

**NEW HAMPSHIRE ELECTRIC UTILITIES
BEFORE THE
NEW HAMPSHIRE PUBLIC UTILITIES COMMISSION**

**2008 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.

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I. INTRODUCTION

This filing for the 2008 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 members¹. 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, we 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 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, 2006, have consistently exceeded expectations. Key benchmarks highlighting the results include:

- The programs have saved 4.3 billion lifetime kWh – enough energy to power the city of Concord for 11.3 years!

¹ Hereinafter the word “customer” will be understood to mean both customers and members.

- ❑ Saving 4.3 billion kWh is equivalent to saving \$608 million – benefiting both customers and the NH economy. Based on CORE Program expenditures, this represents a return for customers of more than \$7 for every program dollar invested.
- ❑ We have provided customers with 275,000 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 CO₂, SO₂, and NO_x by 2.7 million tons – equivalent to the annual emissions of more than 579,000 cars.

The CORE Programs have saved energy at an average cost under 2.0 cents per lifetime kWh – as compared to the average retail price of 14.2cents/kWh². 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.

B. Evolving Nature of the CORE Programs

While the program names and the customers they serve have not changed, 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:

- ❑ With the reduction in the retail price of compact fluorescent lighting and the introduction of multi-packs, we have reduced rebate levels. This is intended to strike a balance between the best use of limited funds, with helping customers overcome the higher initial costs of compact fluorescent lighting.
- ❑ As T8 lighting became a larger share of the new construction market, and in response to a program evaluation, rebates for T8 lighting for larger customers were dropped in favor of providing incentives on the more efficient high performance T8 lamps with electronic ballasts. Additional promotion and training is being developed to increase the awareness and sales of these new lights by lighting distributors, energy service companies and customers. Advancements in new LED lamps and LED fixtures are being followed, and experts are saying that affordable, production-grade fixtures for office lighting may be ready as soon as 2010.

² OEP’s “Average Fuel Prices as of July 2, 2007”, <http://www.nh.gov/oep/programs/energy/fuelprices.htm>.

- ❑ The incentive structure for the ENERGY STAR® Homes program was changed to provide higher incentives for performance improvements, along with reductions in appliance rebates. The standard for what constitutes an ENERGY STAR Home also changed due to the new program guidelines released September 30, 2005 by the Environmental Protection Agency and have been incorporated for 2007 and beyond.
- ❑ Reporting for the low income Home Energy Assistance Program has been expanded in response to requests from interested parties.
- ❑ In 2006, several New Hampshire customers received additional funding for energy efficiency projects through grants from the U.S. Department of Agricultural – Rural Development Business Programs³. The Farm Security and Rural Investment Act of 2002 established the renewable energy and energy efficiency improvements program to help agricultural producers and rural small businesses reduce energy costs and consumption through the purchase of renewable energy systems and installation of energy efficiency improvements.

Another force for change is the Energy Policy Act of 2005⁴, which was signed into law on August 8, 2005. The implications of higher standards, new tax incentives, and various funding proposals have been incorporated into the CORE programs, including:

- ✓ ENERGY STAR Homes Program: A tax credit of \$2,000 per home is available through the end of 2008 to homebuilders who build homes (including both site-built and manufactured homes) projected to save at least 50% of the heating and cooling energy of a comparable home that meets the standards of the 2004 Supplement to the 2003 International Energy Conservation Code (2004 IECC Supplement). A \$1,000 tax credit is available to manufactured home producers for models that save 30% or that qualify for the federal ENERGY STAR Homes program. Homes in the NH ENERGY STAR Homes program met this requirement were provided with certification documentation.
- ✓ ENERGY STAR Appliance Program: the criteria for ENERGY STAR appliances changed on January 1, 2007, requiring higher efficiency for clothes washers. The new standard requires ENERGY STAR clothes washers to have a Modified Energy Factor (MEF) greater than or equal to 1.72 (prior standard was 1.42) and a Water Factor (WF) of less than or equal to 8.0. Although 86 models were delisted in 2007, new models have been introduced and the number of qualifying Energy Star models climbed to 265 as of September 21, 2007.

³ <http://www.rurdev.usda.gov/rbs/farbill/index.html>

⁴ http://energy.senate.gov/public/_files/ConferenceReport0.pdf and http://www.energystar.gov/index.cfm?c=products.pr_tax_credits#7

- ✓ Tax Deductions for Commercial Buildings: A tax deduction of up to \$1.80 per square foot is available to owners or designers of new or existing commercial buildings that save at least 50 percent of the heating and cooling energy of a building that meets ASHRAE Standard 90.1-2001. Partial deductions of up to \$.60 per square foot can be taken for measures affecting any one of three building systems: the building envelope, lighting, or heating and cooling systems. The credits are available for systems “placed in service” from January 1, 2006 through December 31, 2008.

The Energy Star Homes tax credit and the C&I tax deductions, originally valid through 2007, have been extended to December 31, 2008 and provide additional financial assistance to customers with qualifying projects.

Beyond the program changes that were made in response to the Energy Policy Act of 2005, other modifications related to “sustainability” and “green” practices are being discussed. There has been a noticeable increase in the number of customers looking for ways to make their homes, businesses, and towns more “sustainable”. As a result, the NH CORE Energy Efficiency Programs are becoming valuable ways to help customers meet those needs. Some examples of sustainable/green initiatives being done by customers include:

- ✓ *“At the beginning of this year, New Hampshire Ball Bearings issued a very unusual annual report. There was no mention of the company’s economic performance until the next to last page. The bottom line was not measured in dollars and cents, but in gallons of solvents used, tons of solid waste generated, and the amount of kilowatts saved.”*
NH Business Review, March 30, 2007
- ✓ *Southern New Hampshire University is becoming the first carbon-neutral university campus in New Hampshire, President Paul LeBlanc announced at the university’s graduation ceremony Saturday...As LeBlanc said, “We have a lot more work to do with conservation and the retrofitting of older buildings, but climate change looms as the single most important challenge facing this next generation of students. We want to both educate and model innovative solutions.”*
SNHU Communications Office, May 19, 2007
- ✓ *“The University of New Hampshire (UNH) was one of 50 colleges around the country named in KIWI Magazine’s first ‘Green College Report.’ KIWI, a magazine dedicated to helping families live natural and organic lifestyles, cited UNH for its dining and composting initiatives, its climate change focused courses, and its University Office of Sustainability, which is the nation’s longest-standing endowed university sustainability program. UNH was the only New Hampshire school included in the report.”*
UNH Media Relations, September 20, 2007

- ✓ *“As fossil fuel costs rise to unprecedented levels, one local business hopes to curb some of its electrical expenses through the use of geothermal technology. With a new facility expected to open in August, longtime downtown fixture Goffstown Ace Hardware will heat and cool the building using an eco-friendly temperature control system...Along with embracing Earth-friendly technology in its heating and air conditioning system, Goffstown Ace Hardware is also making environmentally conscious products available to consumers.”*
Goffstown News, May 23, 2007

C. 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 at the time of system peak 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' monitoring and evaluation 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.

Continuing the policy approved by the Commission last year, the NH Electric Utilities recommend that in 2008 kW demand savings achieved via these energy efficiency programs continue to be reported by the utilities to ISO-NE 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.

D. 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.

- ❑ *“First let me say thanks for coordinating this class. The bottom line is that it will be valuable for me both currently and in the future to know and understand the information presented. I felt like it was re-taking my 4 year Industrial Engineering class all over in just 4 ½ days”*
Tom Robichaud, NH Ball Bearing, Certified Energy Manager Class participant
- ❑ *“Your facility is top notch, your people are friendly and professional. The energy audit class was extremely informative. I am already using the skills I acquired, from the course, to analyze other schools in our district. In time we should realize tremendous energy efficiencies in our buildings. The course that you put together is an asset of great proportions. I will highly recommend it to any and all fellow maintenance people I encounter. Once again, thank you, and continued success in this endeavor.”*
Commercial Energy Auditing Class participant.
- ❑ *“A great program benefiting the owner, the property, and the environment. Thank You!”*
Home Energy Assistance Program Participant, Multifamily complex owner – Canaan, NH
- ❑ *“I was very impressed by the competence, professionalism and courtesy the auditor and crew displayed. Very efficient and “no-nonsense” in getting and going about their work. For the 15 years I have been in my apartment, and never could be comfortable due to winter drafts. Since Home Energy Assistance (came) to my apartment, I am amazed at how comfortable I am at 88 yrs of age. Your men were thorough, professional and courteous, and again, can’t thank you enough.”*
Home Energy Assistance Program participant.
- ❑ *“I could not afford to do this myself. Dan’s ability to explain in layman’s terms why things were being done on energy saving terms was fantastic. They explained all of how and why and what would change after installing any new items. We are now much warmer, savings in oil and electricity by almost ½. Mark, Pierre... Thank you all so much.”*
Home Energy Assistance Program participant.

- ❑ *“By doing ENERGY STAR and Fannie Mae approval, we’ve added value for each unit owner, because these are both endorsements of a quality project. The incentives are excellent, definitely the way to go to enable additional upfront capital cost to be incurred, and then obviously the operating costs are lower.”*
ENERGY STAR Homes Participant
- ❑ *“For the first time the Housing Authority participated in something like this, the process was very easy, certainly a worthwhile undertaking. ENERGY STAR Homes staff were great to work with, and everything went very well. We plan to go with ENERGY STAR for our next project.”*
ENERGY STAR Home Participant, Diane Kierstead, Executive Director, Salem Housing Authority
- ❑ *“There has been a night and day difference since we enrolled in the Appliance Program. Ten years ago we had only one ENERGY STAR appliance on our sales floor. Today, eighty percent of our clothes washers are ENERGY STAR.”*
ENERGY STAR Appliance Retailer, Dave Fouper - Manager of Baron’s TV and Appliance
- ❑ *“Energy Savings / \$ were realized from the very first month. Excellent program. Most satisfied... would recommend to all. Great program for small business.”*
Small Business Energy Solutions participant
- ❑ *“I am so happy with the unit (economizer and controls for walk in coolers) I have shown all my customers... well a lot of them.”*
Small Business Energy Solutions participant
- ❑ *"We replaced over 100 hp of mechanical aerators at our waste water treatment lagoons with five solar-powered aerators. Although the new systems have only been in operation for a short time, we are excited about their potential. Not only will the town realize tens of thousands of dollars in annual savings, the new equipment from SolarBee Inc. moves more water and is virtually maintenance free. I've been in the business for 22 years and I wouldn't believe if I didn't see it for myself."*
Kevin McKinnon, Director of Public Works, Town of Colebrook, Small Business Energy Solutions Program participant.

E. CORE Programs Recognized Nationally and Regionally

The first priority of the NH Electric Utilities has been and continues to be to achieve excellence in the implementation of the CORE Programs in New Hampshire. In fact, as the programs mature and gain momentum, they are becoming known and recognized beyond our state's borders.

- ❑ In 2007, the NH Electric Utilities, several homebuilders and home energy rating providers received national recognition and were presented the “ENERGY STAR for Homes Outstanding Achievement Awards” from the U. S. Environmental Protection Agency for sponsoring and building ENERGY STAR qualified homes in New Hampshire during 2006. This award recognizes the important contribution being made to energy-efficient construction and environmental protection by sponsoring ENERGY STAR qualified homes in New Hampshire.
- ❑ The Environmental Protection Agency⁵ also recognized New Hampshire as one of 15 States Leading the Nation in ENERGY STAR Homes. This recognition was based on the fact that over 12 percent of New Hampshire's newly-constructed single family homes earned the government's ENERGY STAR rating for superior energy efficiency. Builders and homebuyers are starting to recognize the value of building, buying and living in an energy efficient home with an ENERGY STAR label.
- ❑ In the spring of 2005, the American Council for an Energy Efficient Economy (ACEEE) initiated a national search for "exemplary" low-income energy efficiency programs as part of a project to identify and profile programs that provide models of "best practices" for addressing the energy needs of low-income households. In September 2005 the ACEEE named as an “exemplary” program the CORE Home Energy Assistance program which has been providing home weatherization services and appliance replacements to income eligible families in New Hampshire since 2002⁶.
- ❑ Based on nationwide ENERGY STAR awareness surveys conducted by Nexus Market Research in 2001 and 2004, New Hampshire households moved from “middle of the pack” to first in the nation in their recognition of the ENERGY STAR label. Perhaps more importantly, New Hampshire electric customers are acting on that knowledge. D&R International tracks sales of ENERGY STAR appliances in each state as a percent of total sales for four major appliances: clothes washers, refrigerators, dishwashers, and room air conditioners. In 2001 prior to introduction of the CORE Programs, New Hampshire was ranked nationally as low as 37th. In 2004 two years after the introduction of the CORE

⁵ See http://energystar.gov/index.cfm?c=news.nr_news#states

⁶ The American Council for an Energy-Efficient Economy is a nonprofit organization dedicated to advancing energy efficiency as a means of promoting both economic prosperity and environmental protection. The full report detailing the “exemplary” program selection process and providing descriptions of the programs selected can be found at <http://aceee.org/pubs/U053.htm>.

programs, New Hampshire led the nation in sales of ENERGY STAR appliances as a percent of total sales, ranking first in air conditioners, first in refrigerators, second in clothes washers, and fifth in dishwashers. In 2006, for the third year in a row, New Hampshire led the nation in sales of ENERGY STAR appliances.

- ❑ For the past four years the New Hampshire Lodging & Restaurant Association and the NH Department of Environmental Services have promoted the CORE programs under the umbrella of the NH 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 targeted the needs of the restaurant and lodging industry in New Hampshire and was recognized with the 2003 SAMI IZZO Recycler of the Year Award.

F. Statewide Consistency and Coordinated Program Management

The uniform planning, delivery, evaluation and access to energy efficiency programs will continue under the proposed 2007 CORE 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, e.g., one utility may use its employees to deliver residential weatherization programs while another may use contractors; 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 Electric Utilities, identify corrective actions, and provide quarterly status reports to the Staff and interested parties.

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

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 2008 for projects to be completed in 2008, 2009, and 2010. 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 2009 and 2010 will be developed in 2008, 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 2008 program guidelines and rules will apply to the 2009 and 2010 commitments. Customers receiving commitments in 2008 will not be barred from participating in any new programs introduced in 2009 and 2010 which supplement or supplant the existing programs, subject to any limits on the dollar amount that a single customer may receive under the 2009 and 2010 programs. The funds will be paid out of the 2009 and 2010 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 2008 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.

K. Senate Bill 228 Budget Impact

The 2008 budgets for NHEC and PSNH have been reduced by \$86,112 and \$935,077 respectively, one third of the amount used 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".

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 2006 International Energy Conservation Code (IECC)⁷. 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)⁸ - 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 2002-2007, 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 2007 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.

⁷ The New Hampshire Energy Code, adopted in August 2007, is based upon the 2006 International Energy Conservation Code.

⁸ As of 2007, an ENERGY STAR® home must meet the Home Energy Rating System (HERS) index of no more than 85 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.

During 2008, the focus will be to continuing educating builders on the national 2007 program changes and assisting them as they work to meet the 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

As noted previously, the Environmental Protection Agency⁹ recognized New Hampshire as one of 15 states leading the nation in ENERGY STAR homes.

Goals/Benefits:

Estimated Number of Customers to be completed:	554
Projected lifetime kWh savings:	2,686,115

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, 2008 Budget:	\$1,458,510
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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.

⁹ See http://energystar.gov/index.cfm?c=news.nr_news#states

2. Home Energy Solutions Program

Overview:

This program will continue to upgrade 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:

The program is open to both single and multi-family households. Marketing efforts will be targeted first to customers with electric heat and then to those with high electric use. NH Electric Utility personnel will administer the program and will contract for the delivery of program services.

Goals/Benefits:

Estimated Number of Customers to be served:	1,528
Projected lifetime kWh savings:	28,329,553

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, 2008 Budget:	\$1,956,794
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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.

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 more than 90 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.

Goals/Benefits:

Estimated Number of Products Incented:	320,725
Projected lifetime kWh savings:	94,647,184

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, 2008 Budget:	\$1,353,907
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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 and a \$20 rebate for ENERGY STAR rated room air conditioners. 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.

Goals/Benefits:

Estimated Number of Products Incented:	13,340
Projected lifetime kWh savings:	16,667,155

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, 2008 Budget:	\$891,903
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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 \$4,000 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 Home Energy Solutions 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 Home Energy Solutions 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.

Goals/Benefits:

Estimated Number of Customers to be served:	955
Projected lifetime kWh savings:	26,481,691

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, 2008 Budget:	\$2,441,012
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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 Group¹⁰.

¹⁰ 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:

Estimated Number of Customers to be served:	196
Projected lifetime kWh savings:	108,803,808

Budget:

January 1 - December 31, 2008 Budget:	\$2,771,151
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 larger¹¹, 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%¹² 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.

Goals/Benefits:

Estimated Number of Customers to be served:	195
Projected lifetime kWh savings:	212,712,289

Budget:

January 1 - December 31, 2008 Budget:	\$3,234,760
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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.

¹¹ 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.

¹² 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 demand¹³. Program offerings include but are not limited to lighting, programmable thermostats, electric hot water measures, and refrigeration measures. The program pays 50% ¹⁴of 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.

Goals/Benefits:

Estimated Number of Customers to be served:	612
Projected lifetime kWh savings:	105,895,911

Budget:

January 1 - December 31, 2008 Budget:	\$3,194,294
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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.

¹³ 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.

¹⁴ 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 2008 are as follows:

1. Energy Code Training: Provide financial support for the State of NH/NHPUC joint statewide residential and C&I energy code trainings.
2. Collaborative Seminars: Partner with trade allies to encourage and sponsor energy efficiency seminars and presentations for NH businesses.
3. C&I Customer Education: Develop and offer training seminars and workshops of interest to C&I customers and professionals (e.g., NH Commercial Energy Auditing Course). 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.
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 teachersThe 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	GSE	NHEC	PSNH	UNITIL	2008
Energy Code Training	\$480	\$1,000	\$11,820	\$2,000	\$15,300
Collaborative Seminars	\$1,860	\$1,500	\$14,900	\$2,000	\$20,260
C/I Customer Education	\$2,340	\$2,700	\$26,000	\$4,000	\$35,040
Energy Education K-12	<u>\$3,928</u>	<u>\$20,778</u>	<u>\$75,000</u>	<u>\$7,000</u>	<u>\$106,706</u>
Total	\$8,608	\$25,978	\$127,720	\$15,000	\$177,306

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.

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.

Budget:

January 1 - December 31, 2008 Budget: \$105,514

Measures of Success & Market Transition Strategy:

Success for this program will be based on the continued maintenance of existing load management equipment. As wholesale energy markets mature, modifications may be proposed to this program

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 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.

Budget:

January 1, - December 31, 2008 \$20,510

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 standard high efficiency 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.

HVAC projects commonly have ductwork layouts that are incorrectly designed and constructed and have ducts that are sealed and insulated improperly, if they are sealed and insulated at all. As part of this High Efficiency Heat Pump Program, NHEC may have a third party mechanical engineer design the ductwork for new construction or retrofit applications. All ductwork will be designed, installed, replaced, sealed and insulated properly.

Delivery:

NHEC will continue to offer these technologies to residential members for new construction and residential retrofit applications. Certainly, the feasibility and cost-effectiveness of specific applications will vary by type of construction/renovation activity, and types of equipment being considered.

Goals/Benefits:

Estimated Number of Members to be served:	12
Projected lifetime kWh savings:	4,273,326
Projected Benefit/Cost Ratio:	1.47

Budget:

January 1 - December 31, 2008:	\$116,936
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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 2008 sales of 8,385,334 MWh and a System Benefits Charge (SBC) rate of 1.8 mills/kWh.
2. This budget is reduced by \$935,077, one third of the amount used 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 those utilities 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".
3. Estimated ISO-NE Forward Capacity Payments for December 2006 – December 2008 were added to this budget (\$700,000). (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.")
4. All customers fund the Low Income Energy Efficiency Program in proportion to their contributions to SBC revenues. Funding for this program comes "off the top" of the budget. PSNH determined its budget for this program using the same ratios used by the Low Income Subcommittee of the Energy Efficiency Working Group. In their report the Subcommittee had a first year statewide budget of \$1.5 million with an SBC of 1.0 mills/kWh. This statewide low income budget grew to \$2.5 million in year three when PSNH's SBC was assumed to be 2.5 mills/kWh. In determining the budget, PSNH used the same relative proportions and assumed PSNH's contribution to the statewide total was 74.64%.
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 (38.4% residential, 61.6% 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 repaid¹⁵. 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 incentive set

¹⁵ Docket DE 01-080, Order No. 23,851, November 29, 2001, Section III, page 19.

aside for Smart Start is included in the Smart Start budget. The set aside for the remaining programs was estimated at 8%¹⁶; the budget includes separate line items for the estimated commercial and residential 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 2007 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 interest¹⁷ monthly at the prime rate 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.

¹⁶ 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..."

¹⁷ DE 96-150, Order 23,574, November 1, 2000, page 25.

- ❑ 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.
- ❑ 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)	\$20,000	\$50,000
Rate GV Customers (101 kW to 1,000 kW)	\$50,000 plus \$5,000 for each GWH ¹⁸ 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.

¹⁸ 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:

Program Implementation	\$ 50,000
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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 Option

Overview:

This enhancement will provide an incentive for customers to install geothermal heat pumps as part of the ENERGY STAR Homes Program. Customers who select this option agree to build their home to a higher standard than ENERGY STAR and must pay for the ENERGY STAR and Home Energy Rating themselves. Participants are eligible for an incentive up to \$7,500.

Delivery:

Delivery would be coordinated with the CORE ENERGY STAR Homes Program. Geothermal systems contractors would provide the services specific to this option.

Goals/Benefits:

Estimate number of customers to be served	34
Projected lifetime kWh savings:	15,282,147
Projected Benefit/Cost Ratio:	1.18

According to the Environmental Protection Agency, geothermal systems are the most energy efficient, environmentally clean, and cost efficient space conditioning systems available¹⁹. 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 and this infrastructure is growing as evidenced by customer demand and the turn out at forums such as the most recent geothermal heat pump manufacturer's training sessions as well as interest in the International Ground Source Heat Pump Association's upcoming accredited installer program. This enhancement to the ENERGY STAR Homes Program is important to the continued viability and growth of geothermal systems in New Hampshire.

Budget:

January 1 - December 31, 2008 Budget:	\$316,410
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Measures of Success & Market Transition Strategy:

Success factors for this program include attaining the planned participation and energy savings goals. The geothermal option would be available for the duration of the ENERGY STAR Homes Program.

¹⁹ <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.

Between 2003 and 2007, PSNH partnered with:

- ✓ the NH Department of Education, via Ed Murdough, to provide BOC and Commercial Energy Auditing scholarships to facility and maintenance personnel for New Hampshire public school departments and districts. Between 2004 and 2005, BOC Certification was earned by 42 individuals representing 39 New Hampshire public school departments and districts. (The Building Operator Certification (BOC) Program is a competency-based training curriculum designed to improve energy efficiency in their schools.) Between the Spring of 2006 and the Fall of 2007, of the 68 Commercial Energy Auditing Class participants, 19 from public schools and towns received scholarships
- ✓ the Jordan Institute as part of the “NH Partnership for High Performance Schools” program that is offered primarily to K-12 public schools in NH. The program mission is to promote energy efficient and healthy school facilities, resulting in better learning environments and more sustainable buildings. Founded in 1995, The Jordan Institute is a science-based, non-advocacy, non-profit organization, developing initiatives that focus on the intersection of a healthy environment, healthy people, and a healthy economy.

Goals/Benefits:

In its order²⁰ 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.

Budget:

January 1 - December 31, 2008 Budget: \$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.

²⁰ Order No. 23,850, November 29, 2001, page 18

H. C&I RFP Pilot 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 \$200,000. C&I customers of PSNH, energy service companies²¹ and other third party service providers representing C&I customers are eligible to participate in this program.

The respondents to the RFP can be any PSNH customer²², or organization, group or individual 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.

Services Offered:

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.

Some 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), and any repair or maintenance project.

²¹ Contractors involved in the implementation of PSNH's C&I energy efficiency programs are ineligible to participate in the RFP Pilot.

²² Except for Rate B customers (see Availability under C&I Program Descriptions).

Because one of the program's goals is to assess the degree to which projects require incentives, 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 items other than lighting (HVAC and process) and whether the environmental impacts reduce on-site emissions or waste stream impacts. All projects must be qualified on the basis of established cost-effectiveness criteria.

The RFP solicits responses for proposals in two tracks, a Project Track and a Study Track. The Project Track seeks proposals that can be developed in a short period of time and still have sufficient detail to accurately estimate energy savings, project costs, and other parameters. The Study Track seeks proposals for projects which appear to have sufficient energy savings, but need additional study due to complexity, engineering study costs, or other reasons.

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 bid is too high or their project savings are too low, a competing project will be awarded the limited 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 and these sessions to companies greater than 200 kW peak demand who might qualify either individually or on an aggregated basis. Potential third party energy service companies will also be notified. Collateral materials will be made available to educate these groups on the RFP Program.

Goals/Benefits:

Estimated Number of Customers to be served:	3
Projected lifetime kWh savings:	27,376,636
Projected Benefit/Cost Ratio:	3.01

This program is designed to foster competition and to stimulate the development of innovative energy efficiency projects. It will also provide an opportunity to incent 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 than those offered in the CORE C&I programs, it may be possible to lower the CORE incentive levels.

Budget:

January 1 - December 31, 2008 Budget: \$519,350

Measures of Success & Market Transition Strategy:

Success factors for this program include: attaining the planned participation and energy savings goals, and generating a high level of interest among customers and contractors 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, Unitol 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 audit tools.

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 is 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 *HomeEnergySuite*[™] (“HES”) features 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 *CommercialEnergySuite*[™] (“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 *HomeEnergySuite* and *CommercialEnergySuite*.

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 do not qualify for the CORE Programs.

Program Budget:

January 1 - December 31, 2008 Budget: \$39,000

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 tools.

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)

During 2007, Commission staff and the Utilities collaborated to discuss and prioritize the M&E needs of New Hampshire. As a result, two studies emerged as priority for 2008: (1) Establishing a Multi-Year Evaluation Plan that addresses the needs of New Hampshire; and (2) a study to characterize the market and assess opportunities for energy efficiency in the State.

In 2007, several studies were also initiated as part of the State Program Working Group's (SPWG) effort to facilitate collaboration among New England states who must conduct Measurement & Verification activities as required by the ISO-NE for participation in the Forward Capacity Market. New Hampshire joined in this effort and the following studies commenced in 2007:

1. RLW Analytics, *Coincidence Factor Study: Residential and Commercial Industrial Lighting Measures* (completed May 2007)
2. GDS Associates, *Measure Life Report: Residential and Commercial/Industrial Lighting and HVAC Measures* (completed June 2007)
3. RLW Analytics, *Coincidence Factor Study for Residential Room Air Conditioners* (started May 2007)
4. Nexus Market Research, *Residential Lighting Persistence Study* (started August 2007)

Other studies may be conducted in 2008 as a result of SPWG collaboration.

Additionally, an updated avoided energy supply cost study (conducted jointly on a regional basis) was completed in 2007 for use in supporting 2008 and 2009 planning efforts. Avoided energy supply costs are typically updated on a regional basis every two years.

Other New Hampshire utility-specific studies initiated or completed in 2007 include:

1. Synapse Energy Economics, Inc., *Avoided Energy Supply Costs in New England: 2007 Final Report*, August 2007.
2. ICF Consulting, *PSNH Avoided Transmission & Distribution Costs*, September 2007.
3. RLW Analytics, Inc., *National Grid Lighting Controls Impact Evaluation, Final Report, 2005 Energy Initiative, Design 2000plus and Small Business Services Programs*, June 4, 2007.
4. RLW Analytics, Inc., *Sample Design and Impact Evaluation of the 2006 Custom Program*, July 20, 2007.
5. Demand Management Institute, *Impact Evaluation of 2005 Custom Process Installations – Part I*, June 5, 2007.
6. UTS Energy Engineering, LLC, *Impact Evaluation of 2005 Custom Process Installations – Part II*, June 19, 2007.
7. GDS Associates, Inc., *Impact Evaluation of 2005 Custom Process Installations – Part III*, July 11, 2007.
8. RLW Analytics, Inc., *Impact Evaluation Study of 2006 Custom Lighting Installations*, July 5, 2007.
9. RLW Analytics, Inc., *Small Business Services Custom Measure Impact Evaluation*, March 23, 2007.
10. RLW Analytics, Inc., *Impact Evaluation Analysis of the 2005 Custom SBS Program*, May 29, 2007.

In 2008, Commission Staff will retain responsibility for monitoring and evaluation efforts.

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.

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:

$$\text{INCENTIVE} = [4\% \times \text{BUDGET}] \times [(\text{BC}_{\text{ACT}}/\text{BC}_{\text{PRE}}) + (\text{kWh}_{\text{ACT}}/\text{kWh}_{\text{PRE}})]$$

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: Home Energy Solutions, 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 approved²³ 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 *2007 Avoided-Energy-Supply Costs in New England*²⁴.

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 2.7%²⁵ per annum and a nominal discount rate of 8.25%²⁶.

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.

²³ DE 01-057, Order No. 23,850, November 29, 2001, page 19.

²⁴ *Avoided Energy Supply Costs in New England*, August 2007.

²⁵ Used the Gross Domestic Product: Implicit Price Deflator and calculated the difference between the April 1, 2006 and April 1, 2007 rates. See <http://research.stlouisfed.org/fred2/data/GDPDEF.txt>

²⁶ 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.nfsn.com/library/prime.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 incentives²⁷...” To comply with this, the NH Electric Utilities budgeted for an 8% shareholder incentive as follows:

$$\text{INCENTIVE} = 8\% \times [\text{BUDGET}_{\text{TOT}} - \text{INCENTIVE}]$$

Where:

INCENTIVE - Shareholder incentive in dollars

BUDGET_{TOT} – Total dollars budgeted

Solving this equation for the shareholder incentive:

$$\text{INCENTIVE} = 0.074074 \times \text{BUDGET}_{\text{TOT}}$$

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. PSNH and NHEC have included the Smart Start incentive set aside in their program budgets.

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.

²⁷ 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. Customers eligibility is verified.
 - 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 utility 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 shell jobs to CAA. Alternatively, utility may request CAAs to develop leads and initiate shell jobs²⁸ based on the Wxn waiting list. CAAs initiate baseload jobs²⁹ 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 a Work Order for all customers who will receive CORE program services and who pass the prescreen regardless of how they were brought into the program (EAP, 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 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 shell jobs that include weatherization services, conduct audit to quantify potential energy savings.
- b) For baseload jobs conduct Baseload Audit which will identify measures such as refrigerator replacement, CFLs, etc. The audit software creates a list of cost effective measures to install.
- c) Audits will also identify any health and safety education and/or measures that need to be addressed.

²⁸ 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).

²⁹ 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).

- 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.
- 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 and/or 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 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
- d) Obtain customer 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.

5. Quality Assurance

This step provides overall assurance that services are delivered in compliance with all program requirements.

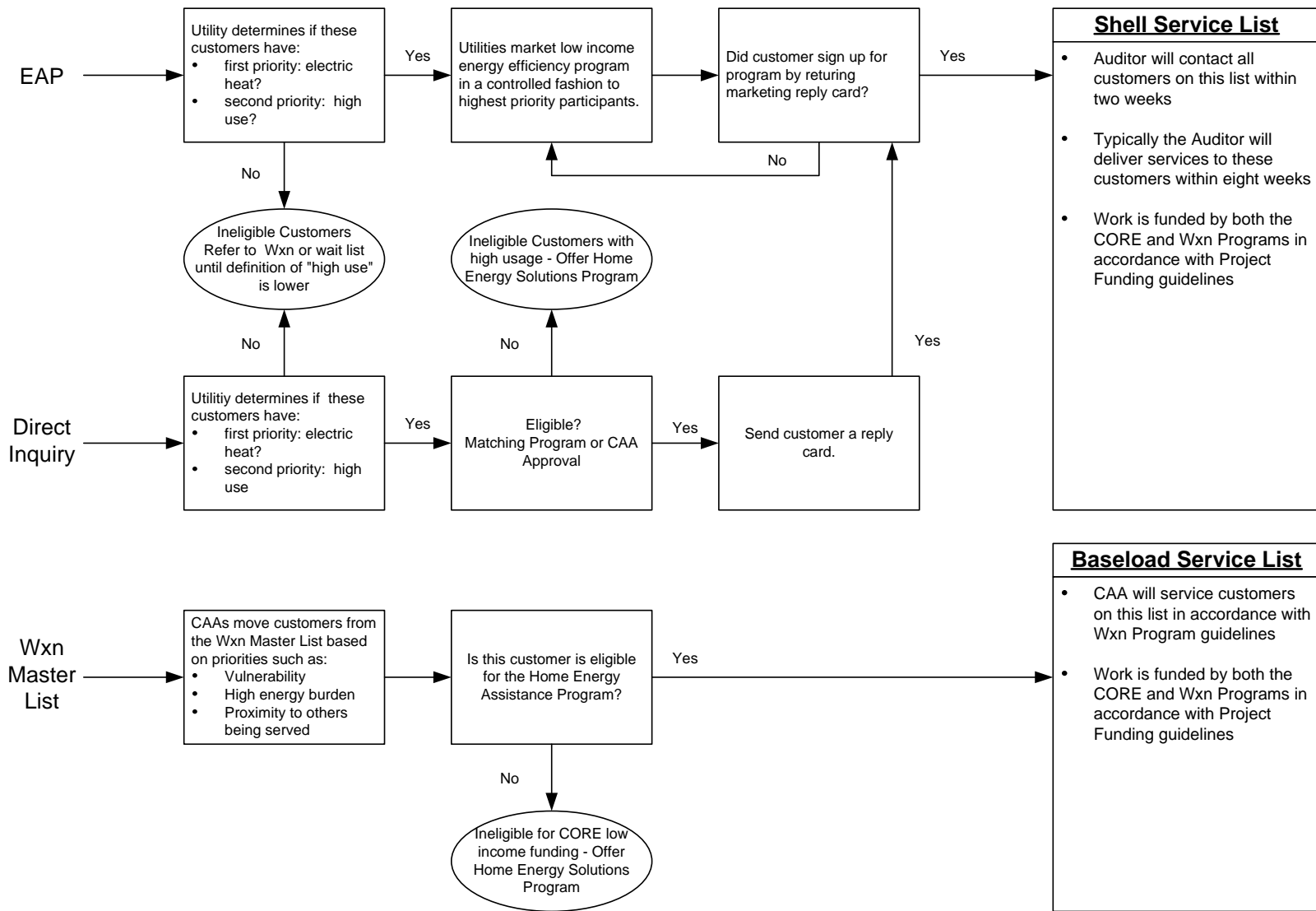
- a) To ensure compliance with federal auditing requirements, OEP personnel will inspect a sampling of all jobs receiving Wxn funding. The utilities will coordinate their QA activity with OEP to avoid duplicate inspections of the same premise.
- b) QA will typically be conducted on a minimum of 10% of all jobs – more as deemed necessary.

6. Job Closeout

This step includes follow-up on any customer concerns, invoicing, and payment.

- a) Follow-up on any call back or QA concerns.
- 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 \$4,000 for the CORE low income program and \$2,500 for Wxn.

Measure Description	Funding Source	
	Shell	Baseload
Health & Safety	DOE ³⁰	DOE
Repair/Replace Non-electric Heating System ³¹	DOE	DOE
Refrigerator	CORE	CORE
Lighting	CORE	CORE
Weatherization Services	CORE	DOE
Repair/Replace Electric Heating System ³² & Controls	CORE	CORE
<i>Additional Measures As They Are Defined</i>	<i>To Be Determined</i>	<i>To Be Determined</i>

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. This training component will cover delivery of all elements in the Customer Education Specifics Chart.
- 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.

³⁰ In the event the work is assigned to a non-CAA contractor, CORE funds may be used for Health & Safety measures.

³¹ Applies to qualifying systems fired by oil, propane, and solid fuels.

³² 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 inquiries 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

2008 HEA Quarterly Production Schedule

Utility	Total Jobs	1st. Qtr.	2nd. Qtr.	3rd. Qtr.	4th. Qtr.
		21%	32%	29%	17%
Unitil	76	11	41	16	8
NGRID	48	11	16	14	7
NHEC	75	19	26	21	9
PSNH	756	162	226	228	140
TOTAL	955	203	309	279	164
Year-to-date TOTAL		203	512	791	955

2008 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					7	4	55	10	62	14	76
Carroll					8	4	71	8	79	12	91
Cheshire			8	2			42	11	50	13	63
Coos					3	1	79	8	82	9	91
Grafton			10	2	18	6	23	8	51	16	67
Hillsborough			7	1			155	91	162	92	254
Merrimack	20	6			4	2	60	10	84	18	102
Rockingham	46	4	7	2	6	2	26	16	85	24	109
Strafford					1	0	46	5	47	5	52
Sullivan			7	2	6	3	24	8	37	13	50
Program Totals	66	10	39	9	53	22	581	175	739	216	
Grand Totals	76		48		75		756		955		955

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

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

Note: monthly numbers are benchmarks and not meant to be used to evaluate production on a monthly basis.

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 Analytics, *Sample Design for the 1999 Custom Evaluation Studies Final Report*, February 16, 2000.
6. RLW Analytics, *Impact Evaluation analysis of the 1999 Custom Program Final Report*, June 28, 2000.
7. SBW Consulting, Inc., *Impact Evaluation 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 Analytics, *Commercial & Industrial O&M Market Segment Baseline Study Final Report*, July 1999.
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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.
42. Energy & Resource Solutions (ERS), *Final Report prepared for the New Hampshire Commercial & Industrial New Construction Program Baseline Evaluation for the NH Monitoring and Evaluation Team*, June 2003.
43. Nexus Market Research, Inc., Dorothy Conant, Shel Felman Management Consulting, GDS Associates, Inc., Megdal & Associates, *Evaluation of the New Hampshire ENERGY STAR® Homes Program Volume 1 Findings and Analysis*, March 2003.
44. RLW Analytics, *Sample Design for the 2003 Custom Evaluation Studies*, February 20, 2004.
45. Select Energy Services, Inc., *Evaluation of 2002 Custom Process Installations – 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.
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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.
56. Megdal & Associates with Opinion Dynamics Corporation, *2004 Commercial and Industrial Programs Free-Ridership and Spillover Study Executive Summary of National Grid Results Final Report*, October 21, 2005.
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.
60. DMI, *Evaluation of 2003 Custom Process Installations Part II*, October 3, 2005.
61. DMI, *Evaluation of 2003 Custom HVAC Installations Part I*, October 12, 2005.
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.
68. Demand Management Institute, *Impact Evaluation of 2004 Compressed Air Prescriptive Rebates*, May 15, 2006.
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.
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86. Nexus Market Research, Inc., *Report on the Web TV Survey for the New Hampshire ENERGY STAR Appliances Program*, January 26, 2005.
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88. Summit Blue Consulting, LLC, *Statewide Impact Evaluation of the 2003 Residential Retrofit Program (Home Energy Solutions Program)*, February 3, 2005.
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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.
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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.

100. ICF Consulting, *PSNH Avoided Transmission & Distribution Costs*, September 2007.
101. RLW Analytics, Inc., *National Grid Lighting Controls Impact Evaluation, Final Report, 2005 Energy Initiative, Design 2000plus and Small Business Services Programs*, June 4, 2007.
102. RLW Analytics, Inc., *Sample Design and Impact Evaluation of the 2006 Custom Program*, July 20, 2007.
103. Demand Management Institute, *Impact Evaluation of 2005 Custom Process Installations – Part I*, June 5, 2007.
104. UTS Energy Engineering, LLC, *Impact Evaluation of 2005 Custom Process Installations – Part II*, June 19, 2007.
105. GDS Associates, Inc., *Impact Evaluation of 2005 Custom Process Installations – Part III*, July 11, 2007.
106. RLW Analytics, Inc., *Impact Evaluation Study of 2006 Custom Lighting Installations*, July 5, 2007.
107. RLW Analytics, Inc., *Small Business Services Custom Measure Impact Evaluation*, March 23, 2007.
108. RLW Analytics, Inc., *Impact Evaluation Analysis of the 2005 Custom SBS Program*, May 29, 2007.

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 2007 *Avoided-Energy-Supply Costs in New England* (“2007 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 8.25% and a general inflation rate of 2.7%. The use of the 15% adder to represent 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, was discontinued because the 2007 AESC avoided costs include market-based price proxies for power plant emissions of NO_x, SO₂, Mercury and CO₂.

The 2007 AESC avoided costs also include a 10% 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 2007 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 10% 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 2006 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 2007 forecast of energy prices.

Marginal T&D Costs and Line Loss Factors (\$2006)								
	<u>MDC (\$/kW-yr)</u>		<u>MTC (\$/kW-yr)</u>	Line Loss Multipliers				
	<u>Res.(1)</u>	<u>C&I(2)</u>		<u>Transmission Capacity</u>	<u>Summer Capacity</u>	<u>Winter Capacity</u>	<u>On-Peak Energy</u>	<u>Off-Peak Energy</u>
	Granite State	\$90.87	\$90.87	\$35.41	1.1220	1.1500	1.1350	1.0630
PSNH	\$26.00	\$26.00	\$1.60	1.0000	1.0820	1.0820	1.0820	1.0840
Unitil	\$67.95	\$67.95	\$27.23	1.0000	1.1217	1.1217	1.1217	1.0152
NHEC	\$96.26	\$96.26	\$42.27	1.0000	1.0917	1.0917	1.0917	1.0917
MWh Sales to Ultimate Customers in 2006								
Granite State	749,209	6.96%						
PSNH	8,029,904	74.64%						
Unitil	1,243,447	11.56%						
NHEC	<u>735,926</u>	<u>6.84%</u>						
Total	10,758,486	100.00%						
Weighted Average Marginal T&D Costs and Line Loss Factors (2008 Energy Line Loss Multipliers have been reduced by estimated transmission losses.)								
	<u>MDC (\$/kW-yr)</u>		<u>MTC (\$/kW-yr)</u>	Line Loss Multipliers				
	<u>Res.(1)</u>	<u>C&I(2)</u>		<u>Transmission Capacity</u>	<u>Summer Capacity</u>	<u>Winter Capacity</u>	<u>On-Peak Energy</u>	<u>Off-Peak Energy</u>
	2006\$	\$40.17	\$40.17	\$9.70	1.008	1.092	1.091	1.086
2008\$	\$42.37	\$42.37	\$10.23	1.008	1.056	1.055	1.039	1.030

ATTACHMENT D: NATIONAL GRID PROGRAM COST-EFFECTIVENESS

National Grid Program Cost-Effectiveness

2008 TRC BENEFIT COST TEST

National Grid

Summary of Benefit, Expenses, Evaluation Costs (2008\$s)

Sector	Program Name	TRC Benefit/ Cost	Total Benefits (\$000)	Total Costs (\$000)	Program Implementation Expenses ¹ (\$000)	Customer Contribution ² (\$000)	Evaluation Cost (\$000)	Shareholder Incentive (\$000)
Commercial & Industrial	New Construction	3.51	\$1,882.9	\$537.1	\$389.6	\$128.0	\$19.5	NA
	Large Business Energy Solutions	1.97	1345.90	684.55	331.32	336.65	16.57	NA
	Small Business Energy Solutions	2.14	927.11	432.57	305.35	106.95	20.27	NA
Commercial & Industrial Total		2.38	\$4,155.9	\$1,748.8	\$1,026.3	\$571.6	\$56.3	\$94.6
Residential	ENERGY STAR Homes	1.47	\$386.8	\$263.3	\$250.8	\$0.0	\$12.5	NA
	Home Energy Solutions	1.86	91.88	49.29	41.23	6.00	2.06	NA
	ENERGY STAR Lighting	3.29	231.05	70.30	47.33	20.60	2.37	NA
	ENERGY STAR Appliances	1.41	209.83	148.77	58.83	87.00	2.94	NA
	Home Energy Assistance	1.60	278.35	173.68	165.44	0.00	8.24	NA
Residential Total		1.59	\$1,197.9	\$752.7	\$563.6	\$113.6	\$28.2	\$47.3
Grand Total		2.14	\$5,353.8	\$2,501.5	\$1,589.9	\$685.2	\$84.5	\$141.9

Notes:

- 1) The Small Business Energy Solutions Implementation expenses are net of the projected customer co-pay for 2008 installations (\$99,758), which appears in the Customer Contribution
- 2) Includes co-pays by direct participants and spillover.

National Grid Program Cost-Effectiveness

2008 TRC BENEFIT COST TEST

National Grid

Summary of Expenses, Benefit, kW, and kWh by Program (2008\$)

Sector	Program Name	Total Benefits (\$000)	Benefits (000's)										Load Reduction in kW				MWh Saved	
			Capacity				Energy				Non Electric Resource	Maximum Annual	Summer	Winter	Lifetime	Maximum Annual	Lifetime	
			Generation		Trans	MDC	Winter		Summer									
			Summer	Winter			Peak	Off Peak	Peak	Off Peak								
Commercial & Industrial	New Construction	\$1,883	\$353	\$0	\$35	\$142	\$588	\$312	\$302	\$151	\$0	388	313	222	4,881	1,529	23,050	
	Large Business Energy Solutions	\$1,346	\$178	\$0	\$18	\$74	\$433	\$284	\$221	\$137	\$0	178	178	130	2,409	1,306	17,929	
	Small Business Energy Solutions	\$927	\$186	\$0	\$19	\$80	\$369	\$57	\$188	\$28	\$0	209	209	107	2,503	784	9,606	
Commercial & Industrial Total		\$4,156	\$718	\$0	\$72	\$296	\$1,389	\$654	\$711	\$315	\$0	775	700	459	9,792	3,619	50,585	
Residential	ENERGY STAR Homes	\$387	\$2	\$0	\$0	\$1	\$6	\$7	\$3	\$3	\$366	21	2	7	23	32	291	
	Home Energy Solutions	\$92	\$9	\$0	\$1	\$4	\$25	\$27	\$12	\$13	\$1	35	10	35	118	112	1,324	
	ENERGY STAR Lighting	\$231	\$13	\$0	\$2	\$7	\$65	\$75	\$35	\$35	\$0	337	26	96	201	419	3,290	
	ENERGY STAR Appliances	\$210	\$26	\$0	\$3	\$11	\$25	\$28	\$17	\$14	\$86	29	27	16	348	106	1,468	
	Home Energy Assistance	\$278	\$11	\$0	\$1	\$4	\$20	\$23	\$11	\$11	\$196	23	10	23	148	80	1,213	
Residential Total		\$1,198	\$59	\$0	\$6	\$26	\$141	\$161	\$78	\$76	\$649	445	74	177	838	748	7,587	
Grand Total		\$5,354	\$777	\$0	\$78	\$322	\$1,531	\$814	\$790	\$392	\$649	1,220	774	636	10,630	4,367	58,172	

National Grid Shareholder Incentive Calculation

**National Grid
Target Shareholder Incentive - 2008**

Commercial/Industrial Incentive

1. Target Benefit/Cost Ratio	2.51
2. Threshold Benefit/Cost Ratio	1.00
3. Target lifetime MWh	50,585
4. Threshold MWh	32,880
5. Budget	\$1,182,346
6. CE Percentage	4.00%
7. Lifetime kWh Percentage	4.00%
8. Target C/I Incentive	\$94,588
9. Cap	\$141,882

Residential Incentive

10. Target Benefit/Cost Ratio	1.70
11. Threshold Benefit/Cost Ratio	1.00
12. Target lifetime MWh	7,587
13. Threshold MWh	4,931
14. Budget	\$591,774
15. CE Percentage	4.00%
16. Lifetime kWh Percentage	4.00%
17. Target Residential Incentive	\$47,342
18. Cap	\$71,013
19. TOTAL TARGET INCENTIVE	\$141,930

Line No. Notes:

- 1, 5, 10, and 14. See Attachment D, page 4 of 5.
- 2, 6, 7, 11, 15, and 16. Report to the New Hampshire Public Utilities Commission on Ratepayer-Funded Energy Efficiency Issues in New Hampshire, Docket No. DR 96-150, page 21.
- 3, 12. See Attachment D, page 5 of 5.
- 4. 65% of line 3.
- 8. 8% of line 5.
- 9. 12% of line 5.
- 13. 65% of line 12.
- 17. 8% of line 14.
- 18. 12% of line 14.
- 19. Line 8 plus line 17.

National Grid Planned Benefit/Cost Ratio by Sector

Target Benefit-Cost Ratio by Sector National Grid - 2008

	<u>Planned</u>
Commercial & Industrial:	
1. Benefits (Value) From Eligible Programs	\$4,155,872
2. Implementation Expenses	\$1,026,261
3. Customer Contribution	\$571,616
4. Evaluation Expense	\$56,327
5. Total Costs Excluding Shareholder Incentive	\$1,654,204
6. Benefit/Cost Ratio - C&I Sector	2.51
7. Implementation Plus Evaluation Expense - C&I Sector	\$1,082,588
Residential:	
8. Benefits (Value) From Eligible Programs	\$1,197,889
9. Implementation Expenses	\$563,619
10. Customer Contribution	\$113,603
11. Evaluation Expense	\$28,155
12. Total Costs Excluding Shareholder Incentive	\$705,377
13. Benefit/Cost Ratio - Residential Sector	1.70
14. Implementation Plus Evaluation Expense - Residential Sector	\$591,774

Line No. Notes:

- 1 - 4 and 8-11. See Attachment D, page 1 of 5.
- 5. Sum of lines 2-4.
- 6. Line 1 divided by line 5. The shareholder incentive mechanism described by the New Hampshire Energy Efficiency Working Group and approved by the Commission in Order No. 23,574 includes a circular calculation. A portion of the earned shareholder incentive is related to the benefit/cost ratio. However, the shareholder incentive is supposed to be included as a DSM cost in determining the benefit/cost ratio. For the purpose of calculating the shareholder incentive, the Company has recalculated the planned benefit/cost ratio excluding the shareholder incentive and will compare the actual benefit/cost ratio excluding the shareholder incentive to the planned benefit/cost ratio excluding shareholder incentives when determining the earned incentive.
- 7. Sum of lines 2 and 4. These are the C&I sector funds on which the Company may calculate its earned shareholder incentive.
- 12. Sum of lines 9 - 11.
- 13. Line 8 divided by line 12. The shareholder incentive mechanism described by the New Hampshire Energy Efficiency Working Group and approved by the Commission in Order No. 23,574 includes a circular calculation. A portion of the earned shareholder incentive is related to the benefit/cost ratio. However, the shareholder incentive is supposed to be included as a DSM cost in determining the benefit/cost ratio. For the purpose of calculating the shareholder incentive, the Company has recalculated the planned benefit/cost ratio excluding the shareholder incentive and will compare the actual benefit/cost ratio excluding the shareholder incentive to the planned benefit/cost ratio excluding shareholder incentives when determining the earned shareholder incentive.
- 14. Sum of lines 9 and 11. These are the Residential sector funds on which the Company may calculate its earned shareholder incentive.

National Grid Planned Lifetime kWh Savings by Sector

**Target Lifetime Energy Savings by Program
 National Grid - 2008**

<u>Program</u>	<u>Lifetime Savings (MWh)</u>
Commercial & Industrial:	
1. New Construction (Lost Opportunity)	23,050
2. Large Business Energy Solutions	17,929
3. Small Business Energy Solutions	9,606
4. Total Commercial & Industrial Included for Incentive Calculation	50,585
Residential:	
5. Energy Star Homes	291
6. Home Energy Solutions	1,324
7. Energy Star Products	1,468
8. Home Energy Assistance	1,213
9. Energy Star Lighting	3,290
10. Total Residential Included for Incentive Calculation	7,587

Line No. Notes:

- 1-3 and 5-9. See Attachment D, page 2 of 5.
- 4. Sum of lines 1-3.
- 10. Sum of lines 5-10.

ATTACHMENT E: NHEC PROGRAM COST-EFFECTIVENESS

NHEC Program Cost-Effectiveness

NEW HAMPSHIRE ELECTRIC COOPERATIVE, INC.
 NHPUC Docket No. DE 07-106
 Attachment E (Revised 12-13-07)
 Page 1 of 4

Program Cost-Effectiveness - 2008

Present Value						
	Total Resource Benefit/Cost Ratio	Benefit (\$000)	Utility Costs (\$000)	Member Costs (\$000)	Lifetime MWh Savings	Number of Members Served
Residential Programs						
ENERGY STAR Homes	1.54	\$ 226.8	\$ 114.8	\$ 32.0	187.2	29
Home Energy Solutions	1.46	\$ 181.0	\$ 119.8	\$ 4.4	1,775.0	81
ENERGY STAR Lighting	2.73	\$ 337.6	\$ 90.5	\$ 33.2	4,083.6	14,094
ENERGY STAR Appliances	1.11	\$ 193.3	\$ 87.8	\$ 86.5	1,506.0	961
Home Energy Assistance	1.35	\$ 199.7	\$ 148.4	\$ -	1,215.0	75
High Efficiency Heat Pump	1.47	\$ 266.8	\$ 116.9	\$ 64.8	4,273.3	12
Load Management	0.00	\$ -	\$ 105.5	\$ -	-	-
Subtotal Residential		\$ 1,405.2	\$ 783.8	\$ 220.9	13,040.2	15,252
Commercial/Industrial Programs						
New Construction / Major Renovator	2.73	\$ 644.1	\$ 134.7	\$ 101.5	7,936.1	16
Large C&I Retrofit	2.39	\$ 909.2	\$ 132.3	\$ 247.7	11,111.9	13
Small C&I Retrofit	1.36	\$ 199.3	\$ 94.7	\$ 51.4	2,544.3	20
Other (Education)	0.00	\$ -	\$ 43.3	\$ -	-	-
Subtotal C&I		\$ 1,752.6	\$ 405.0	\$ 400.5	21,592.3	49
SmartStart		\$ -	\$ 20.5	\$ -	-	-
Subtotal PAYS		\$ -	\$ 20.5	\$ -	-	-
Total		\$ 3,157.8	\$ 1,209.3	\$ 621.4	34,632.4	15,301

Member Incentive Calculation
 2008

	<u>Planned</u>	<u>Actual</u>
Commercial/Industrial Incentive		
1. Benefit/Cost Ratio	2.18	0.00
2. Threshold Benefit / Cost Ratio ¹	1.00	
3. Lifetime kWh Savings	21,592,278	0
4. Threshold Lifetime kWh Savings (65%) ²	14,034,981	
5. Budget	\$ 421,424	\$ -
6. Benefit / Cost Percentage of Budget	4.00%	
7. Lifetime kWh Percentage of Budget	4.00%	
8. C/I Member Incentive	\$33,714	
9. Cap (12%)	\$50,571	
Residential Incentive		
10. Benefit / Cost Ratio	1.40	0.00
11. Threshold Benefit / Cost Ratio ¹	1.00	
12. Lifetime kWh Savings	13,040,150	0
13. Threshold Lifetime kWh Savings (65%) ²	8,476,098	
14. Budget	\$ 787,887	
15. Benefit / Cost Percentage of Budget	4.00%	
16. Lifetime kWh Percentage of Budget	4.00%	
17. Residential Incentive	\$63,031	
18. Cap (12%)	\$94,546	
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.

NHEC Planned Benefit/Cost Ratio by Sector

NEW HAMPSHIRE ELECTRIC COOPERATIVE, INC.

NHPUC Docket No. DE 07-106

Attachment E (Revised 12-13-07)

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Planned Versus Actual Benefit / Cost Ratio by Sector
2008

	<u>Planned</u>	<u>Actual</u>
Commercial & Industrial:		
1. Benefits (Value) From Eligible Programs	\$ 1,752,555	\$ -
2. Implementation Expenses	\$ 421,424	\$ -
3. Member Contribution	<u>\$ 384,117</u>	<u>\$ -</u>
4. Total Costs Excluding Member Incentive	\$ 805,541	\$ -
5. Benefit/Cost Ratio - C&I Sector	2.18	0.00
Residential:		
6. Benefits (Value) From Eligible Programs	\$ 1,405,225	\$ -
7. Implementation Expenses	\$ 787,887	\$ -
8. Member Contribution	<u>\$ 216,761</u>	<u>\$ -</u>
9. Total Costs Excluding Member Incentive	\$ 1,004,648	\$ -
10. Benefit/Cost Ratio - Residential Sector	1.40	0.00

NHEC Planned kWh Savings by Sector

NEW HAMPSHIRE ELECTRIC COOPERATIVE, INC.

NHPUC Docket No. DE 07-106

Attachment E (Revised 12-13-07)

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Actual Lifetime Energy Savings by Sector and Program
2008

	Lifetime kWh Savings	
	<u>Planned</u>	<u>Actual</u>
Commercial & Industrial:		
New Equipment & Construction	7,936,054	0
Large C&I Retrofit	11,111,906	0
Small Business Energy Solutions	2,544,318	0
Education	0	0
Other	<u>0</u>	<u>0</u>
Total Commercial & Industrial Included for Incentive Calculation	21,592,278	0
Residential:		
Home Energy Assistance Program	1,215,014	0
Home Energy Solutions Program	1,775,005	0
ENERGY STAR Homes Program	187,159	0
ENERGY STAR Appliance Program	1,506,044	0
ENERGY STAR Lighting Program	4,083,602	0
High Efficiency Heat Pump	4,273,326	0
Load Management	<u>0</u>	<u>0</u>
Total Residential Included for Incentive Calculation	13,040,150	0

ATTACHMENT F: PSNH PROGRAM COST-EFFECTIVENESS

PSNH Program Cost-Effectiveness

PUBLIC SERVICE COMPANY OF NEW HAMPSHIRE
 NHPUC Docket No. DE 07-106
 Attachment F (Revised 2-25-08)
 Page 1 of 4

Program Cost-Effectiveness - 2008 PLAN

	Total Resource Benefit/Cost Ratio	Present Value				
		Benefit (\$000)	Utility Costs (\$000)	Customer Costs (\$000)	Lifetime MWh Savings	Number of Customers Served
Residential Programs						
ENERGY STAR Homes	1.53	\$ 1,936.6	\$ 858.8	\$ 409.4	1,314.9	365
Home Energy Solutions	1.10	\$ 2,569.9	\$ 1,627.2	\$ 713.8	24,055.3	1,278
ENERGY STAR Lighting	3.50	\$ 5,233.0	\$ 1,039.6	\$ 456.2	72,965.1	242,772
ENERGY STAR Appliances	1.30	\$ 1,660.2	\$ 632.8	\$ 643.7	12,003.5	10,586
Home Energy Assistance	1.10	\$ 2,165.0	\$ 1,822.6	\$ 136.9	13,612.9	756
EnergyStar Homes (Geothermal)	1.18	\$ 664.5	\$ 316.4	\$ 245.1	15,282.1	34
Other Utility Specific Program	0.00	\$ -	\$ -	\$ -	-	-
Subtotal Residential	1.60	\$ 14,229.1	\$ 6,297.6	\$ 2,605.1	139,233.8	255,791
Commercial/Industrial Programs						
New Construction / Major Renovation	2.10	\$ 6,642.3	\$ 2,077.4	\$ 1,089.2	72,926.5	140
Large C&I Retrofit	2.54	\$ 14,129.8	\$ 2,448.4	\$ 3,106.1	167,755.6	144
Small C&I Retrofit	1.43	\$ 6,294.5	\$ 2,374.2	\$ 2,015.8	82,147.7	460
C&I RFP Pilot	3.01	\$ 2,802.7	\$ 519.4	\$ 411.5	27,376.6	3
Other (Education, Partnerships)	0.00	\$ -	\$ 157.7	\$ -	-	-
Smart Start		\$ -	\$ 50.0	\$ -	-	-
Subtotal C&I	2.10	29,869.3	\$ 7,627.0	6,622.6	350,206.5	747
Total		\$ 44,098.4	\$ 13,924.6	\$ 9,227.6	489,440.3	256,538

Shareholder Incentive Calculation

2008

	<u>Planned</u>	<u>Actual</u>
Commercial/Industrial Incentive		
1. Benefit/Cost Ratio	2.10	0.00
2. Threshold Benefit / Cost Ratio ¹	1.00	
3. Lifetime kWh Savings	350,206,469	0
4. Threshold Lifetime kWh Savings (65%) ²	227,634,205	
5. Budget	\$ 7,627,003	
6. Benefit / Cost Percentage of Budget	4.00%	
7. Lifetime kWh Percentage of Budget	4.00%	
8. C/I Shareholder Incentive	\$610,160	
9. Cap (12%)	\$915,240	
Residential Incentive		
10. Benefit / Cost Ratio	1.60	0.00
11. Threshold Benefit / Cost Ratio ¹	1.00	
12. Lifetime kWh Savings	139,233,825	0
13. Threshold Lifetime kWh Savings (65%) ²	90,501,986	
14. Budget	\$ 6,297,555	
15. Benefit / Cost Percentage of Budget	4.00%	
16. Lifetime kWh Percentage of Budget	4.00%	
17. Residential Incentive	\$503,804	
18. Cap (12%)	\$755,707	
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
 2008

	<u>Planned</u>	<u>Actual</u>
Commercial & Industrial:		
1. Benefits (Value) From Eligible Programs	\$ 29,869,274	
2. Implementation Expenses	\$ 7,627,003	
3. Customer Contribution	<u>\$ 6,622,568</u>	
4. Total Costs Excluding Shareholder Incentive	\$ 14,249,571	
5. Benefit/Cost Ratio - C&I Sector	2.10	0.00
Residential:		
6. Benefits (Value) From Eligible Programs	\$ 14,229,123	
7. Implementation Expenses	\$ 6,297,555	
8. Customer Contribution	<u>\$ 2,605,078</u>	
9. Total Costs Excluding Shareholder Incentive	\$ 8,902,633	
10. Benefit/Cost Ratio - Residential Sector	1.60	0.00

PSNH Planned kWh Savings by Sector

PUBLIC SERVICE COMPANY OF NEW HAMPSHIRE

NHPUC Docket No. DE 07-106

Attachment F (Revised 2-25-08)

Page 4 of 4

Actual Lifetime Energy Savings by Sector and Program
2008

	Lifetime kWh Savings	
	<u>Planned</u>	<u>Actual</u>
Commercial & Industrial:		
New Equipment & Construction	72,926,467	
Large C&I Retrofit	167,755,620	
Small Business Energy Solutions	82,147,746	
Education	0	
Utility Specific (Energy Rewards RFP Program)	27,376,636	
Other	<u>0</u>	
Total Commercial & Industrial Included for Incentive Calculation	350,206,469	0
Residential:		
Home Energy Assistance Program	13,612,881	
Home Energy Solutions Program	24,055,277	
ENERGY STAR Homes Program	1,314,857	
ENERGY STAR Appliance Program	12,003,536	
ENERGY STAR Lighting Program	72,965,127	
Electro-Thermal Storage Units	0	
Utility Specific: ENERGY STAR Homes - Geothermal)	<u>15,282,147</u>	
Total Residential Included for Incentive Calculation	139,233,825	0

ATTACHMENT G: UES PROGRAM COST-EFFECTIVENESS

UES Program Cost-Effectiveness

Unitil Energy System, Inc.
 N.H.P.U.C. Docket No. DE 07-106
 Attachment G
 Page 1 of 4

**Unitil Energy System, Inc.
 Energy Efficiency Program Cost-Effectiveness - 2008**

	Total Resource Benefit/Cost Ratio	Net Present Value			Lifetime MWh Savings	Number of Cust. Served
		Benefit (\$000)	Utility Costs ⁽¹⁾ (\$000)	Customer Costs (\$000)		
Res Non-Low Income Programs						
ENERGY STAR Homes	1.1	338.2	240.2	63.8	893	71
Home Energy Solutions Program	0.5	98.4	180.6	2.7	1,175	82
ENERGY STAR Lighting Program ⁽²⁾	3.6	989.4	188.8	86.7	14,309	54,939 ⁽²⁾
ENERGY STAR Appliances ⁽²⁾	1.1	245.3	118.6	113.7	1,689	1,083 ⁽²⁾
Res. EE Website / Energy Suite	-	n/a	24.0	n/a	n/a	n/a
A05b Res / K-12 Education	-	n/a	5.0	n/a	n/a	n/a
A06a ISO-Related Expenses Res Non-LI	-	n/a	6.5	n/a	n/a	n/a
Subtotal Residential	1.6	\$ 1,671.3	\$ 763.64	\$ 267.0	18,066	
Residential Low Income Program						
Home Energy Assistance Program	1.0	328.6	320.0	-	10,440 ⁽³⁾	76
B06a ISO-Related Expenses Res LI	-	n/a	0.6	n/a	n/a	n/a
Subtotal Residential LI	1.0	\$ 328.6	\$ 320.59	\$ -	10,440	76
Commercial/Industrial Programs						
New Constr. / Major Renovation	3.1	585.9	163.1	26.1	4,892	6
Large C&I Retrofit	2.0	1,268.6	332.3	315.5	15,915	15
Small C&I Retrofit	2.1	986.2	326.1	151.8	11,598	86
C&I EE Website / Energy Suite	-	n/a	15.0	n/a	n/a	n/a
C&I Education	-	n/a	10.0	n/a	n/a	n/a
C06a ISO-Related Expenses C&I	-	n/a	35.0	n/a	n/a	n/a
Subtotal C&I	2.1	\$ 2,840.7	\$ 881.47	\$ 493.4	32,405	
Total	1.8	\$ 4,840.6	\$ 1,965.7	\$ 760.4	60,911	

(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 a fuel-blind program. 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.

**Unitil Energy System, Inc.
 Shareholder Incentive Calculation - 2008**

	<u>Planned</u>
Commercial/Industrial Incentive	
1. Benefit/Cost Ratio	2.07
2. Threshold Benefit / Cost Ratio	1.00 ⁽¹⁾
3. Lifetime kWh Savings	32,404,835
4. Threshold Lifetime kWh Savings (65%)	21,063,143 ⁽²⁾
5. Program Budgets	\$ 816,171
6. Benefit / Cost Percentage of Budget	4.00%
7. Lifetime kWh Percentage of Budget	4.00%
8. C/I Shareholder Incentive	\$65,294
9. Cap (12%)	\$97,941
Residential Incentive (including low-income)	
10. Benefit / Cost Ratio	1.48
11. Threshold Benefit / Cost Ratio	1.00 ⁽¹⁾
12. Lifetime kWh Savings	28,506,654 ⁽³⁾
13. Threshold Lifetime kWh Savings (65%)	18,529,325 ⁽²⁾
14. Program Budget	\$ 1,003,919
15. Benefit / Cost Percentage of Budget	4.00%
16. Lifetime kWh Percentage of Budget	4.00%
17. Residential Incentive	\$80,313
18. Cap (12%)	\$120,470
19. TOTAL INCENTIVE	\$ 145,607

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.
 3. Includes non-electric savings associated with fuel-blind services.
- See Attachment G, Page 4 of 4.

UES Planned Benefit/Cost Ratio by Sector

Unitil Energy System, Inc.
 N.H.P.U.C. Docket No. DE 07-106
 Attachment G
 Page 3 of 4

**Unitil Energy System, Inc.
 Planned Benefit / Cost Ratio by Sector - 2008**

	<u>Planned</u>
Commercial & Industrial:	
1. Benefits (Value) From Eligible Programs	\$ 2,840,712
2. Program Budgets - Excludes SHI	\$ 816,171
3. Customer Contribution	<u>\$ 493,421</u>
4. Total Costs Excluding Shareholder Incentive	\$ 1,309,592
5. Benefit/Cost Ratio - C&I Sector	2.07
Residential:	
6. Benefits (Value) From Eligible Programs	\$ 1,999,892
7. Program Budgets - Excludes SHI	\$ 1,003,919
8. Customer Contribution	<u>\$ 266,967</u>
9. Total Costs Excluding Shareholder Incentive	\$ 1,270,887
10. Benefit/Cost Ratio - Residential Sector	1.48

**Unitil Energy System, Inc.
 Lifetime Energy Savings by Sector and Program - 2008**

	<u>Lifetime kWh Savings</u>
Commercial & Industrial:	
Large C&I New Equipment & Construction	4,891,688
Large C&I Retrofit	15,915,355
Small Business Energy Solutions	11,597,792
Utility Specific Programs - C&I Web / Energy Suite	___n/a
Total Commercial & Industrial Included for Incentive Calculation	32,404,835
Residential:	
Home Energy Assistance Program ⁽¹⁾	10,440,401
Home Energy Solutions Program	1,174,862
ENERGY STAR Homes Program	893,342
ENERGY STAR Appliance Program	1,689,301
ENERGY STAR Lighting Program	14,308,748
Utility Specific Programs - Res. EE Web / Energy Suite	___n/a
Total Residential Included for Incentive Calculation	28,506,654

(3) The Home Energy Assistance (HEA) program is offered as a fuel-blind program. Estimated lifetime non-electric savings have been converted into kWh as follows to establish UES' HEA program savings goal:
 [Lifetime MMBtu ÷ 3,413] * 1,000 = Lifetime MWh.

ATTACHMENT H
Proposed Budgets by Activity

NEW HAMPSHIRE CORE ENERGY EFFICIENCY PROGRAMS
 NHPUC Docket No. DE 07-106
 Attachment H
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NH CORE Energy Efficiency Program - 2008 Budget Details

(see Note 1)

	Internal Adm	External Adm	Cust Rebts/Services	Internal Impl.	Marketing	Evaluation	Total
ENERGY STAR Homes	\$ 44,069	\$ 17,969	\$ 1,126,949	\$ 172,173	\$ 23,719	\$ 73,631	\$ 1,458,510
National Grid	6,274	17,000	218,903	7,317	1,300	12,543	263,337
NHEC	5,480	833	51,359	46,291	3,326	7,558	114,847
PSNH	18,727	-	711,757	80,400	5,000	42,941	858,826
Unitil	13,587	136	144,930	38,165	14,093	10,589	221,500
Home Energy Solutions	\$ 58,368	\$ 50,244	\$ 1,452,748	\$ 258,996	\$ 31,388	\$ 105,049	\$ 1,956,794
National Grid	949	8,500	26,919	2,759	2,100	2,063	43,290
NHEC	5,480	833	56,267	46,291	3,326	7,558	119,755
PSNH	35,483	40,000	1,296,403	164,000	10,000	81,362	1,627,249
Unitil	16,456	911	73,159	45,946	15,962	14,066	166,500
Energy Star Appliances	\$ 28,799	\$ 18,813	\$ 635,825	\$ 108,569	\$ 48,906	\$ 50,991	\$ 891,903
National Grid	1,330	17,000	32,900	3,798	3,800	2,942	61,770
NHEC	5,480	833	41,322	27,618	5,000	7,558	87,811
PSNH	13,799	-	508,379	54,000	25,000	31,641	632,819
Unitil	8,190	980	53,224	23,153	15,106	8,850	109,503
Home Energy Assistance	\$ 68,922	\$ 48,748	\$ 1,878,289	\$ 288,022	\$ 41,565	\$ 115,464	\$ 2,441,012
National Grid	4,024	7,000	144,325	9,088	1,000	8,238	173,675
NHEC	5,480	833	92,902	38,322	3,326	7,558	148,421
PSNH	36,109	40,000	1,471,046	176,000	16,667	82,798	1,822,620
Unitil	23,309	915	170,016	64,612	20,572	16,870	296,296
ENERGY STAR Lighting	\$ 42,425	\$ 20,974	\$ 1,003,667	\$ 155,043	\$ 62,033	\$ 69,764	\$ 1,353,907
National Grid	917	19,000	14,850	4,066	8,500	2,369	49,702
NHEC	5,480	833	41,014	27,618	8,000	7,558	90,503
PSNH	22,670	-	871,824	85,750	7,405	51,982	1,039,631
Unitil	13,358	1,141	75,979	37,609	38,128	7,855	174,071
Other Residential Programs	\$ 19,781	\$ 4,388	\$ 341,216	\$ 183,680	\$ 9,126	\$ 15,820	\$ 574,011
National Grid	-	-	-	-	-	-	-
NHEC	12,056	1,833	74,956	134,380	3,326	-	226,551
PSNH	6,900	-	243,265	44,625	5,800	15,820	316,410
Unitil (Res. Website, ISO Expenses)	825	2,555	22,995	4,675	-	-	31,050
Total Residential Programs	\$ 262,364	\$ 161,136	\$ 6,438,695	\$ 1,166,483	\$ 216,738	\$ 430,720	\$ 8,676,136
New Equipment & Construction	\$ 71,723	\$ 67,133	\$ 2,135,606	\$ 324,277	\$ 27,594	\$ 144,819	\$ 2,771,151
National Grid	7,844	66,300	275,000	32,941	7,500	19,488	409,073
NHEC	5,480	833	87,786	29,696	3,326	7,558	134,679
PSNH	46,567	-	1,691,654	229,400	3,000	106,778	2,077,399
Unitil	11,832	-	81,166	32,240	13,768	10,995	150,000
Large C&I Retrofit	\$ 91,256	\$ 64,833	\$ 2,409,328	\$ 467,483	\$ 29,218	\$ 172,642	\$ 3,234,760
National Grid	6,593	64,000	225,000	31,730	4,000	16,574	347,897
NHEC	5,480	833	85,435	29,696	3,326	7,558	132,328
PSNH	54,883	-	1,923,035	341,600	3,000	125,846	2,448,364
Unitil	24,300	-	175,858	64,457	18,892	22,664	306,171
Small Business Energy Solutions	\$ 86,494	\$ 34,457	\$ 2,381,196	\$ 475,485	\$ 52,679	\$ 163,984	\$ 3,194,294
National Grid	5,025	11,700	378,600	7,587	2,200	20,265	425,376
NHEC	5,480	833	47,854	29,696	3,326	7,558	94,747
PSNH	53,220	20,000	1,777,149	373,770	28,000	122,032	2,374,171
Unitil	22,769	1,924	177,593	64,433	19,153	14,129	300,000
Other C&I Programs	\$ 24,506	\$ 6,000	\$ 663,695	\$ 127,847	\$ 3,000	\$ 26,695	\$ 851,743
National Grid	-	-	-	-	-	-	-
NHEC	9,864	1,500	25,798	22,511	-	-	59,673
PSNH (Education, RFP, Smart Start)	11,642	-	597,397	88,336	3,000	26,695	727,070
Unitil (Education, C&I Web, ISO Expenses)	3,000	4,500	40,500	17,000	-	-	65,000
Total Non-Residential Programs	\$ 273,978	\$ 172,423	\$ 7,589,825	\$ 1,395,093	\$ 112,491	\$ 508,140	\$ 10,051,949
TOTAL (Both Sectors)	\$ 536,343	\$ 333,558	\$ 14,028,519	\$ 2,561,576	\$ 329,229	\$ 938,860	\$ 18,728,085

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 - 2008

PROGRAMS	National Grid	NHEC	PSNH	UNITIL	TOTALS					
Energy Star Homes										
Number of Homes / Lifetime kWh Savings	89	290,757	29	187,159	365	1,314,857	71	893,342	554	2,686,115
B/C Ratio / Planned Budget	1.47	\$263,337	1.54	\$114,847	1.53	\$858,826	1.10	\$221,500		\$1,458,510
Home Energy Solutions										
Number of Units / Lifetime kWh Savings	87	1,324,409	81	1,775,005	1,278	24,055,277	82	1,174,862	1,528	28,329,553
B/C Ratio / Planned Budget	1.86	\$43,290	1.46	\$119,755	1.10	\$1,627,249	0.50	\$166,500		\$1,956,794
Energy Star Appliances										
Number of Rebates / Lifetime kWh Savings	710	1,468,274	961	1,506,044	10,586	12,003,536	1,083	1,689,301	13,340	16,667,155
B/C Ratio / Planned Budget	1.41	\$61,770	1.11	\$87,811	1.30	\$632,819	1.10	\$109,503		\$891,903
Home Energy Assistance (see Note 1)										
Number of Units / Lifetime kWh Savings	48	1,213,394	75	1,215,014	756	13,612,881	76	10,440,401	955	26,481,690
B/C Ratio / Planned Budget	1.60	\$173,675	1.35	\$148,421	1.10	\$1,822,620	1.00	\$296,296		\$2,441,012
Energy Star Lighting										
Number of Rebates / Lifetime kWh Savings	8,920	3,289,707	14,094	4,083,602	242,772	72,965,127	54,939	14,308,748	320,725	94,647,184
B/C Ratio / Planned Budget	3.29	\$49,702	2.73	\$90,503	3.50	\$1,039,631	3.60	\$174,071		\$1,353,907
C&I New Equipment & Construction (see note 2)										
Number of Participants / Lifetime kWh Savings	34	23,049,600	16	7,936,054	140	72,926,467	6	4,891,687	196	108,803,808
B/C Ratio / Planned Budget	3.51	\$409,073	2.73	\$134,679	2.10	\$2,077,399	3.10	\$150,000		\$2,771,151
Large C&I Retrofit (see note 2)										
Number of Participants / Lifetime kWh Savings	23	17,929,408	13	11,111,906	144	167,755,620	15	15,915,355	195	212,712,289
B/C Ratio / Planned Budget	1.97	\$347,897	2.39	\$132,328	2.54	\$2,448,364	2.00	\$306,171		\$3,234,760
Small Business Energy Solutions										
Number of Participants / Lifetime kWh Savings	72	9,606,055	20	2,544,318	460	82,147,746	60	11,597,792	612	105,895,911
B/C Ratio / Planned Budget	2.14	\$425,376	1.36	\$94,747	1.43	\$2,374,171	2.10	\$300,000		\$3,194,294
Educational Programs (see Note 3)										
B/C Ratio / Planned Budget		\$8,608		\$43,263		\$127,720		\$15,000		\$185,983
Company Specific Programs										
Number of Participants / Lifetime kWh Savings			12	4,273,326	37	42,658,783				46,932,109
B/C Ratio / Planned Budget		\$0	1.47	\$222,451		\$865,760		\$81,050		\$1,169,261
Smart Start Program										
Number of Participants / Planned Budget		\$0		\$20,510		\$50,000		\$0		\$70,510
Utility Incentive										
B/C Ratio / Planned Budget		<u>\$141,930</u>		<u>\$96,745</u>		<u>\$1,113,964</u>		<u>\$145,607</u>		<u>\$1,498,246</u>
TOTAL PLANNED BUDGET		\$1,916,050		\$1,306,060		\$15,038,523		\$1,965,698		\$20,226,331

NOTES:

- (1) Unittl's HEA savings target equals 1,255,210 lifetime kWh + (22,117 lifetime MMBtu ÷ 0.003413) = 7,735,342 lifetime kWh
- (2) The NH utilities adopted the results of a C&I measure life study that was completed for MA in November 2005. The measure lives being used take into account both technical measure life and measure persistence.
- (3) National Grid's Educational Program budget is included within other program budgets and therefore is not included in the total to avoid double counting.

NH CORE Energy Efficiency Program Goals
 (January 1 - December 31, 2008)

NH CORE ENERGY EFFICIENCY PROGRAMS	EXPENSES (\$)	SAVINGS (Lifetime kWh)	NUMBER OF CUSTOMERS
RESIDENTIAL (nhsaves@home)			
ENERGY STAR Homes	\$1,458,510	2,686,115	554
Home Energy Solutions	\$1,956,794	28,329,553	1,528
Home Energy Assistance	\$2,441,012	26,481,691	955
ENERGY STAR Lighting ¹	\$1,353,907	94,647,184	320,725
ENERGY STAR Appliances	<u>\$891,903</u>	<u>16,667,155</u>	<u>13,340</u>
TOTAL RESIDENTIAL	\$8,102,126	168,811,698	337,102
COMMERCIAL & INDUSTRIAL (nhsaves@work)			
Educational Programs	\$185,983		
Small Business Energy Solutions	\$3,194,294	105,895,911	612
Large Business Energy Solutions	\$3,234,760	212,712,289	195
New Equipment & Construction	<u>\$2,771,151</u>	<u>108,803,809</u>	<u>196</u>
TOTAL COMMERCIAL & INDUSTRIAL	\$9,386,188	427,412,009	1,003
TOTAL	\$17,488,314	596,223,707	338,105

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