiency program cost-effectiveness (New Hampshire Public Utility Commission's approved Total Resource Cost Test – NH TRC), before consideration of customer behavior. Application of the TRC test is based on the latest values for avoided cost (electric, natural gas and other fuels) and excludes environmental externalities not already captured with avoided cost values, consistent with current utility and PUC procedures.

- **Potentially Obtainable** scenario is a new output developed for this study[43] and can be defined as an estimate of the potential for the realistic penetration over time of energy efficient measures that are cost effective according to the NH TRC, taking customer behavior into consideration (including consideration of priorities and price). To achieve this potential, a concerted, sustained campaign involving aggressive programs and market interventions would be required. As demonstrated later in this report, the State of New Hampshire and its electric and gas utilities would need to continue to undertake, and perhaps aggressively expand its efforts to achieve these levels of savings.

[43] There has been a recent trend to temper estimates of cost-effective potential by taking into consideration behavioral, market, regulatory, financing and/or political barriers. A just released study by the Electric Power Research Institute used a similar concept that they called the "Realistically Achievable Potential (RAP)." See: *Assessment of Achievable Potential from Energy Efficiency and Demand Response Programs in the U.S.: (2010–2030)*, EPRI, Palo Alto, CA: 2009. 1016987, p. xiv. See also National Action Plan for Energy Efficiency (2007), *Guide for Conducting Energy Efficiency Potential Studies*, prepared by Philip Mosenthal and Jeffrey Loiter, Optimal Energy, Inc., www.epa.gov/eeactionplan, p. 2-4.

Potential Electric Saving Opportunities 2008-2018

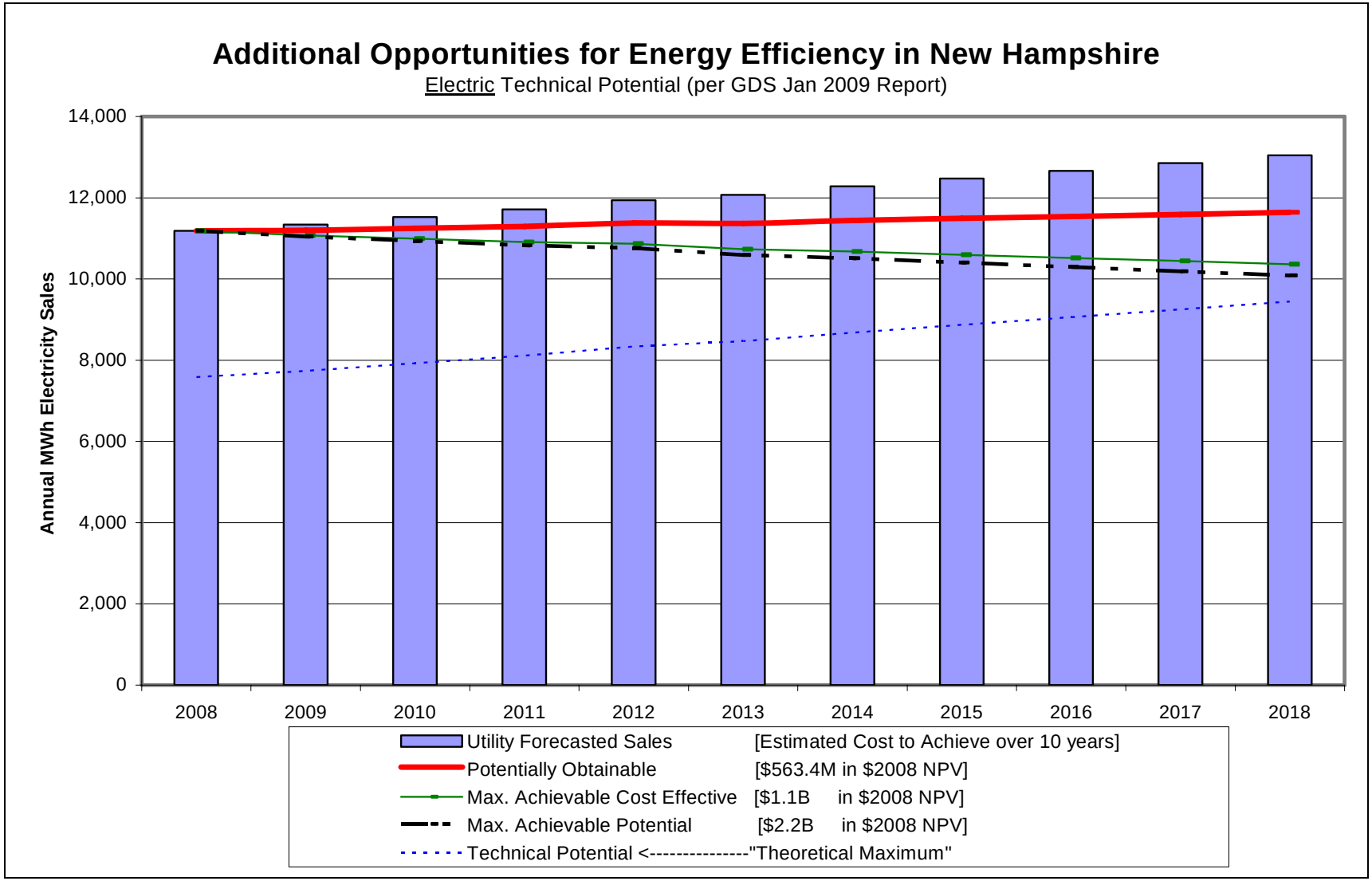

Figure 5: Chart of electric forecasted sales with technical potential scenarios

Potential Non-Electric Saving Opportunities 2008-2018

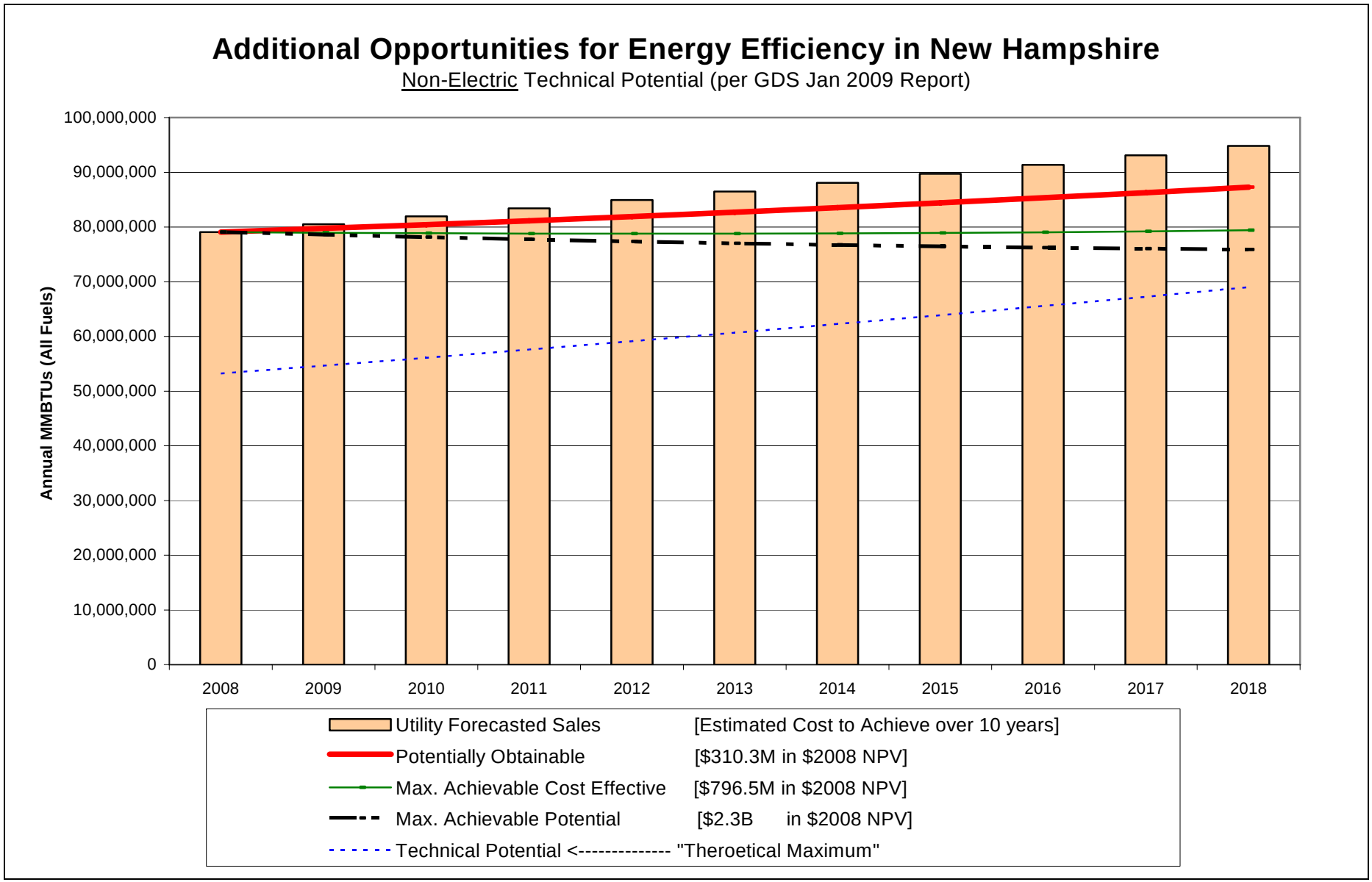

Figure 6: Chart of fossil fuel forecasted sales with technical potential scenarios

Residential Non-Electric Sector Opportunities with CORE Program "mapping"

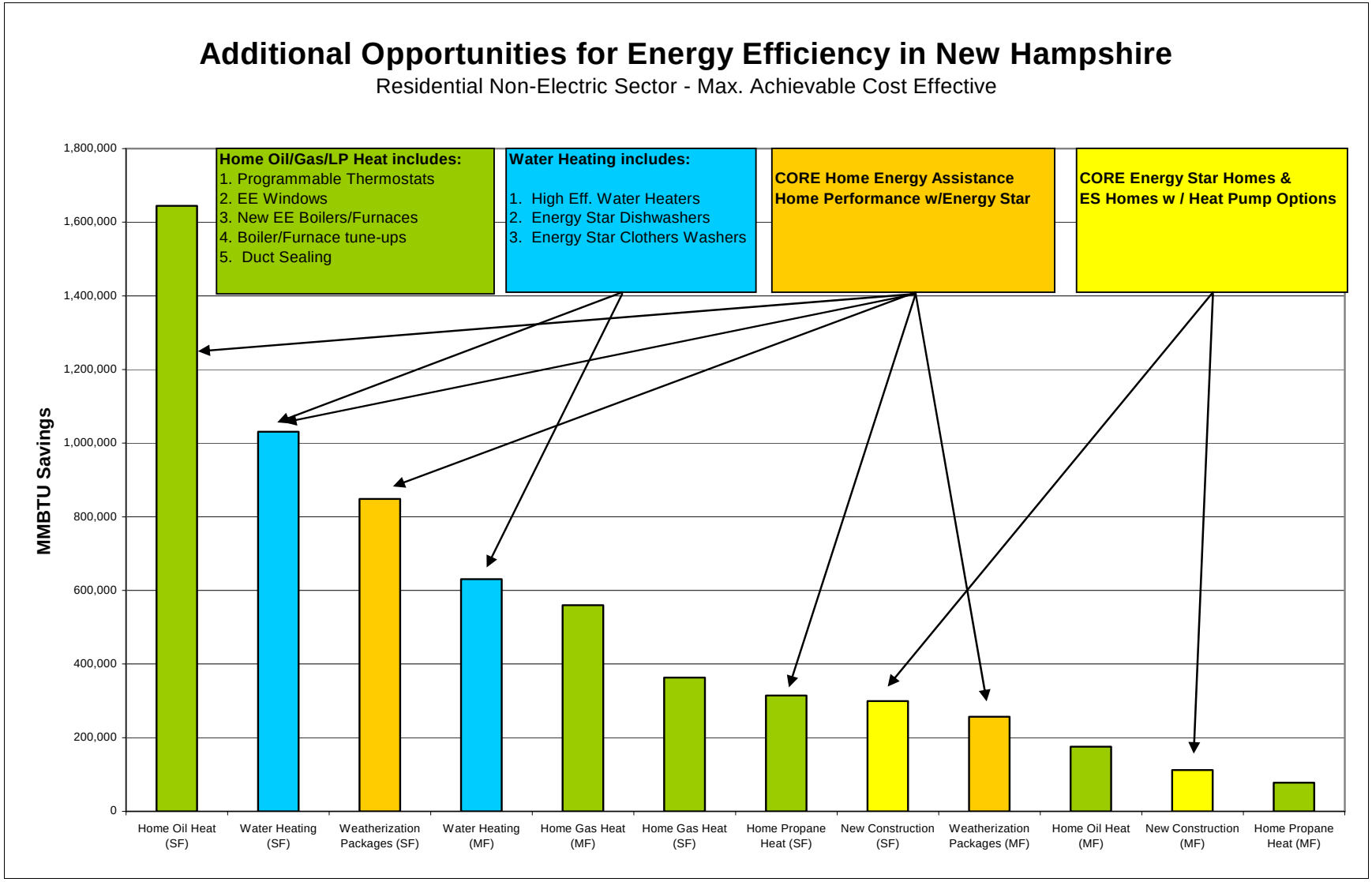

Figure 7: Top 12 residential fossil fuel energy efficiency opportunities mapped with CORE NH Energy Efficiency Programs

Commercial Non-Electric Sector Opportunities with CORE Program "mapping"

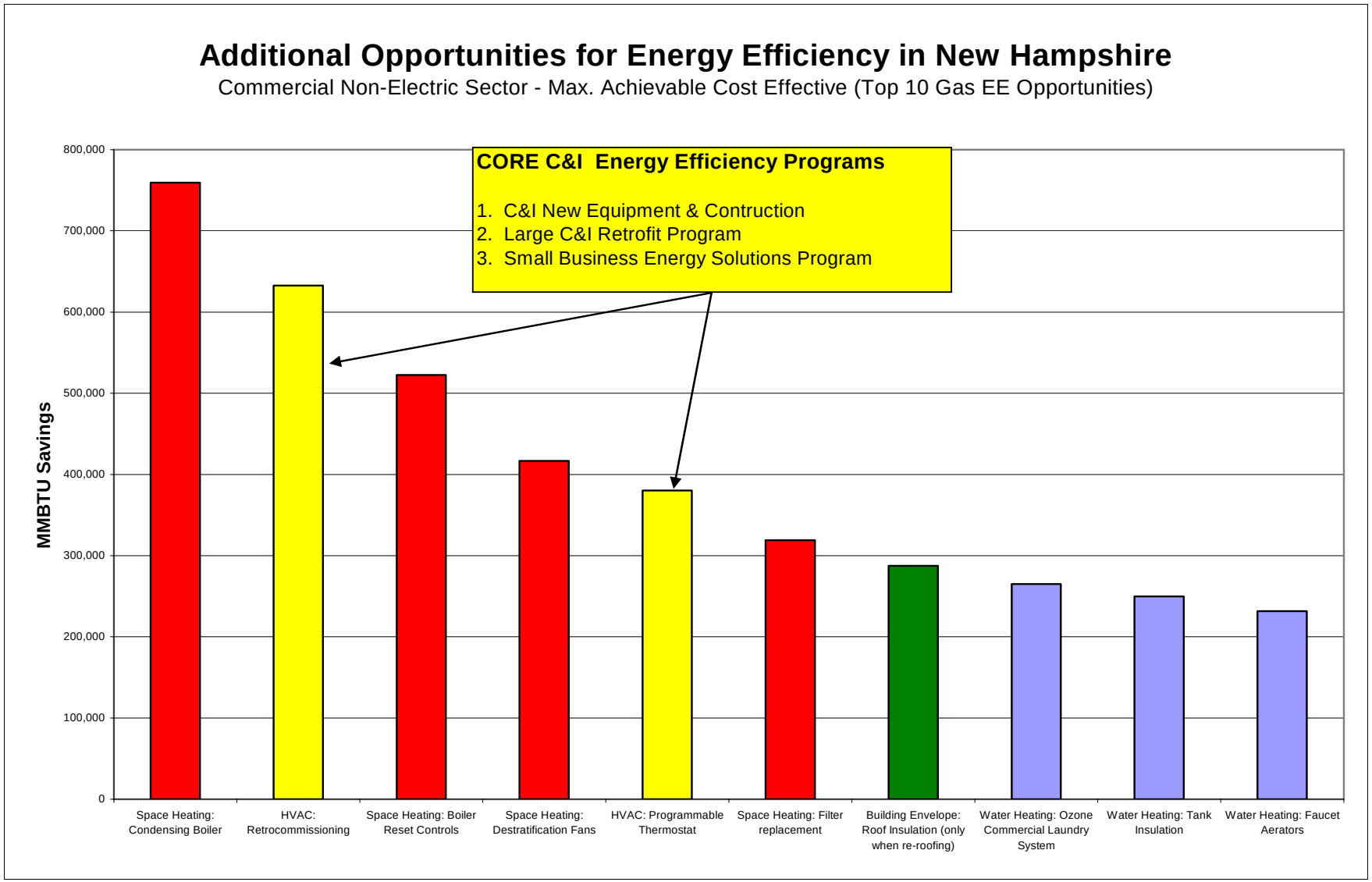

Figure 8: Top 10 commercial fossil fuel energy efficiency opportunities, mapped with CORE NH Energy Efficiency Programs

Residential Electric Sector Opportunities with CORE Program "mapping"

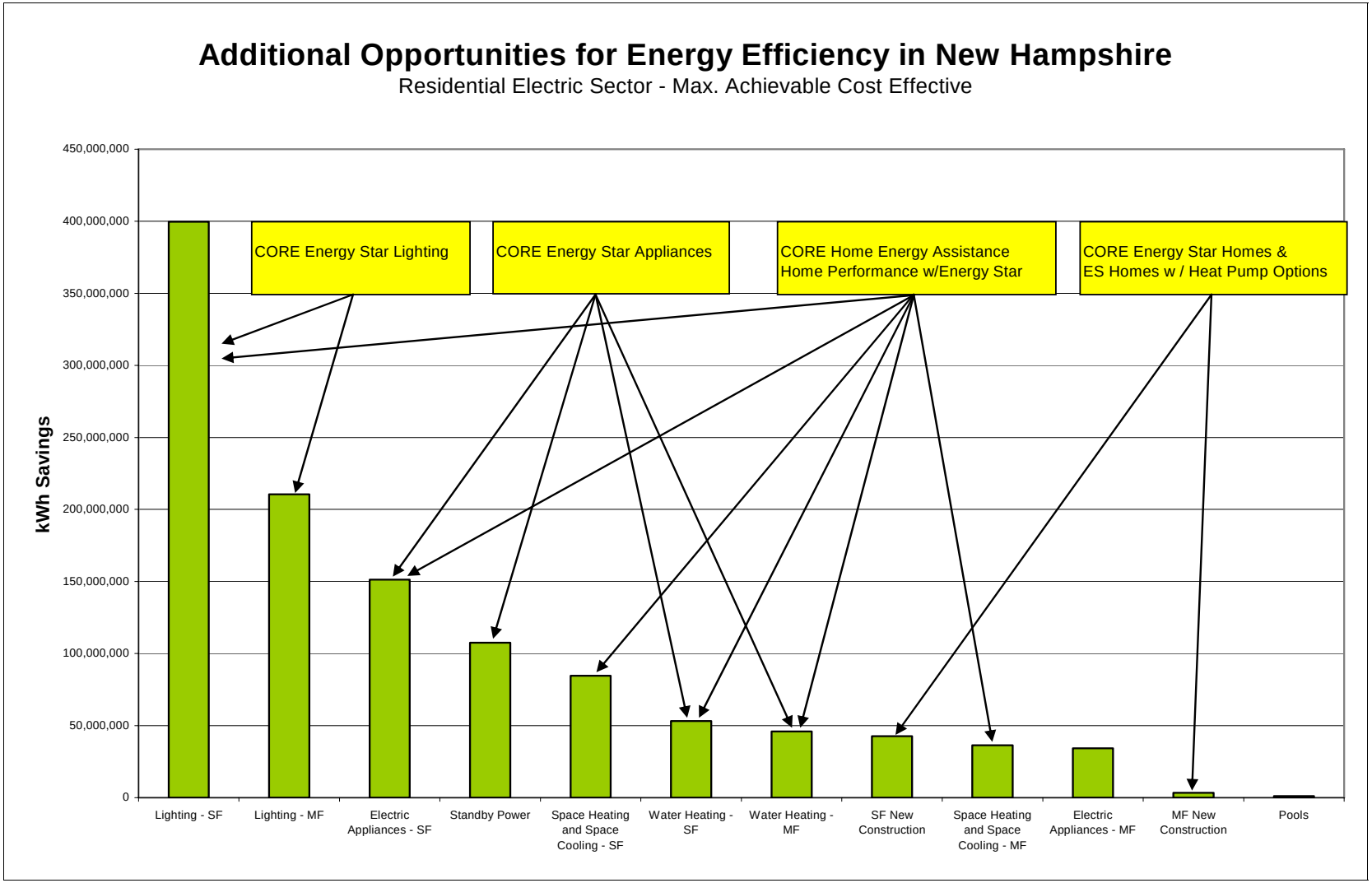

Figure 9: Top 12 residential electric energy efficiency opportunities mapped with CORE NH Energy Efficiency Programs

"…nearly all of the most cost effective energy efficiency measures are included in current programs in some manner."[44]

[44] GDS Associates Additional Opportunities for Energy Efficiency in New Hampshire, Final Report – January 2009

Commercial Electric Sector Opportunities with CORE Program "mapping"

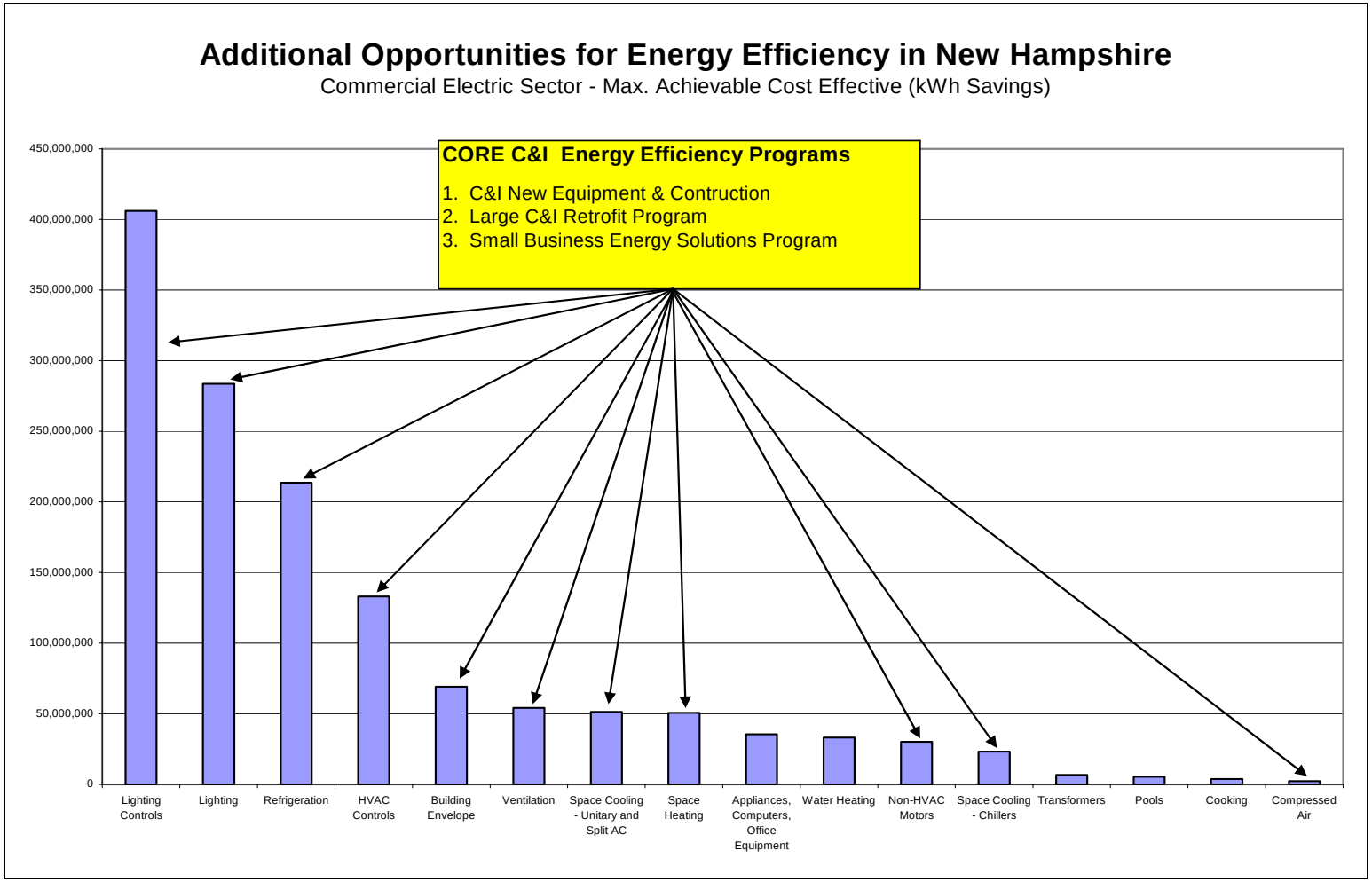

Figure 10: Top 16 commercial electric energy efficiency opportunities mapped with CORE NH Energy Efficiency Programs

"…nearly all of the most cost effective energy efficiency measures are included in current programs in some manner."[45]

[45] GDS Associates Additional Opportunities for Energy Efficiency in New Hampshire, Final Report – January 2009

NH CORE Energy Efficiency Program Goals

(January 1 - December 31, 2010)

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