nationalgrid

Catherine L. Nesser
Assistant General Counsel

August 22, 2008

Honorable Jaclyn A. Brilling, Secretary
New York State Department of Public Service
Three Empire State Plaza
Albany, New York 12223-1350

Re: The Brooklyn Union Gas Company d/b/a National Grid NY and KeySpan Gas East Corporation d/b/a National Grid -
Proposed Expedited Gas Energy Efficiency Program

Dear Secretary Brilling:

Enclosed please find for filing by The Brooklyn Union Gas Company d/b/a National Grid NY and KeySpan Gas East Corporation d/b/a National Grid, collectively herein National Grid or the Companies ("National Grid" or the "Companies"), an original and five (5) copies of a proposed gas energy efficiency program. National Grid is seeking the Public Service Commission (the "Commission") authorization to implement a gas program identified as one of the "expedited fast track programs to be administered by utilities" in the Commission's June 23, 2008 Order Establishing Energy Efficiency Portfolio Standard and Approving Programs (the "Order"). The expedited gas program is proposed to be administered for the period October 1, 2008 through December 31, 2011 consistent with the Order.

Expedited Gas Energy Efficiency Program

The Order describes the expedited gas program as a Residential Gas Heating, Ventilation and Air Conditioning ("HVAC") Program. National Grid's corresponding proposed gas program in response to the Order is called a Residential High Efficiency Heating and Water Heating and Controls Program.

The Residential High Efficiency Heating and Water Heating and Controls Program will provide incentives to residential customers for the installation of high efficiency residential gas heating and water heating equipment and related controls. The proposed incentives are designed to cover approximately 75% of the incremental cost of installing high efficiency equipment. The Companies will provide direct incentives to customers through a mail-in rebate form. National Grid's costs for the Residential High Efficiency Heating and Water Heating and Controls Program for the period October 1, 2008 through December 31, 2011 total $18,675,000 against the proposed collection amount from firm service gas ratepayers set forth in the Order of $18,689,141. National Grid's projected costs include 5% for evaluation, measurement and verification ("M&V") across the board. However, in practice this may vary by program. As with the electric programs, recovery of lost revenues would be incremental to the Company's projected program costs.

The expedited gas energy efficiency program being proposed by National Grid augments the corresponding program that was included within the suite of interim gas programs that the Commission authorized the Companies to implement in the July 18, 2007 Order in Case 06-G-1185, *Proceeding on Motion of the Commission as to the Rates, Charges, Rules and Regulations of The Brooklyn Union Gas Company d/b/a KeySpan Energy Delivery New York for Gas Service,* and Case 06-G-1186, *Proceeding on Motion of the Commission as to the Rates, Charges, Rules and Regulations of KeySpan Energy Delivery Long Island for Gas Service*, Order Authorizing Interim Gas Energy Efficiency Programs and Related Deferrals. National Grid proposes to include incentives for heating controls and high efficiency gas hot water heating equipment as well as space heating equipment in the Residential High Efficiency Heating and Water Heating and Controls Program proposed in this filing.

Conclusion

National Grid has collaborated with the other New York State utilities as well as NYSERDA, Department of Public Service Staff and other interested stakeholders. Details on these collaborative efforts as well as individual program budgets and goals, program cost-effectiveness, and evaluation and reporting can be found in Attachment 1 appended hereto. The Company respectfully requests that the Commission expeditiously authorize the implementation of the gas energy efficiency program outlined above and more completely detailed in Attachment 1 so that

implementation can commence on or about October 1, 2008. National Grid is committed to advancing cost-effective energy efficiency programs as part of it core business objectives.

Six (6) copies of a Notice of Proposed Agency Action for publication in the State Register pursuant to the State Administrative Procedure Act are also enclosed.

Kindly acknowledge receipt of this filing by date-stamping as received the enclosed duplicate copy of this letter and returning it in the enclosed, self-addressed envelope provided for your convenience. Thank you for your attention to this matter.

Respectfully submitted,

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Enc.

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Timothy Stout, w/enclosure
Active Parties in EEPS Proceeding via listserv

NOTICE OF PROPOSED RULE MAKING
NO HEARING(S) SCHEDULED

Proposed Expedited Gas Energy Efficiency Program to Be Implemented by The Brooklyn Union Gas Company d/b/a National Grid NY and KeySpan Gas East Corporation d/b/a National Grid

I.D. No. PSC-_____

PURSUANT TO THE PROVISIONS OF THE State Administrative Procedure Act, NOTICE is hereby given of the following proposed agency action:

Proposed action: The Public Service Commission is considering whether to authorize, in whole or in part, a filing by The Brooklyn Union Gas Company d/b/a National Grid NY and KeySpan Gas East Corporation d/b/a National Grid (collectively National Grid) to implement a proposed expedited gas energy efficiency program for the period from October 1, 2008 to December 31, 2011 submitted in response to Case 07-M-0548, *Proceeding on Motion of the Commission Regarding an Energy Efficiency Portfolio Standard*, Order Establishing Energy Efficiency Portfolio Standard and Approving Programs (issued and effective June 23, 2008).

Statutory authority: Public Service Law, section 66.

Subject: Proposed expedited gas energy efficiency program to be implemented by National Grid.

Purpose: To authorize the implementation of a proposed expedited gas energy efficiency program by National Grid.

Substance of proposed rule: The Commission is considering whether to authorize, in whole or in part, a filing by National Grid, pursuant to Public Service Law section 66, to implement a proposed expedited gas energy efficiency program for the period from October 1, 2008 to December 31, 2011. The filing is submitted in response to the Commission's June 23, 2008 Order Establishing Energy Efficiency Portfolio Standard and Approving Programs in Case 07-M-0548.

Text of proposed rule may be obtained by fling a Document Request Form (F-96) located on our website http://www.dps.state.ny.us/f96dir.htm. For questions, contact: Central Operations, Public Service Commission, Bldg. 3, Empire State Plaza, Albany, NY 12223-1350, (518) 474-2500

Data, view or arguments may be submitted to: Jaclyn A. Brilling, Secretary, Public Service Commission, Bldg. 3, Empire State Plaza, Albany, NY 12223-1350, (518) 474-6530

Public comment will be received until: 45 days after publication of this notice.

Regulatory Impact Statement, Regulatory Flexibility Analysis, Rural Area Flexibility Analysis and Job Impact Statement

Statements and analyses are not submitted with this notice because the proposed rule is within the definition contained in section 102(2)(a)(ii) of the State Administrative Procedure Act.

(08-G-____SA1)

ATTACHMENT 1

Table of Contents

The Brooklyn Union Gas Company d/b/a National Grid NY

and

KeySpan Gas East Corporation d/b/a National Grid

Expedited Gas Energy Efficiency Program Proposal

August 22, 2008

I. Introduction

The Brooklyn Union Gas Company d/b/a National Grid NY (formerly d/b/a KeySpan Energy Delivery New York ("KEDNY")) and KeySpan Gas East Corporation d/b/a National Grid (formerly d/b/a KeySpan Energy Delivery Long Island ("KEDLI")) and collectively herein National Grid or the Companies ("National Grid" or the "Companies") propose to implement the gas energy efficiency program identified as a fast track expedited program to be administered by gas utilities in the Commission's June 23, 2008 Order in Case 07-M-0548 (the "Order")[1] to begin achieving energy savings under the Energy Efficiency Portfolio Standard ("EEPS"). The Order describes the program as follows:

Gas Expedited Program:[2]

1. Residential gas heating, ventilation and air conditioning ("HVAC") energy efficiency program.

The proposed expedited gas energy efficiency program augments the interim program that the Commission authorized the Companies to implement in the July 18, 2007 Order in Cases 06-G-1185 and 06-G-1186 (the "Order Authorizing Interim Gas Programs").[3] National Grid proposes to include incentives for heating controls and high efficiency gas

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[1] Case 07-M-0548, *Proceeding on Motion of the Commission Regarding an Energy Efficiency Portfolio Standard*, Order Establishing Energy Efficiency Portfolio Standard and Approving Programs (issued and effective June 23, 2008) (the "Order").

[2] *Id.*, at p. 41.

hot water heating equipment as well as space heating equipment in the program that is the subject of this filing.

[3] Case 06-G-1185, *Proceeding on Motion of the Commission as to the Rates, Charges, Rules and Regulations of The Brooklyn Union Gas Company d/b/a KeySpan Energy Delivery New York for Gas Service*, and Case 06-G-1186, *Proceeding on Motion of the Commission as to the Rates, Charges, Rules and Regulations of KeySpan Energy Delivery Long Island for Gas Service*, Order Authorizing Interim Gas Energy Efficiency Programs and Related Deferrals (issued and effective July 18, 2007) (the "Order Authorizing Interim Gas Programs").

II. Collaboration

National Grid has and will continue to collaborate with the other New York State electric and natural gas utilities, New York State Energy Research and Development Authority ("NYSERDA"), Department of Public Service Staff ("DPS Staff"), and other interested stakeholders about planned energy efficiency efforts, including but not limited to discussions about the proposed expedited program designs, evaluation planning, and coordination of program services. These collaborative efforts to date have taken the form of numerous teleconferences and in-person meetings, as well as a webinar with interested stakeholders. The table below provides further details on these recent collaborative activities.

Sample Collaborative Activities, March – August 2008

Dates	Attendees	Topics of Discussion
March 18, 2008 (NYSERDA's Albany Office) and July 22, 2008 (NYSERDA's NYC Office)	National Grid representatives and NYSERDA program staff	Discussed opportunities for program coordination and collaboration in context of EEPS proceeding. The parties identified gaps in their combined programs and ways to address such gaps, as well as potential program barriers for customers. The parties agreed to identify the consistencies in their offerings and combine common attributes of program design, including incentives, eligibility criteria, technical assistance and measurement and verification.
July 14, 2008 (teleconference; multiple follow-up calls)	National Grid and NYSERDA representatives	Reviewed residential program description drafts and discussed program options.
July 17 and 18, 2008 (National Grid's Syracuse Office)	National Grid, Central Hudson, St. Lawrence Gas, National Fuel Gas, New York State Electric & Gas / Rochester Gas & Electric, and Orange & Rockland representatives	Discussed common elements of program designs as well as program implementation and program evaluation issues facing upstate New York utilities.

Dates	Attendees	Topics of Discussion
July 23, 2008 (National Grid's Brooklyn Office)	National Grid and NYSERDA representatives	Discussed options for multifamily efficiency program development for upstate New York.
July 28, 2008 (webinar /teleconference) and August 1, 2008 (teleconference)	National Grid, Central Hudson, St. Lawrence Gas, National Fuel Gas, New York State Electric & Gas / Rochester Gas & Electric, Orange & Rockland, and NYSERDA representatives	Respective parties held discussions to identify areas of uniformity and where planned residential and C&I programs complement each other. Parties also discussed how program design, delivery and marketing might be complemented by NYSERDA's existing portfolio of energy efficiency programs. The overall objective of subsequent meetings with NYSERDA and utilities is to work at the program detail level, address individual company issues and maximize savings while reducing the risks of confusing customers or double counting savings.
July 31, 2008 (teleconference)	National Grid representatives, DPS Staff, and other Signatory Parties to the Joint Proposal, including NYSERDA representatives	Reviewed Niagara Mohawk's Joint Proposal to provide interim gas energy efficiency programs for upcoming heating season (a proposed eight-month program plan).
August 1, 2008 (teleconference)	National Grid representatives, DPS Staff, and other Signatory Parties to the Joint Proposal, including NYSERDA representatives	Second round of revisions to Niagara Mohawk's Joint Proposal to provide interim gas energy efficiency programs. The Joint Proposal was finalized incorporating all signatory parties' input and filed with the Public Service Commission on this same date.
August 6, 2008 (teleconference)	National Grid, Central Hudson, St. Lawrence Gas, National Fuel Gas, New York State Electric & Gas / Rochester Gas & Electric, and Orange & Rockland representatives.	Discussed evaluation planning and possible coordination.

Dates	Attendees	Topics of Discussion
August 12, 2008 (teleconference)	National Grid, Central Hudson, St. Lawrence Gas, National Fuel Gas, New York State Electric & Gas / Rochester Gas & Electric, and Orange & Rockland representatives	Reviewed Independent Program Administrator proposals.
August 15, 2008 (teleconference)	National Grid, Central Hudson, St. Lawrence Gas, National Fuel Gas, New York State Electric & Gas / Rochester Gas & Electric, and Orange & Rockland representatives	Discussed evaluation planning and possible coordination.

III. Budget and Goals

The Order sets out proposed annual collection amounts from firm service gas ratepayers for the expedited gas energy efficiency program as shown in the following table:[4]

	Currently Authorized Rebate Programs	Annual Collections - New Gas SBC	Total Proposed Funding
KEDLI	$1,495,077	$815,103	$2,310,180
KEDNY	$2,178,071	$1,262,254	$3,440,325
Total	$3,673,148	$2,077,357	$5,750,505

The Company is proposing funding that approximates the above recommended amount for the proposed expedited program through 2011.

The following tables provide budgets[5,6] for the proposed expedited gas energy efficiency program in 2009[7] through 2011[8] in the New York and Long Island service territories. National Grid proposes to recover lost revenues associated with the implementation of this proposed expedited gas energy efficiency program in a manner consistent with that set forth in the Order Authorizing Interim Gas Programs that utilizes the stipulated savings for the corresponding programs as found in Table 1 of Appendix B of the Interim Energy Efficiency Joint Proposal attached thereto.[9]

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[4] *See* Case 07-M-0548, *Proceeding on Motion of the Commission Regarding an Energy Efficiency Portfolio Standard*, Errata Notice (issued July 3, 2008) and attached Table 18 (Revised) attached thereto.
[5] Descriptions of the costs included in the budget categories shown in the tables are provided in Appendix A.
[6] The Company has budgeted 5% of program costs for evaluation and market research efforts as required in the Order.
[7] For the purpose of this program plan, the 15-month period October 1, 2008 through December 31, 2009 is referred to as 2009. This first program period reflects the Company's desire to launch program efforts prior to the start of the upcoming heating season while also recognizing the start-up activities that will be needed to successfully launch programs.
[8] If the Commission subsequently determines that a performance incentive is appropriate for utility-administered gas energy efficiency programs, the Company reserves the right to propose an increase to its proposed expedited gas energy efficiency program budget to include such a performance incentive as applicable.
[9] *See* Order Authorizing Interim Gas Programs, Interim Energy Efficiency Joint Proposal, Appendix B, p.1.

Projected Costs in 2009 – 2011
Residential High Efficiency Heating and Water Heating and Controls Program - KEDNY

Year	Program Planning and Administration	Program Marketing & Trade Ally	Customer Incentives or Services	Program Implementation	Evaluation & Market Research	Total Utility Cost
2009	$119,524	$486,100	$1,190,000	$100,000	$94,781	$1,990,405
2010	$204,075	$829,964	$2,031,800	$170,739	$161,829	$3,398,407
2011	$288,913	$1,174,995	$3,776,456	$241,719	$274,104	$5,756,187
2009 - 2011	$612,513	$2,491,059	$6,998,255	$512,458	$530,714	$11,145,000

Projected Costs in 2009 – 2011
Residential High Efficiency Heating and Water Heating and Controls Program - KEDLI

Year	Program Planning and Administration	Program Marketing & Trade Ally	Customer Incentives or Services	Program Implementation	Evaluation & Market Research	Total Utility Cost
2009	$94,351	$308,372	$1,190,000	$100,000	$84,636	$1,777,359
2010	$121,757	$397,947	$1,535,668	$129,048	$109,221	$2,293,641
2011	$150,177	$490,832	$2,494,108	$159,169	$164,714	$3,459,000
2009 - 2011	$366,285	$1,197,151	$5,219,776	$388,216	$358,571	$7,530,000

Projected Costs in 2009 – 2011
Residential High Efficiency Heating and Water Heating and Controls Program – KEDNY and KEDLI Combined

Year	Program Planning and Administration	Program Marketing & Trade Ally	Customer Incentives or Services	Program Implementation	Evaluation & Market Research	Total Utility Cost
2009	$213,875	$794,472	$2,380,000	$200,000	$179,417	$3,767,764
2010	$325,833	$1,227,911	$3,567,468	$299,787	$271,050	$5,692,049
2011	$439,090	$1,665,827	$6,270,564	$400,888	$438,818	$9,215,187
2009 - 2011	$978,798	$3,688,210	$12,218,031	$900,675	$889,286	$18,675,000

Projected participation and savings in the expedited gas energy efficiency program are provided in the following table:

Participation and Savings Goals - Expedited Gas Program - KEDNY

	2009			2010			2011		
	Participants	Annualized MMBTu Savings	Lifetime MMBTu Savings	Participants	Annualized MMBTu Savings	Lifetime MMBTu Savings	Participants	Annualized MMBTu Savings	Lifetime MMBTu Savings
Residential High Efficiency Heating and Water Heating and Controls	1,862	19,327	434,431	3,326	35,248	786,204	6,182	65,515	1,461,299

Participation and Savings Goals - Expedited Gas Program - KEDLI

	2009			2010			2011		
	Participants	Annualized MMBTu Savings	Lifetime MMBTu Savings	Participants	Annualized MMBTu Savings	Lifetime MMBTu Savings	Participants	Annualized MMBTu Savings	Lifetime MMBTu Savings
Residential High Efficiency Heating and Water Heating and Controls	1,951	22,182	467,050	2,848	29,750	655,013	3,496	36,519	804,052

IV. Program Cost-Effectiveness

1. Plan Results

National Grid has projected the expected benefits and costs associated with the expedited gas energy efficiency program and services that it propose to administer in 2009 - 2011 using a Total Resource Cost ("TRC") Test. The TRC Test is the primary test used by the New York Public Service Commission (the "Commission")[10]. The following tables summarize the expected benefits, costs, and the benefit/cost ratios for the expedited program that will be implemented in 2009 - 2011. For more detailed information about the benefits and costs associated with the program, see Appendix B attached hereto. The input assumptions used in this analysis can be found in attached Appendix C.

[10] *See* Case 04-E-0572 – *Proceeding on Motion of the Commission as to the Rates, Charges, Rules and Regulations of Consolidated Edison Company of New York, Inc. for Electric Service,* Order On Demand Management Action Plan (issued and effective March 16, 2006).

Expedited ENERGY EFFICIENCY PROGRAMS
2009 - 2011 TRC BENEFIT COST TEST

Summary of Benefit , Costs (2009 $s)
Total Resource Cost Test

Program	2009 TRC Benefit/ Cost	2009 Total NPV Benefits ($000)	2009 Total NPV Costs ($000)	2010 TRC Benefit/ Cost	2010 Total NPV Benefits ($000)	2010 Total NPV Costs ($000)	2011 TRC Benefit/ Cost	2011 Total NPV Benefits ($000)	2011 Total NPV Costs ($000)	2009 - 2011 TRC Benefit/ Cost	2009 - 2011 Total NPV Benefits ($000)	2009 - 2011 Total NPV Costs ($000)
KEDNY Residential High Efficiency Heating and Water Heating and Controls	1.04	$2,744	$ 2,633	1.16	$5,104	$ 4,390	1.35	$9,761	$ 7,231	1.24	$17,609	$14,253
KEDLI Residential High Efficiency Heating and Water Heating and Controls	1.48	$3,106	$ 2,097	1.77	$4,403	$ 2,481	1.61	$5,564	$ 3,465	1.63	$13,074	$8,042
Grand Total	**1.24**	**$5,850**	**$4,730**	**1.38**	**$9,507**	**$6,871**	**1.43**	**$15,326**	**$10,695**	**1.38**	**$30,683**	**$22,295**

B. Avoided Costs and Description of Program Benefits

The TRC Test compares the present value of future electric system, natural gas, and other customer savings to the total of the expenditures and customer costs necessary to implement the programs. The benefit of a measure is the net present value of the avoided costs (i.e., value of the savings) associated with the net savings of a measure over the life of that measure. The net savings reflect findings from evaluation studies that National Grid has conducted in New England. The measure life is based on the technical life of the measure modified to reflect expected measure persistence.

The avoided costs used to determine program cost effectiveness for the expedited natural gas energy efficiency program were developed by DPS Staff, inflated by 20% to account for increased fuel prices since DPS Staff conducted their analysis. The electric energy savings anticipated from this program have been valued using the avoided electric and capacity values from "Niagara Mohawk Avoided Electricity and Natural Gas Costs" ("Avoided Cost Report"). A copy of that report is attached in Appendix D hereto. The Niagara Mohawk electric avoided costs have been used as a proxy for electric avoided costs downstate and have been used to value the electricity savings anticipated from the proposed gas energy efficiency program.

Avoided electric energy and capacity values used for this three-year plan are from Table 7 of the Avoided Cost Report. Table 7 presents avoided electric energy and capacity values for the Company's service area in New York in 2007 dollars. The avoided costs in Table 7 incorporate a reserve margin, pool transmission losses incurred from the generator to the point of delivery to the distribution companies, and a retail adder as recommended by Synapse. The New York Independent System Operator ("NYISO") reserve margins are incorporated into the capacity values, since energy efficiency avoids the back-up reserves for that generation as well as the generation itself. The avoided energy costs include the expected cost of complying with regional and federal carbon control requirements. The

avoided costs do not include non-pool transmission losses or distribution losses. They also do not include company specific avoided transmission and distribution capacity values.

Table 7 also provides CO_2 values that are termed "CO2 Related Costs NOT REFLECTED IN WHOLESALE POWER PRICES." These additional values reflect the difference between what is considered to be the cost of controlling carbon to a sustainable level and the costs of carbon mitigation—based on anticipated Regional Greenhouse Gas Initiative ("RGGI") and federal requirements—internalized into the avoided energy costs.

To escalate the avoided costs into 2009 constant dollars, an inflation rate of 2.98% was applied.

Avoided transmission and distribution capacity values used in the analysis are determined from a spreadsheet tool that was developed in 2005 by ICF International, Inc., the consultant that performed the biennial avoided cost study for New England's energy efficiency program administrators. The tool calculates an annualized value of avoided transmission and distribution capacity values from company specific inputs of historic and forecast capital expenditures and loads, as well as a carrying charge calculated from applicable tax rates and Federal Energy Regulatory Commission ("FERC") Form 1 accounting data. National Grid used this tool to develop its values of $18.07/kW for avoided transmission capacity and $63.87/kW for avoided distribution capacity in New York. These are in 2006 dollars and have been escalated to 2009 dollars for the benefit/cost analyses. These values are assumed to be constant in real dollars throughout the analysis period.

Demand and energy loss factors are applied to the avoided costs to account for local transmission and distribution losses from the point of delivery to the distribution company's system to the ultimate customer's facility.

The dollar value of the program's benefits is calculated by multiplying the expected savings by the appropriate avoided value component. The avoided value component for

each benefit (e.g., electric energy, capacity, natural gas) is the cumulative net present value (2009 dollars) of lifetime avoided costs for each year of the planning horizon from the base year. For example, the avoided value component in Year 10 for any given benefit is the sum of the net present value of the annual avoided costs for the resource for Year 1, Year 2, Year 3, etc., through Year 10, in 2009 dollars. This value is applied to the annual savings for a measure with a 10-year life to generate the lifetime avoided benefit for that measure. Since all of the future year values are in constant 2009 dollars, lifetime benefits thus calculated are discounted back to 2009 using a real discount rate equal to [(1 + Nominal Discount Rate) / (1 + Inflation)] - 1. The nominal discount rate used for this three-year plan is 8.6% which is equivalent to a real discount rate of 5.5%, the discount rate recommended for use by DPS Staff.

The expedited natural gas energy efficiency program is expected to produce electricity savings in addition to natural gas savings. The value of both the natural gas and electricity savings expected from the implementation of this gas energy efficiency program has been valued in the assessment of cost-effectiveness.

Avoided Benefits Calculations:

Avoided Electric Energy Benefits. The Avoided Cost Report identified four electric energy costing periods consistent with the NYISO definitions. Energy prices are divided into the following four time periods:

- Winter Peak: October – May, 6:00 a.m. – 10:00 p.m., weekdays excluding holidays.
- Winter Off-Peak: October – May; 10:00 p.m. – 6:00 a.m., weekdays. Also including all weekends and the NYISO defined holidays.
- Summer Peak: June – September, 6:00 a.m. – 10:00 p.m., weekdays excluding holidays.
- Summer Off-Peak: June – September; 10:00 p.m. – 6:00 a.m., weekdays. Also including all weekends and the NYISO defined holidays.

Net energy savings for a program (or measures aggregated within a program) are allocated to each one of these time periods and multiplied by the appropriate avoided energy value. The dollar benefits are then grossed up using the appropriate loss factors.

- Summer Peak Energy Benefit ($) = kWhNet * $Energy\%_{SumPk}$ * $SumPk\$/kWh_{(@Life)}$ * (1 + $\%Losses_{SumPk\text{-}kWh}$)
- Summer OffPeak Energy Benefit ($) = kWhNet * $Energy\%_{SumOffPk}$ * $SumOffPk\$/kWh_{(@Life)}$ * (1 + $\%Losses_{SumOffPk\text{-}kWh}$)
- Winter Peak Energy Benefit ($) = kWhNet * $Energy\%_{WinPk}$ * $WinPk\$/kWh_{(@Life)}$ * (1 + $\%Losses_{WinPk\text{-}kWh}$)
- Winter OffPeak Energy Benefit ($) = kWhNet * $Energy\%_{WinOffPk}$ * $WinOffPk\$/kWh_{(@Life)}$ * (1 + $\%Losses_{WinOffPk\text{-}kWh}$)

Avoided Generation Capacity Benefits. Capacity benefits from energy efficiency accrue because demand reduction reduces the NYISO's Unforced Capacity ("UCAP") requirement. The UCAP requirement is based on load's contribution to the system peak, which, for the NYISO, is the summer peak. Therefore, capacity benefits accrue only from summer peak demand reduction and are determined by multiplying net peak summer demand savings by avoided generating capacity values from the Avoided Cost Report and capacity loss factor representing losses downstream of the NYISO delivery point. There is no winter generation capacity benefit.

- Generation Capacity Benefit($) = kWSum*AnnualMarketCapValue$/$kW_{(@Life)}$ * (1 + $\%Losses_{SumkW}$)

Avoided Transmission and Distribution Capacity Benefits. These values are calculated similarly to the avoided generation capacity values, using the Company's specific avoided transmission and distribution ("T&D") capacity values. In theory, the benefit could be allocated to summer and winter periods, depending on the relation between summer and winter peaks on the local system. However, in recent years, National Grid's system in New York has been summer peaking. Therefore, the T&D benefits will be exclusively associated with summer demand reduction.

- Transmission Benefit ($) = (kWSum * $Trans\$/kW_{(@Life)}$ * [1 + ($Losses_{SumkWTrans}$)]
- Distribution Benefit ($) = (kWSum * $Dist\$/kWLife_{(@Life)}$ * [1 + ($Losses_{SumkWDist}$)]

Natural Gas Benefits. National Grid has used the natural gas avoided costs developed by DPS Staff to value the savings anticipated from its expedited natural gas energy efficiency program. The dollar value of natural gas benefits is calculated as:

- Natural Gas Benefits ($) = MMBTU_NetGas * Gas$/MMBTU

V. Program Description

The Companies propose to begin implementation of the High Efficiency Heating and Water Heating and Controls gas energy efficiency program beginning October 1, 2008. A description of this program follows.

1. Residential High Efficiency Heating and Water Heating and Controls Program

Purpose

The purpose of this program is to provide incentives to residential customers to install high efficiency residential gas heating and water heating equipment and related controls. The proposed incentives are designed to cover approximately 75% of the incremental cost of installing high efficiency equipment. Rebate levels are listed in Table i below. It is important to advance the installation of high efficiency equipment because New York has a fairly low market share of high efficiency furnaces according to 2005 data from the Gas Appliance Manufacturers Association ("GAMA"). GAMA reports that only 50% of the equipment shipments to New York are high efficiency.

Program Administration and Delivery

This program will be administered by National Grid working with vendors who will be selected through a competitive solicitation and who are expected to work with local contractors.

Target Market and Marketing Approach

All residential customers installing heating and water heating equipment and controls, typically up to 300,000 BTUs, will be eligible to participate in this program. Marketing approaches will include direct mail campaigns, bill inserts, trade ally events, sponsorships, and contractor job site visits and education. Program brochures, builders' kits, and

incentive applications will be the primary marketing material utilized. Trade ally trainings for local contractors and builders focusing on the specification and installation of high efficiency equipment will be emphasized in this program.

National Grid will offer a variety of marketing and educational awareness campaigns to create awareness for this program. A strong emphasis will be placed on working with builders and contractors who install natural gas-heated equipment.

Target End Uses, Recommended Technologies, and Financial Incentives

National Grid will provide direct incentives to customers through a mail-in rebate form. The Companies will explore other program features to overcome barriers to participation as the program progresses which may include on-bill financing of the customer's cost.

Standard incentives will be paid out to the customers. The program will also offer higher incentives to contractors who are BPI-certified, thus the difference between the standard and higher incentive that will be paid out to the contractor. NYSERDA has provided support to contractors interested in BPI in the New York City metropolitan area. National Grid plans to support these efforts through the contractor incentives and encourage more technicians to become BPI-certified.

The program provides the co-benefits of improving the housing stock in the National Grid service territory by improving the heating and water heating equipment which increases the property value and also has the effect of making sure the systems are operating safely.

National Grid will coordinate with Consolidated Edison, New York City and regional efforts such as GasNetworks, the Consortium for Energy Efficiency ("CEE") and others. National Grid may increase or decrease rebates as markets or conditions change, and to support local, regional, and national efforts.

All installations of high efficiency heating systems, water heating systems, and boiler reset controls must be installed by a licensed contractor or plumber to qualify for the program.

Additional cost-effective heating and water heating measures may be added as they are identified, subject to available funding.

Table-i: Residential High Efficiency Heating and Water-Heating and Controls Program

Product	Rating	Standard Incentive	Incentive With a BPI Contractor
Furnaces (forced hot air)	AFUE 92% or greater	$150	$200
Furnaces (forced hot air with ECM)	AFUE 92% or greater	$400	$600
Boilers (forced hot water- condensing)	AFUE 90% or greater	$1200	$1400
Boilers (forced hot water)	AFUE 85% or greater	$750	$850
Boilers (steam with electronic ignition)	AFUE 82% or greater	$400	$500
Indirect water heater attached to an ENERGY STAR® rated natural gas boiler		$300	$400
Tankless on-demand water heaters	Energy Factor of .82 or greater with electronic ignition	$300	$400
ENERGY STAR® thermostats	Savings will be counted under Residential ENERGY STAR® Products Program	$25	$25
Boiler Reset Controls	After-market equipment only	$100	$100

Evaluation Plan

In 2009, evaluation efforts will focus on identifying how the program is operating during the start-up phase, with the objective of identifying improvements that can be made to program implementation efforts. National Grid plans to initiate a process evaluation in support of these efforts. National Grid plans to hire an independent evaluation expert through a competitive solicitation to complete this work. This RFP will be issued in November 2008 with the objective of hiring the evaluation contractor by year-end 2008. The Companies will request interim reports from the selected contractor so that modifications to the implementation effort can be adopted quickly where it appears that a change is likely to lead to improved results in the program. A final report summarizing results from the process evaluation will likely be completed by year-end 2009.

Process Evaluation

The first year process evaluation will document program processes during start-up and will gather the following information:

- Level of customer satisfaction.
- Effectiveness of the program delivery mechanism from the position of the program delivery contractors, program customers, trade allies and other key stakeholders. Did the delivery mechanism differ from the program plan? If yes, how and why?
- Effectiveness of program promotion.
- Remaining barriers to program participation including an assessment of why some customers choose to not participate in the program.
- Identification of lessons learned and specific actionable recommendations for program improvement.
- A review of program tracking databases to ensure that data that will likely be required to support future program evaluation efforts is being collected.

As part of the process evaluation plan, National Grid will survey participating and non-participating customers as well as trade allies who have and have not promoted the program.

Year Two Evaluation

Impact Evaluation

The Impact Evaluation will quantify the savings attributable to program efforts based on how the equipment installed through this program is actually operating. National Grid anticipates completing an impact evaluation of the Residential High Efficiency Heating and Water Heating and Controls Program in 2010 using industry-accepted methods of analysis.

National Grid will explore conducting this evaluation with other utilities implementing a similar program so that consistent approaches are used to arrive at evaluated program savings. However, at this point in time, absent guidance from the Evaluation Advisory Group, National Grid proposes the following for consideration as part of its program evaluation plan.

- **Impact Evaluation Methodology.** An independent evaluation consultant will be hired through a competitive solicitation where firms proposing to complete the work will recommend an impact evaluation approach appropriate for this type of program that will produce results that meet the precision requirements set forth in the guidelines issued through the Evaluation Advisory Group. Possible evaluation approaches may include a billing data analysis, an engineering simulation model, metering, or some other approach. This analysis may include surveys with program participants and trade allies in an effort to arrive at net savings attributable to program efforts. The results of the impact evaluation will be used to refine expectations about future program savings, and may be used to modify future programs. Results from this study are anticipated by year-end 2010.

- **Net to Gross Analysis**. Prior to any additional analysis being conducted, National Grid has assumed a net free-ridership rate of 10% when developing savings goals for this program.

- **Benefit Cost Analysis.** Benefit cost analysis is performed at the measure and program level. National Grid has conducted a benefit cost analysis for this program using available information. Future assessments of cost-effectiveness will take into account findings from program evaluation efforts.

- **Budget.** Consistent with the Order, National Grid has budgeted 5% of program implementation costs to fund evaluation efforts. Actual evaluation expenses for this program may be higher or lower than this amount.

- **Sampling Strategies and Design and Data Reliability Standards.** Consistent with the Evaluation Plan Guideline for EEPS Program Administrators and as recommended by Working Group III,[11] National Grid's goal for estimating gross savings at the program level is at the 90 percent confidence interval, within +/- 10 percent precision. The Companies will develop sampling protocols for all evaluations based on this standard. However, actual evaluation results may deviate from this standard.

- **Steps to Identify and Mitigate Threats to Data Reliability.** National Grid will review the evaluation plan submitted by the selected evaluation contractor for consistency with the Evaluation Advisory Group guidelines, the requirement to maintain a 90% confidence interval with +/- 10 % precision, and the overall need to identify and mitigate threats to reliability of the results. The evaluation contractor will be required to insure data reliability to the greatest practical extent, including methods for minimizing systematic and random error and techniques for reducing

[11] *See* Working Group III Final Report, dated December 7, 2007, at p. 37.

uncertainty introduced by necessary assumptions and adjustments to the data. The selected evaluation contractor will be asked to include a discussion about threats to data reliability in their reports.

- **Data Collection and Management Process.** Program data will be collected from customer application forms, site visits and surveys of participants and non-participants. National Grid's tracking system, supplemented by data that the Companies require their implementation vendors to track, supports program evaluation through the collection of all relevant data pertaining to customer rebates and installed equipment. Customer name, account, premise level and other non-program specific data is captured in the system. Measure-specific data as appropriate will also be captured. Examples of measure-specific data that will be collected can include[12]:
    - Date of contract/agreement to install measure(s)
    - Date of beginning of installation process
    - Installation completion date
    - Installation contractor
    - Installation location
    - Project or work order number
    - Type of measure
    - Annualized energy savings
    - Measure life
    - Total measure installed cost
    - Incremental measure cost
    - Incentive payment amount
    - Project completion date
    - Evaluation inspection/commissioning date
    - Date of evaluation of measure or program
    - Types of evaluation conducted

[12] Please note that not of all the measure-specific data listed here are going to be captured for the Residential High Efficiency Heating and Water Heating and Controls Program.

- Result of evaluation

- **Schedule and Deliverable Dates.** National Grid anticipates initiating a process evaluation early in 2009 and an impact evaluation in the spring of 2010. Final results of the process evaluation are anticipated by year-end 2009. Final results for the impact evaluation are anticipated by year-end 2010.

- **Data Collection.** Data to be collected about this program is discussed above. Reporting is discussed below in Chapter VI. Evaluation and Reporting.

VI. Evaluation and Reporting

Evaluation

Consistent with the Order, National Grid has budgeted 5% of program implementation costs to support program evaluation efforts. Detailed evaluation plans for the proposed expedited program have been provided along with the program description. In general, in the first year, National Grid anticipates focusing on process evaluation efforts that will assist the Companies in making timely adjustments to program implementation efforts to improve overall effectiveness. In later years, National Grid anticipates focusing on impact evaluation efforts so that actual savings from program efforts can be estimated more accurately. In some cases, some early impact studies may be undertaken where participants from New York can be included with participants from New England to arrive at net savings that are relevant over the combined New York and New England service territories. This approach will result in lower evaluation expenses both in New York and in New England.

In planning evaluation activities, National Grid considers several factors including the length of time since a program or end-use was evaluated, the maturity of the program (particularly for process evaluation issues), the significance of expected savings for the end use or project in the recently completed program year, the stability of prior evaluation results for the program aspect under consideration, and expected opportunities to participate in joint studies, including market assessments, in the coming year. National Grid plans to oversee the efforts of independent evaluation consultants who will be selected through a competitive bidding process to complete its evaluation studies.

National Grid is represented on the Evaluation Advisory Group convened by the Director of the Office of Energy Efficiency and Environment, Department of Public Service. A portion of National Grid's evaluation budget is anticipated to be directed to the Evaluation Advisory Group's efforts to fund the efforts of an evaluation expert who will advise DPS Staff and the Evaluation Advisory Group as well as to fund evaluation studies that will be

conducted across New York State. These studies are anticipated to include, but not be limited to, baseline practices studies and avoided cost studies. The Evaluation Advisory Group is expected to create evaluation protocols that all program administrators in the state would agree to adopt. National Grid is committed to working with the parties to develop these protocols.

National Grid's Evaluation Team

National Grid USA Service Company includes a centralized energy efficiency staff that oversees evaluation projects completed in support of energy efficiency efforts in New England and New York. Carol White directs the Energy Efficiency Evaluation and Regulatory Affairs Group. She reports to the Vice President of Energy Efficiency and Distributed Resources.

Reporting

National Grid is proposing to provide the Commission with quarterly reports on the progress of program implementation. These reports will include information on actual expenses, customer participation, and savings realized compared to annual budgets and goals. These reports will also include information about ongoing program evaluation efforts. Each quarterly report will be submitted to the Commission approximately 45 days following the end of the calendar quarter.

In addition to quarterly reporting, National Grid proposes to submit an annual report to the Commission for the purpose of updating its proposed budgets and goals for the coming year informed by evaluation findings, customer response to program services, and other relevant market intelligence. The proposed budget to be included in this annual update will reflect any under- or over-spending from the prior year. Each annual report will be submitted to the Commission approximately 180 days following the end of the calendar year.

National Grid is proposing to use the same reporting format it has been using in its reports to the Commission for the KEDNY and KEDLI interim gas programs in the 2007-2008 winter heating season. (See sample Status Report in attached Appendix E.) The specific categories of information included in the report include:

- Program Planning & Administrative Expenditures, year-to-date
- Program Marketing Expenditures, year-to-date
- Customer Incentive Expenditures, year-to-date
- Program Implementation Expenditures, year-to-date
- Evaluation & Market Research Experience, year-to-date
- Total Expenditures, year-to-date
- Program Year Budget, year-to-date
- Annual Budget
- Number of Rebates (or Participants), year-to-date
- Participation Goal, year-to-date
- Annual Participant Goal for the Program Year
- Total Savings (kWh, kW, Therms), year-to-date
- Savings Goal, year-to-date
- Annual Savings Goals for the Program Year

APPENDIX A

Appendix A
Explanation of Budget Categories

Program Planning and Administration

Costs to administer energy efficiency programs that include but are not limited to; staff salaries (management personnel, program managers, accounting personnel, evaluation staff, regulatory staff, and administrative support staff), and company overhead (i.e., office space, supplies, computer and communication equipment, staff training, industry related sponsorships and memberships).

Program Marketing and Trade Ally

Promotion of energy efficiency programs which includes but is not limited to; production of all energy efficiency program literature, advertising, promotion, displays, events, promotional items, bill inserts, internal and external communications. Advertising encompasses all forms of media such as direct mail, print, radio, television, and internet.

Trade Ally includes all activity associated with energy efficiency training/education of the trade ally community which includes but is not limited to; heating contractors, weatherization contractors, efficiency equipment/products installers, residential and C&I auditors, residential and C&I builders and developers.

Customer Incentives or Services

Costs associated with rebates paid to customers for implementing energy efficiency. Additionally, this includes services provided to customers such as energy audits, technical assessments, engineering studies, plans reviews, blower door tests and infrared scans.

Program Implementation

Costs associated with vendors and contractors administering programs on the Company's behalf. Tasks associated with this budget category include but are not limited to; lead intake, customer service, rebate application processing, rebate application problem resolution, equipment installation inspections, rebate processing and individual program reporting.

Evaluation and Market Research

All activities associated with the evaluation of current and potential energy efficiency programs. These activities include but are not be limited to; benefit cost ratio analysis, program logic models, cost per therm analysis, efficiency product saturation analysis, customer research and all ad hoc analyses that are necessary for program evaluation. In addition any activities that pertain to regulatory compliance or reporting conducted by energy efficiency group personnel or contractors would fall under this category. Expenses associated with evaluation include all internal and external costs (i.e., consultant contracts).

APPENDIX B

Expedited ENERGY EFFICIENCY PROGRAMS
2009 - 2011 TRC BENEFIT COST TEST

Summary of Benefit , Costs (2009 $s)
Total Resource Cost Test

Program	2009 TRC Benefit/ Cost	2009 Total NPV Benefits ($000)	2009 Total NPV Costs ($000)	2010 TRC Benefit/ Cost	2010 Total NPV Benefits ($000)	2010 Total NPV Costs ($000)	2011 TRC Benefit/ Cost	2011 Total NPV Benefits ($000)	2011 Total NPV Costs ($000)	2009 - 2011 TRC Benefit/ Cost	2009 - 2011 Total NPV Benefits ($000)	2009 - 2011 Total NPV Costs ($000)
KEDNY Residential High Efficiency Heating and Water Heating and Controls	1.04	$2,744	$ 2,633	1.16	$5,104	$ 4,390	1.35	$9,761	$ 7,231	1.24	$17,609	$14,253
KEDLI Residential High Efficiency Heating and Water Heating and Controls	1.48	$3,106	$ 2,097	1.77	$4,403	$ 2,481	1.61	$5,564	$ 3,465	1.63	$13,074	$8,042
Grand Total	**1.24**	**$5,850**	**$4,730**	**1.38**	**$9,507**	**$6,871**	**1.43**	**$15,326**	**$10,695**	**1.38**	**$30,683**	**$22,295**

ENERGY EFFICIENCY PROGRAMS
2009 - 2011 TRC BENEFIT COST TEST

		Total Benefits										Load Reduction			MWh Saved		MMBTU Saved	
			Capacity				Energy											
			Generation				Winter		Summer									
Year	Program	Total Benefits	Summer	Winter	Trans	MDC	Peak	Off Peak	Peak	Off Peak	Natural Gas	Summer	Winter	Lifetime	Annual	Lifetime	Annual	Lifetime
2009	KEDNY Residential High Efficiency Heating and Water Heating and Controls	$2,743,549	$12,924	$0	$2,228	$7,877	$4,997	$7,850	$7,842	$5,447	$2,694,384	9	11	160	24	430	19,327	434,431
	KEDLI Residential High Efficiency Heating and Water Heating and	$3,106,458	$34,833	$0	$6,006	$21,230	$13,469	$21,156	$21,137	$14,681	$2,973,946	24	28	430	64	1,159	22,182	467,050
Grand Total - 2009		**$5,850,008**	**$47,757**	**$0**	**$8,235**	**$29,107**	**$18,466**	**$29,006**	**$28,980**	**$20,128**	**$5,668,330**	**33**	**39**	**590**	**88**	**1,590**	**41,509**	**901,481**
2010	KEDNY Residential High Efficiency Heating and Water Heating and Controls	$5,103,967	$27,029	$0	$4,462	$15,770	$9,985	$15,900	$15,793	$11,073	$5,003,956	17	21	310	46	836	35,248	786,204
	KEDLI Residential High Efficiency Heating and Water Heating and	$4,403,138	$57,351	$0	$9,467	$33,461	$21,187	$33,737	$33,510	$23,496	$4,190,930	37	44	659	99	1,774	29,750	655,013
Grand Total - 2010		**$9,507,105**	**$84,379**	**$0**	**$13,928**	**$49,231**	**$31,171**	**$49,637**	**$49,303**	**$34,569**	**$9,194,886**	**54**	**64**	**969**	**145**	**2,611**	**64,998**	**1,441,217**
2011	KEDNY Residential High Efficiency Heating and Water Heating and Controls	$9,761,087	$53,643	$0	$8,540	$30,184	$19,293	$31,021	$30,678	$21,661	$9,566,067	32	38	577	86	1,554	65,515	1,461,299
	KEDLI Residential High Efficiency Heating and Water Heating and	$5,564,416	$75,172	$0	$11,967	$42,299	$27,037	$43,471	$42,991	$30,354	$5,291,126	45	53	809	121	2,178	36,519	804,052
Grand Total - 2011		**$15,325,503**	**$128,815**	**$0**	**$20,507**	**$72,483**	**$46,330**	**$74,491**	**$73,669**	**$52,015**	**$14,857,193**	**77**	**92**	**1,386**	**207**	**3,733**	**102,034**	**2,265,351**
2009 - 2011	KEDNY Residential High Efficiency Heating and Water Heating and Controls	$17,608,603	$93,595	$0	$15,230	$53,831	$34,276	$54,770	$54,314	$38,181	$17,264,407	58	69	1,047	157	2,821	120,090	2,681,934
	KEDLI Residential High Efficiency Heating and Water Heating and Controls	$13,074,012	$167,355	$0	$27,440	$96,989	$61,692	$98,364	$97,639	$68,531	$12,456,001	105	126	1,898	284	5,112	88,451	1,926,115
Grand Total - 2009 - 2011		**$30,682,615**	**$260,950**	**$0**	**$42,670**	**$150,820**	**$95,968**	**$153,134**	**$151,952**	**$106,712**	**$29,720,409**	**164**	**195**	**2,945**	**441**	**7,933**	**208,541**	**4,608,049**

ENERGY EFFICIENCY PROGRAMS

Budget shows activity in program year dollars, not present valued to 2009 dollars.

KEDNY Project Costs in 2009-2011

Residential High-Efficiency Heating and Water-Heating and Controls Program

Year	Program Planning and Administration	Program Marketing & Trade Ally	Customer Incentives or Services	Program Implementation	Evaluation & Market Research	Total Utility Cost	Particpant Cost	Total Cost
2009	$119,524	$486,100	$1,190,000	$100,000	$94,781	$1,990,405	$642,606	$2,633,011
2010	$204,075	$829,964	$2,031,800	$170,739	$161,829	$3,398,407	$1,232,913	$4,631,321
2011	$288,913	$1,174,995	$3,776,456	$241,719	$274,104	$5,756,187	$2,291,585	$8,047,772
2009-2011	$612,513	$2,491,059	$6,998,255	$512,458	$530,714	$11,145,000	$4,167,104	$15,312,104

KEDLI Project Costs in 2009-2011

Residential High-Efficiency Heating and Water-Heating and Controls Program

Year	Program Planning and Administration	Program Marketing & Trade Ally	Customer Incentives or Services	Program Implementation	Evaluation & Market Research	Total Utility Cost	Particpant Cost	Total Cost
2009	$94,351	$308,372	$1,190,000	$100,000	$84,636	$1,777,359	$319,338	$2,096,697
2010	$121,757	$397,947	$1,535,668	$129,048	$109,221	$2,293,641	$323,537	$2,617,178
2011	$150,177	$490,832	$2,494,108	$159,169	$164,714	$3,459,000	$397,153	$3,856,153
2009-2011	$366,285	$1,197,151	$5,219,776	$388,216	$358,571	$7,530,000	$1,040,028	$8,570,028

Combined KEDLI & KEDNY Project Costs in 2009-2011

Residential High-Efficiency Heating and Water-Heating and Controls Program

Year	Program Planning and Administration	Program Marketing & Trade Ally	Customer Incentives or Services	Program Implementation	Evaluation & Market Research	Total Utility Cost	Particpant Cost	Total Cost
2009	$213,875	$794,472	$2,380,000	$200,000	$179,417	$3,767,764	$961,944	$4,729,708
2010	$325,833	$1,227,911	$3,567,468	$299,787	$271,050	$5,692,049	$1,556,450	$7,248,499
2011	$439,090	$1,665,827	$6,270,564	$400,888	$438,818	$9,215,187	$2,688,739	$11,903,926
2009-2011	$978,798	$3,688,210	$12,218,031	$900,675	$889,286	$18,675,000	$5,207,133	$23,882,132

APPENDIX C

MASTER WORKSHEET WITH ALL PROGRAM INPUT ASSUMPTIONS

Input Assumptions Expedited Energy Efficiency Programs - National Grid
August 21, 2008

Program	Measure Name	Measure Life	Source of Measure Life	Incremental Cost	Source of Incremental Cost	Annual Savings Per Participant or Per Unit of Installation	Source of Annual Savings
Residential High-Efficiency Heating, Water-Heating, Controls Program	High Efficiency Gas Furnace (AFUE >= 92%)	18	The New England State Program Working Group Residential and Commercial/Industrial Measure Life Report for the ISO forward capacity market, June 2007.	$654	NYSERDA Deemed Savings Database	21.05 MMBTUs	NYSERDA Deemed Savings Database, 2006, based on 80 kBtu
Residential High-Efficiency Heating, Water-Heating, Controls Program	High Efficiency Gas Furnace (AFUE >= 92%) with ECM	18	Efficiency Vermont Technical Reference Manual, p. 39 April 2008 edition	$679	NYSERDA Deemed Savings Database	19.6 MMBTUs and 396 kWh	NYSERDA Deemed Savings Database, 2006, based on 80 kBtu
Residential High-Efficiency Heating, Water-Heating, Controls Program	Boilers, forced hot water 85%+ AFUE	25	NYSERDA Deemed Savings Database 2006	$984	NYSERDA Deemed Savings Database	8.94 MMBTUs	NYSERDA Deemed Savings Database 80%-85% AFUE
Residential High-Efficiency Heating, Water-Heating, Controls Program	Boilers, forced hot water 90%+ AFUE	25	NYSERDA Deemed Savings Database 2006	$1,310	Appliances and Commercial Equipment Standards, http://www.eere.energy.gov/buildings/appliance_standards/residential/furnace_boiler_draft_analysis.html. Inflated to 2009$	11.4 MMBTUs	91% AFUE data from Appliances and Commercial Equipment standards.
Residential High-Efficiency Heating, Water-Heating, Controls Program	High Efficiency Gas Steam Boiler	25	NYSERDA Deemed Savings Database 2006	$2,186	NYSERDA Deemed Savings Database	12.94 MMBTUs	NYSERDA Deemed Savings Database, 2006
Residential High-Efficiency Heating, Water-Heating, Controls Program	Indirect Water Heater	20	Gas Networks March 25, 2004 report titled "Benefit/Cost Screening Results for Regional Natural Gas Energy Efficiency Programs"	$300	Teleconference with GasNetworks on 3/2/2004	7.9 MMBTUs	Annual energy savings are from a RemRATE model run Analysis prepared by Bruce Bennett of GDS. See MS Word documentation prepared by GDS, dated 2-13-2004. This document is not currently available.
Residential High-Efficiency Heating, Water-Heating, Controls Program	Tankless Natural Gas Water Heater	20	Energy Star, High Efficiency Water Heaters Provide Hot Water for Less	$500	GDS Associates analysis for KeySpan Energy Delivery on tankless natural gas water heaters, December 22, 2004 (Excel worksheet documentation)	7.4 MMBTUs	GDS Associates analysis for KeySpan Energy Delivery on tankless natural gas water heaters, December 22, 2004 (Excel worksheet documentation)

APPENDIX D

Synapse
Energy Economics, Inc.

Niagara Mohawk Avoided Electricity and Natural Gas Costs

March 31, 2008

AUTHORS

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Table of Contents

1. Executive Summary

Background

National Grid retained Synapse Energy Economics (Synapse) and its subcontractors, Swanson Energy Group and Resource Insight, to prepare projections of retail electricity and natural gas costs that would be avoided due to reductions in retail consumption resulting from energy efficiency programs offered to customers of Niagara Mohawk (NIMO). These projections were developed in order to support energy efficiency program decision-making and regulatory filings during 2008.

This projection of retail avoided costs is an add-on to the analyses that this Synapse project team completed for the 2007 AESC Study Group. That project entailed the development of long-term projections of avoided retail electricity and natural gas costs for utilities in New England. The assumptions, methodology and results from that study are documented in *Avoided Energy Supply Costs in New England 2007 Final Report* ("AESC 2007")[1].

In this add-on project, the Synapse team developed estimates of these retail avoided costs for NIMO using essentially the same methodology as they used in the AESC 2007 project. The team drew upon materials from the AESC 2007 Study to the maximum extent possible and reasonable. It made changes to input assumptions where appropriate to reflect the market conditions in which Niagara Mohawk operates.

Due to the extremely limited time available to develop these projections, Synapse did not develop a forecast of wholesale electric energy prices in New York base upon its own simulation modeling. Instead Synapse started with the Reference Case forecast in the most recent long-term electricity and fuel price outlook[2] prepared by Global Energy Decisions (GED).[3] The Reference Case forecast is a 25-year outlook for the electric and fuel markets in the United States Northeast. It is based upon a comprehensive, independent analysis of market trends and detailed modeling of electric and fuels markets in that region. Synapse is providing the GED outlook to National Grid with this report.

Synapse chose the GED forecast as a starting point because it is a recent detailed projection of fuel and electric energy prices for the Northeast, including New York, prepared using an updated version of the same database as well as the same production simulation model as Synapse used in AESC 2007. Synapse developed a customized forecast of wholesale natural gas and electric energy prices for NIMO by adjusting the respective GED forecasts to reflect the Synapse team's outlook on certain key components.

The balance of the report is organized as follows:

Chapter 2 Projection of wholesale electric energy prices

Chapter 3 Projection of avoided retail electricity costs by costing period.

Chapter 4 Projection of avoided natural gas costs by retail end-use sector.

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[1] *Avoided Energy Supply Costs in New England 2007 Final Report,* August 2007 ("AESC 2007"). Available at: http://www.synapse-energy.com/Downloads/SynapseReport.2007-08.AESC.Avoided-Energy-Supply-Costs-2007.07-019.pdf

[2] ____, *Electricity & Fuel Price Outlook - Northeast Fall 2007,* Global Energy Decisions, Power Market Advisory Service, November 2007. Access to this intellectual property is restricted to parties that have directly licensed the report and parties that have signed a non-disclosure agreement (NDA) with Ventyx.

[3] Global Energy Decisions, a Ventyx Company.

A. Levelized Avoided Costs

The detailed, year by year, avoided costs of electricity and natural gas are presented later in this report. The twenty year (2008 – 2027) levelized values for these costs, in $2007, are summarized below. The levelized values were calculated at discount rate of 2.22%.

Avoided Electricity Costs

The levelized avoided costs of electric energy and capacity applicable to load reductions by NIMO retail customers over the next twenty years are shown in Table 1.

Table 1 - NIMO 20 Year Levelized Avoided Electricity Costs ($2007)					
Period	**Winter Peak**	**Winter Off-Peak**	**Summer Peak**	**Summer Off Peak**	**Capacity**
Units	**$/kwh**	**$/kwh**	**$/kwh**	**$/kwh**	**$/kw-yr**
Avoided Cost	**0.102**	**0.071**	**0.101**	**0.067**	**104.3**
CO_2 Externality	**0.035**	**0.029**	**0.034**	**0.028**	

This table also presents a projection of annual additional environmental costs associated with emissions of CO_2 related to electric energy consumption by NIMO customers. The estimates are equal to the cost of limiting CO_2 emissions to a "sustainability target" level, estimated to be a control cost of $60/ton, minus the forecast value of CO_2 allowances under the cap and trade regulations expected over the study period. We recommend that NIMO include CO_2 additional environmental costs in its analyses of DSM, unless specifically prohibited from doing so by state or local law or regulation.

Avoided Gas Costs

The levelized avoided costs of natural gas applicable to load reductions by NIMO retail customers over the next twenty years are shown in Table 2.

Table 2 - NIMO 20 Year Levelized Avoided Gas Costs ($2007/dT)							
Residential				**Commercial & Industrial**			**ALL**
Existing Heating	**New Heating**	**Hot Water**	**All**	**Non Heating**	**Heating**	**All**	**RETAIL**
Dec-Feb	Nov-Mar	annual	Nov-Apr	annual	Nov-Mar	Nov-Apr	Nov-Mar
12.54	12.39	11.70	12.18	10.11	10.80	10.59	11.54

2. Electric Energy Price Forecast

Niagara Mohawk (NIMO) customers acquire their wholesale electric energy from six zones within the New York wholesale market, i.e., NY-ISO Zones A through F. Synapse developed a forecast of the wholesale electric energy prices that NIMO would avoid as a result of reductions in retail customer consumption. We accomplished this in the following three major steps:

1. Review GED Reference Case forecast of wholesale electric energy prices by zone in New York, and all underlying assumptions;
2. Adjust GED Reference Case forecast prices to reflect our outlook regarding future natural gas prices and CO_2 compliance costs; and
3. Calculate NIMO load-weighted system-wide avoided wholesale electric energy costs.

The electric workpapers with these calculations are listed in Table 3. They are provided in a workbook titled *NIMO Avoided costs electric workpapers 2008 03 27.xls*.

Table 3 – Electric workpapers Supporting Avoided Retail Electric Energy Costs

Number	Name	Content
1	NY_AB MCPs	Zonal MCPs from GED Fall 2007 Northeast Reference Case Forecast
2	NY_CDE MCPs	
3	NY_F MCPs	
4	C6-NG NY ABC	GED zonal gas price forecast
5	C7-NG NY DEFG	
6	NY_AB Implied HR	Implied heat rates derived from GED MCPs and gas prices
7	NY_CDE Implied HR	
8	NY_F Implied HR	
9	HH Price Differential	Henry Hub natural gas price differential between GED and Synapse
10	C6-NG NY ABC Adjusted	Adjusted GED zonal gas price reflecting Synapse adjustment
11	C7-NG NY DEFG Adjusted	
12	CO2 Price Comparison	Comparison between GED and Synapse CO2 price forecasts
13	MarginalFuelData	Marginal fuel data from Market Analytics run of Northeast in 2008
14	MarginalFuelSummary	Marginal fuel by time period and zone
15	Emissions by Fuel	Emission rates by fuel type
16	CO2 Adjustments	Calculation of Synapse adjustment to GED energy price for CO2
17	Load Shape Price Ratios	Ratios of NIMO Load weighted Prices by period to NY ISO Prices by period, 2007 Data
18	NY_AB MCPs Adjusted	Zonal MCPs after Synapse adjustments
19	NY_CDE MCPs Adjusted	
20	NY_F MCPs Adjusted	
21	NIMO Hourly Zonal Load Data	
22	Final MCPs	NIMO System load-weighted MCPS and Zonal MCPs by costing period
23	Inputs and Carbon Externality	Capacity Losses and Calculation of CO2 Externalities
24	**Capacity Prices**	**Forecast of Capacity prices**
25	**ICAP data**	**ICAP data - input to Capacity price forecast**
26	**Losses**	**Estimation of losses from generator to end use**

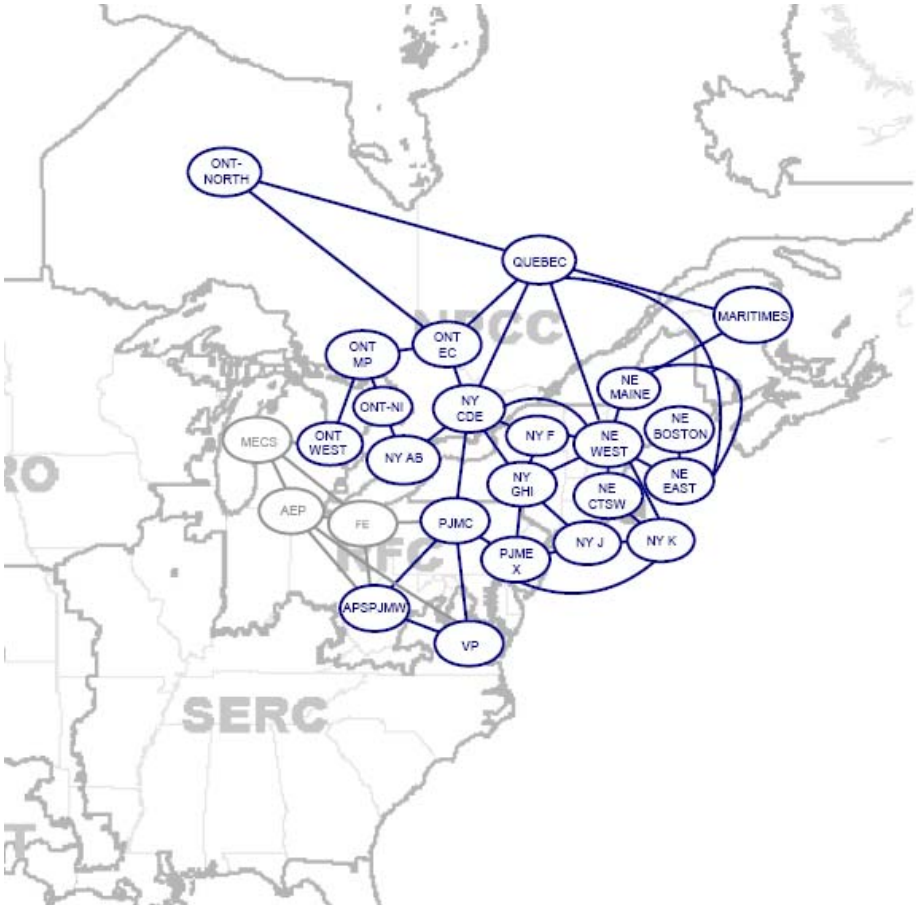
A. GED Forecast of Wholesale Electric Energy Prices

Synapse began with the Reference Case forecast of wholesale electric energy prices from GED. That forecast provides average monthly prices for peak and off-peak periods by zone in each of the wholesale electric energy markets in the Northeast. Peak period hours are 7 a.m. to 11 p.m. Monday through Friday, except for specified holidays. All other hours are off-peak.

Global Energy Decisions employs their MarketSym forecasting model to simulate the operations of those electric markets. MarketSym is a security-constrained, chronological, economic dispatch model that simulates the regional electric system on an hourly basis. The model utilizes an extensive database with detailed information for generator costs and operational constraints, transmission interfaces and constraints, customer loads, regional ancillary service requirements, and market bidding behavior.

The topology used in the Reference Forecast is shown in Figure 1.

Figure 1. Northeast Market Configuration for GED Reference Case Forecast.



Source: Global Energy Decisions

The GED forecast for New York provides average electric energy prices for peak and off-peak periods by month. These prices are provided for an aggregation of Zones A and B, i.e., “Zone AB”, for an aggregation of Zones C, D, and E, i.e., ”Zone CDE”, and for Zone F. They are reported in electric workpapers 1, 2 and 3 respectively. The GED forecasts of wholesale gas price forecasts for the corresponding time periods and zones are presented in electric workpapers 4 and 5.

B. Adjust GED forecast of electric energy prices for Synapse outlook regarding future natural gas prices and CO_2 compliance costs.

Our second step was to adjust the GED forecast of electric energy prices to reflect our outlook regarding the future prices of natural gas and the costs of complying with future CO_2 regulation. Our review of the GED report found that we agree with most of the assumptions underlying its forecast of wholesale electric energy prices. However, our review indicates that GED has under-estimated natural gas prices at the Henry Hub in the near-term and has also under-estimated the future costs of complying with CO_2 regulation.

We adjust the GED forecast of electric energy prices by, in effect, calculating electric energy price "adders" that reflect the impacts of those differentials in forecast prices of natural gas and CO_2 respectively. For example, the adjustment for natural gas equals the differential in gas prices ($/MMBtu) multiplied by the implied heat rate for generating electricity from natural gas (MMBtu/MWh) multiplied by the percentage of time that natural gas is the marginal source of generation and thus setting the electric market price.

Analyze GED forecast to determine implied heat rates and percentage of time gas is the marginal source of generation

We began by analyzing the GED forecast to determine implied heat rates and the percentage of time gas is the marginal source of generation. We need those factors in order to

Implied heat rate is a measure of the efficiency at which a gas-fired unit produces electricity from natural gas. The implied heat rate in a zone for a given time period is the electric energy price forecast in that zone for that period in $/MWh divided by the natural gas price forecast in that zone for that period in $/MMBtu. The result is an implied heat rate, i.e. the quantity of MMBtu required to produce each MWh. We determined the implied heat rates in the GED forecast for the peak and off-peak periods in each month for Zone AB, Zone CDE and Zone F. These calculations use the GED forecasts of electric energy prices and wholesale gas prices for the corresponding zones and time periods. The results of those calculations are presented in electric workpapers 6, 7 and 8 respectively.

Differential in Outlook regarding Natural Gas Prices

The GED forecasts of wholesale gas prices for zones in New York consists of a forecast of gas prices at the Henry Hub and a forecast of the "basis" differential to those zones[4]. Our review of the GED forecast of wholesale natural gas prices for New York indicates that its corrected forecast of basis differential is reasonable but its forecast of Henry Hub prices are too low in the near-term.

The forecasts of "basis" differentials, implicit in GED's forecasts of wholesale gas prices in the New York zones, are reasonable. We did discover an error in the basis differential underlying GED's forecast of wholesale gas prices for New York zones ABC, which we brought it to GED's attention. GED corrected the error and provided a revised gas price forecast for those zones as well as a corresponding revised electric energy price forecast for those zones in those years.

[4] Henry Hub, located in Louisiana, is in the heart of the dominant producing region of the United States. It is the most liquid trading hub with the longest history of public trading on the New York Mercantile Exchange ("NYMEX"). Market prices of gas produced and sold elsewhere in North America reflect Henry Hub prices with an adjustment for their location, which is referred to as a basis differential. Basis differential for a given time period is the difference between the wholesale price of natural gas at a particular location and the price at the Henry Hub.

GED's forecast of gas prices at the Henry Hub for the years 2008 through 2013 are less than the NYMEX futures prices for those years, as of February 27, 2008. That differential is approximately $1 per million BTU (MMBTU). It is our view that the avoided gas and electric costs should be based upon the NYMMEX prices for Henry Hub as of the time our forecast is being prepared, because those prices reflect the most recent collective view of gas buyers and sellers. A comparison of those Henry Hub prices, as well as the differential by month, is presented in gas workpaper 6 and electric workpaper 9. Our adjusted forecasts of wholesale gas prices for the New York zones are presented in electric workpapers 10 and 11.

Differential in Outlook regarding CO_2 Allowance Prices

The Reference Case forecast of electric energy prices reflects the GED forecast of CO_2 emission allowance prices in the Northeast. GED assumes that the Regional Greenhouse Gas Initiative (RGGI) will be in effect from 2009 through 2011 and that national caps on greenhouse gas (GHG) emissions will go into effect in 2012. The GED report discusses these GHG regulatory initiatives on pages 1-13 to 1-16 and presents its forecast of CO_2 allowance prices in the Northeast on pages 2-9 and 4-22.

Synapse agrees with the GED assumption that RGGI will be in effect from 2009 through 2011 and that national caps will go into effect in 2012. In addition, the CO_2 allowance prices we are assuming under RGGI[5] are very close to the GED forecasts for those years. However, we believe the GED forecast of CO_2 allowance prices from 2012 onward, under a national cap on CO2, is too low. This position is based upon our review of numerous studies of the costs of complying with the range of national regulations under consideration, as well as our review of CO_2 allowance prices being used for long-term planning in various jurisdictions.

Our review of the range of national GHG regulations under consideration in Congress, and of various studies of the costs of complying with those regulations, is presented in *Climate Change and Power: Carbon Dioxide Emissions Costs and Electricity Resource Planning (*"Synapse CO_2 price report"). [6] That report, released in June 2006 and updated in March 2007, forecasts CO_2 allowance prices under a base or "mid" case as well as under low and high cases. In addition to preparing that report we have reviewed and/or provided forecasts of CO_2 allowance prices in projects involving long-term electricity planning in various jurisdictions including New England, Nova Scotia and New Mexico as well as a review of CO_2 regulation in the several countries prepared for Dow.

Based upon that direct experience, and our CO_2 price report, we believe the avoided cost of electric energy in New York should reflect our mid case forecast of CO_2 prices, rather than the low case reflected in the GED forecast. The GED and Synapse forecasts of CO_2 allowance prices, and the differentials, are presented in electric workpaper 12 and summarized below in Table 4.

[5] Drawn from IPM modeling results in *RGGI Package Scenario (Updated October 11, 2006)*. Available at http://www.rggi.org/docs/packagescenario_10_11_06.xls.

[6] Full report available at http://www.synapse-energy.com

Table 4. CO_2 Allowance Price Forecasts - GED and Synapse (2007$/short ton of CO2)

Year	GED	Synapse	Differential
2008	0.00	0.00	0.00
2009	2.11	2.21	0.10
2010	2.29	2.37	0.08
2011	2.46	2.53	0.07
2012	2.64	9.46	6.82
2013	2.94	11.56	8.62
2014	3.28	13.66	10.38
2015	3.64	15.76	12.12
2016	4.05	17.86	13.81
2017	4.50	19.96	15.46
2018	5.00	22.06	17.06
2019	5.55	24.16	18.61
2020	6.15	26.27	20.12
2021	6.82	27.32	20.50
2022	7.56	28.37	20.81
2023	8.38	29.42	21.04
2024	9.28	30.47	21.19
2025	10.28	31.52	21.24
2026	11.38	32.57	21.19
2027	12.59	33.62	21.03
2028	13.93	34.67	20.74
2029	15.40	35.72	20.32
2030	17.02	36.77	19.75
2031	18.32	36.77	18.45
2032	19.83	36.77	16.94

In order to adjust the GED forecast of energy prices for this differential in CO_2 costs we needed to identify the rate (i.e., tons per MWh) at which CO_2 would be emitted by generation of each fuel type. To do this we first estimated the percent of time generation from each fuel type would be on the margin in 2008. That analysis is presented in electric workpapers 13 and 14. We assumed that those percentages would be representative of future years. Next, we developed emission rates for generation from each fuel type based on the average heat rate for each fuel type in the on-peak and off-peak periods and the carbon content of each fuel type. Those calculations are presented in electric workpaper 15. The adjustment for the differential in CO_2 allowance prices is the marginal emission rates of CO_2 (short tons CO_2/MWh) by costing period and zone multiplied by the CO_2 allowance price differential. Those calculations are presented in electric workpaper 16.

Adjusted Forecasts of Wholesale Electric Energy Prices

We then determined the amount ($/MWH) by which the GED forecast of electric energy prices in each costing period had to be adjusted for the differential in gas price forecasts and for the differential in CO_2 allowance prices. Those calculations are presented in electric workpapers 18 to 20 respectively.

The adjustment for the differential in gas price forecasts in each costing period is essentially equal to the implied heat rate for each period multiplied by the differential in Henry Hub price forecasts in the

corresponding period. The adjustment for the differential in CO_2 allowance prices is added to our gas price adjusted forecast of electric energy prices.

C. Calculate NIMO load-weighted system-wide avoided wholesale electric energy costs.

In our third step we developed NIMO load-weighted system-wide avoided wholesale electric energy costs. To do this we first calculated NIMO load-weighted electric energy prices by costing period for the six zones in order to reflect the shape of NIMO's load in each of those zones. We then calculated NIMO system-wide wholesale avoided electric energy costs from the results by zone.

NIMO load-weighted electric energy prices by costing period.

The forecast of electric energy market prices by costing period represents a simple average of hourly market prices during the period, in essence a flat load shape. In contrast, NIMO customer load varies by hour. To determine an accurate estimate of the price of electric energy that NIMO could avoid in a given period, we wish to calculate a NIMO load-weighted energy price for each period from the forecast of market prices for the period. The key input to that calculation is factor by which we must adjust our forecast of electric energy market prices by costing period, i.e. peak and off-peak, to reflect the shape of NIMO's hourly load. We refer to that factor as a "load shape price ratio".

We developed NIMO load shape price ratios for each on-peak and off-peak period. We developed these based upon a review of the historical relationship between average electric energy market prices in each period and the corresponding NIMO load-weighted average price in the corresponding period. The historical data was from 2007, NIMO MW loads in each hour of 2007 for each zone, and actual LMPs for the corresponding hours and zones from the day-ahead market. We obtained the hourly loads from NIMO and the hourly LMPS from the NY-ISO web site.

We calculated a "load shape price ratio" for each on-peak and off-peak period of each month for each of the three sets of GED energy price forecasts, i.e., Zone F, Zone aggregation CDE and Zone aggregation AB. The load shape price ratio for a given period and zone is essentially the NIMO load-weighted average hourly price for that period divided by the average hourly price for that period.

Mathematically this can be expressed as:

$$\text{load - shape price ratio zone Z} = \frac{\left[\dfrac{\sum_{\text{hrs in period}} MW_{z,hr} \times DA\ LMP_{z,hr}}{\sum_{hrs} MW_{z,hr}}\right]}{\left[\dfrac{\sum_{hrs} DA\ LMP_{z,hr}}{\text{hours in period}}\right]}$$

For the GED forecasts prices for aggregate NYISO zones, i.e. AB and CDE, we calculated the load-shape price ratio for a given period by determining the average hourly price for that period weighted by NIMO hourly load in that aggregation of zones and dividing by the hourly market price weighted by the

NY-ISO load (MW) for the full aggregated zone for that period. Thus, the price in each NIMO zone (n) is weighted by relevant NIMO load (MWN) in the numerator and the relevant NY-ISO load (MWI) in the denominator.

Mathematically, that numerator can be expressed as,

$$\text{NiMo load} - \text{wtd price for GED zone} = \frac{\sum_{\text{n, hrs}} MWN_{n,hr} \times DA\,LMP_{n,hr}}{\sum_{hrs} MWN_{n,hr}}$$

and the denominator as

$$\text{Flat GED zone price, load - weighted across NYISO zones} = \frac{\sum_{hrs} \frac{\sum_{\text{ISO zones}} MWI_{n,hr} \times \text{DA LMP}_{\text{n,hr}}}{\sum_{\text{ISO zones}} MWI_{n,hr}}}{\text{number of hours in period}}$$

The calculations of load-shape price ratios are presented in electric workpaper 17.

We developed our estimates of NIMO load-weighted prices in each period by multiplying the relevant load-shape price ratio times the corresponding forecast of market electric energy prices. Those calculations are presented in electric workpapers18 to 20 respectively.

D. Calculate NIMO system-wide wholesale avoided electric energy costs

In our final step we develop NIMO system-wide avoided electric prices by costing period. These system-wide prices are the NIMO load-weighted prices for each of the three zones (NY-AB, NY-CDE, and NY-F) weighted by the corresponding percentage of total NIMO service territory load in each of those zones.

The percentage of total NIMO service territory load in each zone is calculated in electric workpaper 21. The calculation of NIMO system-wide avoided electric prices is presented in electric workpaper 22.

3. Avoided Retail Electricity Supply Costs

This chapter provides a projection of avoided retail electricity costs and a description of the underlying assumptions. These avoided retail electricity supply costs were developed from

- our projections of NIMO system-wide load-weighted avoided electric energy costs,
- avoided capacity costs,
- adjustments for losses from the point of generation to the point of use, and
- a retail adder, reflecting the risks and costs related to power procurement.

In addition we calculated an estimate of environmental externalities based upon the costs of CO_2 not reflected in the forecast of electric energy prices.

These avoided electricity supply costs do not include various components of wholesale power costs that we consider to be largely or entirely unavoidable through energy efficiency. These components include the locational forward reserve market, real-time operating reserves, automatic generation control (also called regulation), uplift, and the reliability contracts with particular generators.

The avoided electricity supply costs also do not include a renewable energy credit (REC) component. NYSERDA is essentially purchasing a pre-determined quantity of RECs through 2013 and allocating those costs to essentially all New York ratepayers for recovery. If NIMO customers reduced their energy usage they would be allocated a lower amount of those costs, and thereby avoid them, but the costs not allocated to NIMO would just be shifted to the remaining ratepayers in New York. The state of New York would not avoid those renewable costs.

A. Capacity Prices

The NY-ISO capacity prices are set by a series of auctions:

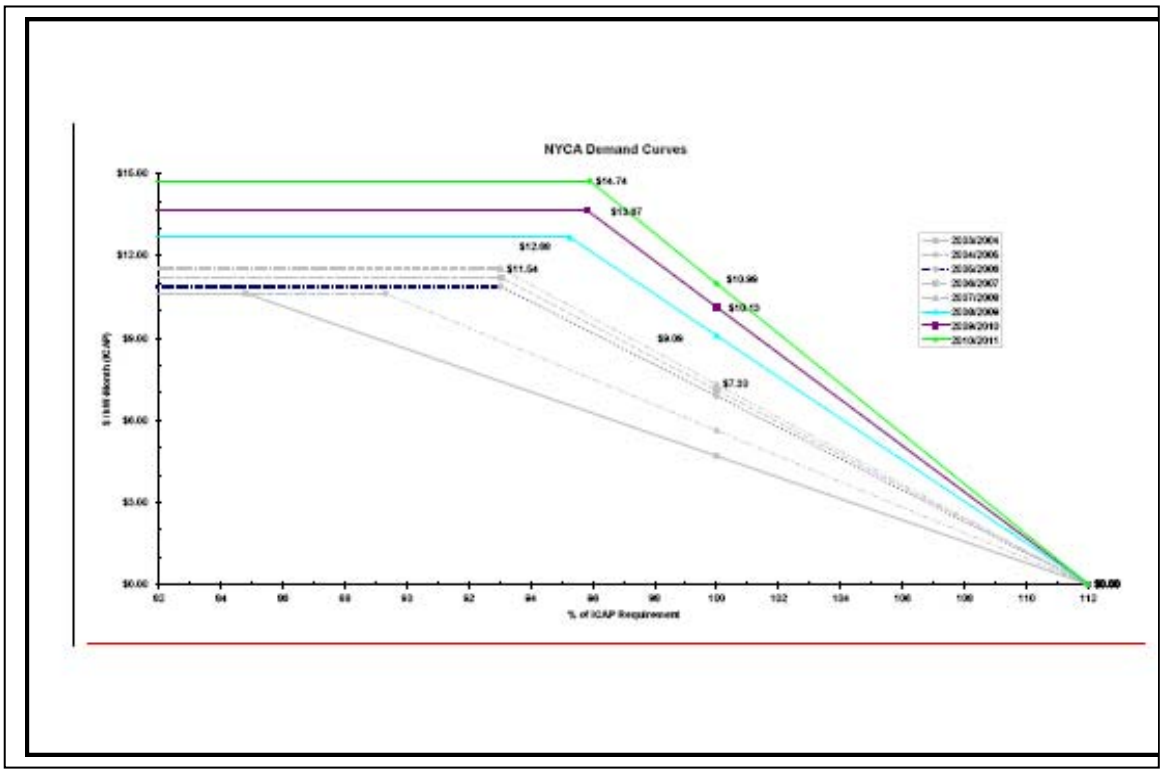
- A six-month strip acquired in April for the summer (May-October) and in October for the winter (November–April).
- Auctions for each month, from the month prior to the start of the season to the month prior to the delivery month.[7]
- A spot auction for each month, conducted in the preceding month.

The price in the spot auction is set by the demand curve, which reduces the capacity price as the reserve margin rises. Load-serving entities must provide capacity throughout the year, based on their contribution to the previous summer's peak (adjusted for migration) plus the reserve margin implied by the spot auction.

In Figure 2 we present a series of demand curves for the New York Control Area (NYCA). These curves are drawn from *Proposed NYISO Installed Capacity Demand Curves For Capability Years 2008/2009, 2009/2010 and 2010/2011*, issued by the NY ISO and dated October 5, 2007.

[7] So there is only one monthly auction for May and November capacity, while there are six for October and April.

Figure 2



NIMO's service territory is entirely in the rest-of-state (ROS) capacity zone, which is the entire state other than New York City and Long Island.

In principle, knowing the current demand-curve parameters, the proposed parameters for the next three-year period (2008–2011) and forecasted loads and additions, we should be able to forecast the ROS capacity price. As the statewide reserve margin declines, the capacity price should rise until it is high enough to support new entry, and then bounce around that price as generation is added, plants are retired, load grows, etc.

This simple picture is complicated by a number of factors:

- The demand curve for ROS capacity uses total New York Control Area (NYCA) load and capacity, so addition of capacity downstate can affect prices upstate. Con Edison, NYPA and LIPA have all built and contracted for generation capacity and transmission connections that the market did not provide, and NYPA and LIPA continue to pursue capacity additions.
- A new capacity-price mitigation scheme has been accepted by FERC, which would require the pivotal in-City generators to bid at lower prices, likely resulting in more capacity clearing in New York City.

- It is not clear how much capacity LIPA will bring into NYCA, and whether that capacity will continue to depress ROS capacity prices.
- Generators outside New York (in PJM, New England, Ontario, and Quebec) can export capacity to the ROS market, while New York generators can export capacity to PJM and New England. NYISO does not appear to report the amount of imports that clear in the capacity auctions, or the amount of capacity withdrawn from the NYISO market for export.

Recent ROS capacity prices have been somewhat less than would be implied by the demand curve with only the capacity in NYCA and net firm contract imports, suggesting that NYISO has been a net purchaser of capacity. This situation appears to be changing, as capacity prices rise in the new forward markets in both PJM and ISO-NE.[8] For 2007–2008, ROS capacity prices were about $30/kW-yr, while the capacity price in neighboring portions of PJM was under $15/kW-yr and in ISO-NE the capacity price was $36.60.

The reserve margin required by NYISO depends on the quantity of capacity included in the determination of the capacity price under the demand curve. The difference between winter and summer capacity also increases the average reserve margin over the year. In 2007 the effective reserve margin, the capacity charge to load divided by the capacity payment to generation, both in $/kW-yr, is 17.2%. Under the current demand curves, the ISO's target (or "reference") annual UCAP price of $92.20/kW-yr would be reached with an effective reserve margin of about 10.8%. That reference price is based on an estimate of the cost of new entry in 2015, by which time New York is expected to need of new capacity.[9] The capacity price that would be charged to load is the reference price increased by the reserve margin, i.e., $92.20×1.108, or $102.15/kW-yr.

Our forecast of capacity prices charged to load, i.e. increased for reserves, expressed in $2007, is a linear interpolation of capacity prices in ROS, staring from the actual price in 2007 ($35.19 per kw-yr) and ending with the ROS reference price in 2015 ($102.15 per kw-yr). After 2015 we hold the price constant.

Table 5 compares actual capacity prices for PJM and ISO-NE to our projection. The actual capacity prices are UCAP capacity prices for PJM, ISO-NE and the average of those two prices in constant 2007$, with no gross up for reserve margins. Our projection appears reasonable relative to the prices in those neighboring markets.

[8] In the February 2008 ISO-NE forward capacity auction, 641 MW of New York capacity was accepted.

[9] The 2008–2011 demand curves increase the ROS reference price by about 25%.

Table 5 – Capacity Prices ($/kw-yr)				
Year beginning	**PJM nominal**	**ISO-NE nominal**	**Average of PJM and ISO-NE (2007$)**	**Projection (2007$)**
	Do not reflect reserve margin			Do reflect reserve margin
2007				$35.19
2008	$38.7	$44.3	$41.5	$43.56
2009	$67.4	$48.9	$58.1	$51.93
2010	$64.1	$50.9	$57.5	$60.30
2011				$68.67
2012				$77.04
2013				$85.41
2014				$93.78
2015				$102.15

The calculation of NIMO capacity costs is presented in electric workpapers 24 and 25.

B. Losses

There is a loss of electricity between the generating unit and the ISO's delivery points, where power is delivered from the ISO-administered pool transmission facilities (PTF) to NIMO's local transmission and distribution systems. There are also losses on the NIMO system. Therefore, a 1 kilowatt load reduction by a customer at the point of end use reduces the quantity of electricity that a generator has to produce by 1 kilowatt plus the additional quantity it would have had to generate to compensate for losses.[10]

We calculated full losses from generator to end use at peak. We add those losses to the capacity price, which is stated in dollars per kilowatt-year at the generator, to obtain an avoided capacity cost at point of end-use. We also calculate losses from the transmission system to end use by energy pricing period. We add those losses to the energy prices, which are stated in $/MWh at the ISO delivery point, to obtain avoided energy prices at point of end-use. (The energy prices forecast by GED reflect the losses between the generating unit and the ISO delivery points into the NIMO system.)

For calculating the avoided cost of capacity we use average losses from the generator to the end use. For calculating the avoided cost of energy we use marginal losses from the ISO delivery point to the end use.

Derivation of losses from generator to end use in peak hour

We assumed average losses at the peak hour of 14%, from generator to end use, based on our experience with studies of losses at other utilities. We broke this estimate between losses on the NY-ISO system and losses on the NIMO distribution system.

[10] Computations of avoided costs sometimes assume that only average, and not marginal, losses are relevant at the peak hour. The reasoning for that approach is that changes in peak load will lead to changes in transmission and distribution investment, keeping average percentage losses approximately equal. The NIMO avoided costs do not include any avoided PTF investments, so marginal losses are relevant in this situation.

From a NYISO load-forecast report[11], transmission losses at peak in the NGrid transmission district[12] are 5% of load. The statewide average transmission losses are 1.9%. Since some of the losses in the NGrid district result from power flowing to other districts, we use an average of the losses in the NGrid district and the statewide average. This is 3.5%, i.e., 50% of (5+ 1.9).

Losses between transmission and point of end use at peak would thus be 10.2% (1.14 ÷ 1.035 – 1.00).

Of that 10.2%, we assumed losses of 1% of the peak load were fixed transformer-core losses, which do not vary with load, and the remaining 9.2% were variable.

Derivation of losses from ISO Delivery Point to end use

We computed the average percentage losses for each of the four energy costing periods from the 10.2% identified above. as the sum of fixed and variable losses.

- Fixed losses, estimated as the 1% of peak load, restated as a percentage of period load by dividing by period load factor.
- Variable losses, estimated as the 9.2% rate at peak multiplied by the load factor for the relevant period[13].

The resulting average loss factors are presented in Table 6.

Table 6 Loss Factors

Period	Load Factor	Average Losses			Marginal Losses Used To Calculate Retail Avoided Costs
		Variable	Fixed	Total	
W – Off Peak	57%	5.2%	1.8%	7.0%	**10.4%**
W – On Peak	70%	6.4%	1.4%	7.9%	**12.9%**
S – Off Peak	54%	4.9%	1.9%	6.8%	**9.9%**
S – On Peak	70%	6.4%	1.4%	7.9%	**12.9%**

Across periods, these energy losses average 7.4%, which is a reasonable value. NIMO's metered losses may be lower than this, since the 7.4% includes losses on the customer side of the meter

Since losses vary with the square of load, marginal percentage energy losses in any period are about twice average variable losses.[14] The average losses reported above translate into marginal energy

[11] 2007 Weather Normalization, Load Forecasting Task Force, December 18, 2007, Arthur Maniaci, System & Resource Planning, New York ISO.

[12] NIMO is served by the NGRID transmission district, which includes parts of zones A-F. NY-ISO transmission districts and energy-pricing zones overlap

[13] Variable losses in Watts vary roughly as the square of load, since the power dissipated in the lines varies with the square of current. Thus percentage losses (loss ÷ load) varies roughly linearly with load from the equation $W= I^2R$, where W is the energy released, I is the current and R is the resistance.

[14] The derivative of the losses is $dW/dI = 2IR$, while the average losses are $I^2R \div I = IR$.

losses of 12.9% on-peak, both summer and winter, 10.4% in the winter off-peak, and 9.9% in the summer off-peak.

The results would be somewhat higher for an analysis that reflected the higher losses at high-load hours within each period, which produces a higher average percentage loss than in the average-load hour. However, since the analysis started with a generic estimate of losses at peak, the greater detail of an hourly analysis did not seem warranted.

The calculation of losses applicable to NIMO is presented in electric workpaper 26.

C. Retail Adder

Retail electricity prices are generally higher than the sum of wholesale energy and capacity prices during the time period in which the electricity is being consumed. This differential is not fully explained by the costs of ancillary service, uplift, and load shapes. The primary factor underlying the retail adder appears to be costs suppliers incur to mitigate their risk of under-recovering their costs. These risks arise from the potential for their supply costs to exceed their revenues, i.e., under contracts in which suppliers do not have a "true-up" provision or adjustment to ensure that their revenues equal their costs. The potential for supply costs to exceed revenues arises due to factors such as unexpected variations in weather, economic activity and and/or customer migration. For example, during hot summers and cold winters LSEs may need to procure additional energy at shortage prices while in mild weather they may have excess supply under contract that they need to "dump" into the wholesale market at a loss. The same pattern holds in economic boom and bust cycles. In addition, the suppliers of power for utility standard-service offers run risks related to migration of customer load from utility service to competitive supply (presumably at times of low market prices, leaving the supplier to sell surplus into a weak market at a loss) and from competitive supply to the utility service (at times of high market prices, forcing the supplier to purchase additional power in a high-cost market).

NIMO did not provide public information on the retail adders implicit in the prices bid by their suppliers. In the absence of any detailed information on the strategy that NIMO employs to acquire supply we propose a 5% retail adder be applied to wholesale electric energy costs to calculate retail avoided electric energy costs. This is a conservative estimate, as our analyses of confidential supplier bids in other projects indicate that a 10% retail adder is common.

D. CO_2 Externalities

Externalities are impacts from the production of a good or service that are neither reflected in the price of that good or service nor considered in the decision to provide that good or service. There are many externalities associated with the production of electricity, including the adverse impacts of emissions of SO2, mercury, particulates, NOx and CO_2. However, the magnitude of most of those externalities has been reduced over time, as regulations limiting emission levels have forced suppliers and buyers to consider at least a portion of their adverse impacts in their production and use decisions. In other words, a portion of the costs of the adverse impact of most of these externalities has already been "internalized" in the price of electricity.

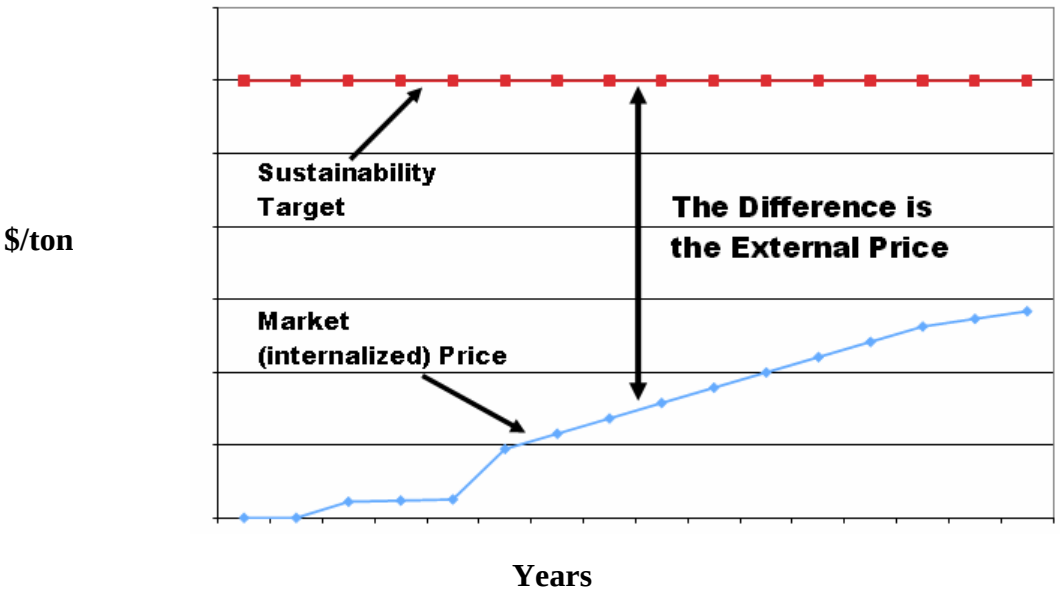
AESC 2007 identified the impacts of carbon dioxide as the dominant externality associated with marginal electricity generation in New England over the study period for two main reasons. First, policy makers are just starting to develop and implement regulations that will "internalize" the costs

associated with the impacts of carbon dioxide from electricity production and other energy uses. The Regional Greenhouse Gas Initiative and anticipated future federal CO_2 regulations will internalize a portion of the "greenhouse gas externality," but AESC 2007 projects that the externality value of CO_2 will still be high even with those regulations. Second, New England avoided electric energy costs over the study period are likely to be dominated by natural gas-fired generation, which has minimal emissions of SO2, mercury, particulates and NOX, but substantial emissions of CO_2.

CO_2 allowance costs are not expected to reflect the full societal costs associated with CO_2 emissions. In this report we use a compliance cost of $60/ton of CO_2 (2007$) to reflect the full societal costs associated with those emissions. That value is drawn from an analysis of externalities we prepared for AESC 2007 which identified a target level of physical CO_2 emissions that climate scientists have identified as potentially sustainable as well as the cost of complying with that target level. The analysis from AESC 2007 is presented in Appendix A.

Figure 3 illustrates this CO_2 externality. The blue line presents the forecast of allowance prices reflected in electric energy market prices. This assumes that the United States will gradually move to reflect a portion of the impact of greenhouse gas emissions in market prices. The "externality" is the difference between the estimated total cost of achieving a sustainability target, $60/ton, and the portion reflected in market prices. This is the area between the blue line and the redline in the figure.

Figure 3. Determination of Externalities based on CO_2 Emission Costs



The calculation of the CO_2 externality applicable to NIMO is presented in electric workpaper 23.

E. Avoided Retail Electricity Costs

Retail avoided costs of electricity consist of avoided energy costs ($/kwh) and avoided capacity costs ($/kw-yr).

- Avoided retail energy costs are presented by year for four energy costing periods – Winter Peak, Winter Off-Peak, Summer Peak, and Summer Off-Peak. The avoided energy cost for a

specific costing period is the avoided wholesale energy cost for that period increased by the retail adder and marginal line losses on the distribution system[15].

- Avoided retail capacity costs are presented for each year. The avoided capacity cost in each year is the avoided wholesale capacity market value for that year increased by the retail adder and line losses from generation to the point of end-use.

The detailed avoided retail electricity costs are presented in Table 7. The supporting calculations are presented in the *NIMO avoided electric costs* worksheet in *NIMO Avoided costs electric workpapers 2008 03 27.xls*.

Synapse also calculated environmental externalities based upon CO_2 emissions and allowance costs. The wholesale externality values are presented by year for the four energy costing periods. (The retail values would be wholesale value increased by marginal line losses on the distribution system).

[15] Avoided wholesale energy costs through 2032 are derived directly from the GED forecast as adjusted by Synapse. Values for 2033 through 2037 are derived from the 2032 value increased by the average rate of escalation of the prior ten years.

TABLE 7

Utility | **Niagara Mohawk**

Constant Dollar Avoided Cost Results - $2007

Formatted for input to DSM screening models

Retail Adder	5%
Real Discount Rate	2.22%
Capacity Losses: Generation to ISO Delivery	3.5%
Peak losses: ISO to end use	10.2%

	Avoided Retail Costs, Constant Dollars					Wholesale Power Price, Constant Dollars								
	Niagara Mohawk					CO2 Related Costs NOT REFLECTED IN WHOLESALE POWER PRICES (see note below)				Wholesale Avoided Costs (i.e.before Adjustments for Losses and Retail margin)				
	Winter Peak Energy	Winter Off-Peak Energy	Summer Peak Energy	Summer Off-Peak Energy	Annual Market Capacity Value	Winter Peak Energy	Winter Off-Peak Energy	Summer Peak Energy	Summer Off-Peak Energy	Winter Peak Energy	Winter Off-Peak Energy	Summer Peak Energy	Summer Off-Peak Energy	Annual Market Capacity Value
Units:	$/kWh	$/kWh	$/kWh	$/kWh	$/kW-yr	$/kWh	$/kWh	$/kWh	$/kWh	$/kWh	$/kWh	$/kWh	$/kWh	$/kW-yr
2008	0.103	0.064	0.110	0.065	48.8	0.050	0.041	0.048	0.040	0.087	0.055	0.093	0.056	40.8
2009	0.110	0.067	0.100	0.060	58.8	0.048	0.040	0.047	0.038	0.093	0.057	0.084	0.052	49.1
2010	0.097	0.062	0.091	0.056	68.8	0.048	0.040	0.047	0.038	0.082	0.053	0.076	0.049	57.5
2011	0.091	0.061	0.089	0.057	78.9	0.048	0.039	0.046	0.038	0.077	0.053	0.075	0.049	65.9
2012	0.093	0.066	0.092	0.062	88.9	0.042	0.035	0.041	0.034	0.079	0.057	0.078	0.054	74.3
2013	0.092	0.064	0.091	0.062	98.9	0.041	0.033	0.039	0.032	0.078	0.055	0.077	0.054	82.6
2014	0.085	0.061	0.083	0.057	108.9	0.039	0.032	0.037	0.031	0.072	0.053	0.070	0.050	91.0
2015	0.096	0.066	0.096	0.061	118.9	0.037	0.030	0.036	0.029	0.081	0.057	0.081	0.053	99.4
2016	0.101	0.068	0.100	0.064	122.3	0.035	0.029	0.034	0.028	0.085	0.059	0.085	0.055	102.2
2017	0.102	0.071	0.103	0.067	122.3	0.034	0.027	0.032	0.027	0.086	0.061	0.087	0.058	102.2
2018	0.103	0.071	0.102	0.068	122.3	0.032	0.026	0.031	0.025	0.087	0.062	0.086	0.059	102.2
2019	0.103	0.073	0.103	0.069	122.3	0.030	0.025	0.029	0.024	0.087	0.063	0.087	0.060	102.2
2020	0.099	0.072	0.100	0.069	122.3	0.028	0.023	0.027	0.022	0.083	0.062	0.084	0.059	102.2
2021	0.106	0.074	0.107	0.071	122.3	0.027	0.022	0.026	0.022	0.090	0.064	0.091	0.062	102.2
2022	0.109	0.078	0.108	0.073	122.3	0.027	0.022	0.026	0.021	0.092	0.067	0.091	0.064	102.2
2023	0.111	0.080	0.110	0.075	122.3	0.026	0.021	0.025	0.020	0.094	0.069	0.093	0.065	102.2
2024	0.113	0.081	0.112	0.077	122.3	0.025	0.020	0.024	0.020	0.095	0.070	0.095	0.066	102.2
2025	0.115	0.083	0.114	0.078	122.3	0.024	0.020	0.023	0.019	0.097	0.072	0.096	0.068	102.2
2026	0.117	0.085	0.116	0.080	122.3	0.023	0.019	0.022	0.018	0.098	0.073	0.098	0.069	102.2
2027	0.118	0.086	0.118	0.081	122.3	0.022	0.018	0.021	0.018	0.100	0.074	0.100	0.070	102.2
2028	0.120	0.088	0.120	0.083	122.3	0.021	0.017	0.020	0.017	0.101	0.076	0.101	0.072	102.2
2029	0.122	0.090	0.122	0.084	122.3	0.020	0.017	0.020	0.016	0.103	0.077	0.103	0.073	102.2
2030	0.124	0.091	0.123	0.086	122.3	0.019	0.016	0.019	0.015	0.105	0.079	0.104	0.074	102.2
2031	0.125	0.092	0.124	0.087	122.3	0.019	0.016	0.019	0.015	0.106	0.079	0.105	0.075	102.2
2032	0.126	0.093	0.125	0.087	122.3	0.019	0.016	0.019	0.015	0.106	0.080	0.106	0.076	102.2
2033	0.128	0.094	0.127	0.089	122.3	0.019	0.015	0.018	0.015	0.108	0.081	0.107	0.077	102.2
2034	0.130	0.096	0.129	0.090	122.3	0.018	0.015	0.018	0.014	0.110	0.083	0.109	0.078	102.2
2035	0.132	0.098	0.131	0.092	122.3	0.018	0.014	0.017	0.014	0.111	0.084	0.111	0.080	102.2
2036	0.134	0.099	0.133	0.093	122.3	0.017	0.014	0.017	0.014	0.113	0.086	0.112	0.081	102.2
2037	0.136	0.101	0.135	0.095	122.3	0.017	0.014	0.016	0.013	0.114	0.087	0.114	0.082	102.2
Levelized														
20 years (2008-2027)	0.102	0.071	0.101	0.067	104.3	0.035	0.029	0.034	0.028					
20														

Notes:

- Peak hours are: Monday through Friday 7am - 11pm; Off-Peak Hours are: All other hours
- Summer is May through October; Winter is all other months
- Avoided Retail Costs reflect all relevant losses from generation to customer meter.
- Capacity price converted to $/kWh at zonal on-peak summer load factor.
- Capacity prices are based upon prices from Jan through April from previous power year and May to Dec from current year
- Projected costs related to CO2 represent costs that are not yet internalized. Sustainability Target = Allowance Price (internalized value) + Environmental Cost
- Costs for 2033 through 2037 are projected at the average annual rate of escalation during the prior ten years (2022 to 2032).

4. Avoided Retail Natural Gas Costs

This chapter provides a projection of wholesale natural gas prices for NIMO as well as a projection of avoided natural gas costs by retail end-use sector that would be avoided due to reductions in retail gas use by NIMO customers. The projection provides prices for 2008 through 2037 expressed in 2007 dollars per dekatherm (DT).[16] It provides prices for various shapes or types of retail load shapes. Note that in this analysis winter is defined as November through March.

The gas workpapers containing these calculations are listed in Table 8. They are provided in a workbook titled *NIMO Avoided costs gas workpapers 2008 03 27.xls*.

Table 8 – Workpapers for Avoided Retail Electric Energy Calculations

Number	Name	Content
1	HH Gas 2FO Prices'	Comparison of HH price forecasts, Develop #2 fuel price forecast
2	HH Price Chart	Chart comparing HH price forecasts
3	2 Oil Prices	No. 2 fuel oil prices from NYMEX
4	Notes re HH adjustment	
5	NYMEX HH Data-Const$	NYMEX HH prices, Feb 26 and 27, 2008 converted to constant 2007$
6	Data 2 HH Prices Monthly	HH prices Monthly, GED and NYMEX
7	DTI - HH Basis	Calculation of the Basis differential for Dominion Appalachian Index
8	Forecast Mon HH&DTI Gas Prices	Forecast of HH Natural Gas Prices for the NiMo Study
9	Data NIMO 2	Analyses of Sales and supply data from NIMO
10	LDC Fracs	Fractions (portions) of send-out by source and storage refill by month
11	Supply by Source	LDC fractions
12	DTI rates	Rates paid by for pipeline transportation and storage with Dominion Transmission Inc (DTI)
13	Dominion	Transformation of rates into LDC costs by gas source by month
14	cost by source	Example of costs of Dominion for various services in January and June
15	city gate avoided cost	Avoided Cost of Gas delivered to the LDC
16	ret margin	Retail margin for various end-use customers in NY

A. Avoided Wholesale Gas Costs

The avoided cost of gas of a local distribution company (LDC) such as NIMO is the cost of the marginal source of supply, or sources, that can be avoided in the relevant cost period. Because efficiency improvement is a long-term effect, the relevant avoided cost is the long-run cost that we estimate a local distribution company (LDC) such as NIMO can avoid. The long-run avoided cost

[16] One DT is one million BTU.

consists of the short-run variable costs and a portion, sometimes all, of the long-term fixed costs of gas supply sources.

In this analysis we compute the marginal cost (avoided cost) for each month and for the peak day. The avoided cost is the cost of delivering one DT of gas in a given month to the LDC via the three major resources: year-round, long-haul transportation; underground storage; and peaking service.

In each of the winter months (November through March) when gas is supplied by the three resources, the marginal cost is the weighted average of the cost of gas acquired from each supply source in each month. The factor used to "weight" the cost from each source is the fraction of total supply to customers, or "send-out", provided by each source. Our computation of this weighted average assumes that the LDC has optimized its mix of supply sources. Based upon that assumption we in turn assume that the LDC can avoid both the fixed and variable costs associated with each avoided supply source in response to a long-term efficiency improvement.[17]

B. Niagara Mohawk Send-out and Supply Sources

Niagara Mohawk send-out is significantly higher in the winter season than in the summer season. For example the January firm sales load can be about ten times the firm sales load in August. In addition, its send-out on winter days can vary substantially according to temperature.

In order to supply that load reliably and at reasonable rates, Niagara Mohawk relies upon a portfolio of supply resources. In general, that portfolio consists of:

- Gas delivered via long-haul pipeline transportation to meet a base portion of send-out each month of the year, as well as to refill underground storage during the summer months.
- Gas withdrawn from storage to meet incremental winter send-out[18]. The underground storage facilities used by NIMO are located in Pennsylvania, New York, and West Virginia.[19] Niagara Mohawk also use winter transportation to meet the winter sendout requirement because it can buy spot gas for delivery via the Dominion system even during the winter.
- Gas purchased from Canadian supply, and in the very last instance gas released by co-generation plants when they substitute No. 2 fuel oil, to meet peak day spikes in send-out.

The first step in calculating NIMO's avoided wholesale gas supply costs was to identify the fraction or portion of each source used to meet send-out each month. (We also identified the sources of storage refill in each of the summer months.) We analyzed data from NIMO to determine those fractions[20]. That data and our analyses are presented in gas workpapers 9 and 10. The fractions of send-out by source by month are presented in gas workpaper 11.

[17] In a short-run marginal cost analysis only variable costs can be adjusted and thus the avoided cost is determined by the one supply source which has the highest variable cost.

[18] NIMO typically fills its underground storage during the summer months and removes gas during the winter months to serve its large winter customer load.

[19] LDCs acquire pipeline and storage services through a portfolio of contracts with natural gas transportation and storage companies that have terms, conditions and rates that are regulated by the U.S. Federal Energy Regulatory Commission (FERC).

[20] NIMO Sendout Update 01312008.

C. Components of Avoided Costs by Source

The second step in calculating NIMO's avoided wholesale gas supply costs was to forecast the future costs of gas from each marginal source. The cost of gas delivered to NIMO via long-haul pipeline transportation and from underground storage consists of the commodity cost of the gas and the various charges by Dominion for its pipeline transportation and underground storage services. The marginal source of NIMO peaking supply is gas released by the cogeneration facilities on its system, which is priced at the commodity cost of their alternate fuel, No. 2 fuel oil. This section describes our estimates of those commodity costs and Dominion service charges.

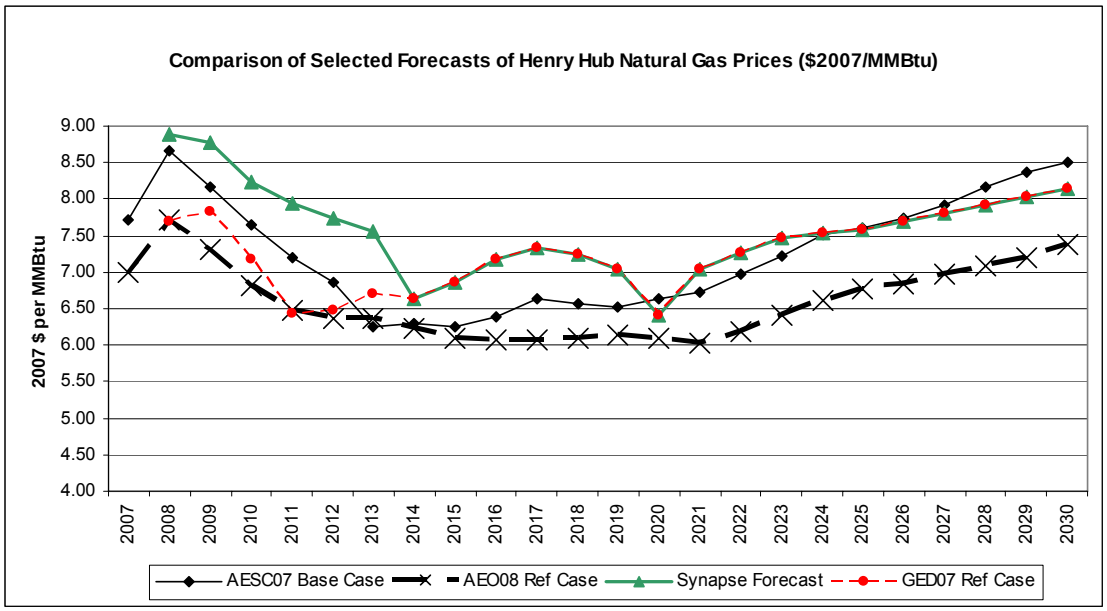
Commodity Costs

Natural Gas. Our avoided cost analysis assumes that NIMO's marginal supply is gas delivered into Dominion and priced at the "Dominion Appalachian Index" for that location or market hub. The forecast Dominion Appalachian Index is a monthly price equal to the forecast Henry Hub monthly price plus the forecast monthly basis differential to the Dominion Appalachian Index hub.

As discussed earlier, our forecast for Henry Hub prices through 2013 is based upon NYMMEX prices as of the time we prepared our forecast and the GED forecast of Henry Hub prices thereafter. Our review and analysis of the GED forecast of HH prices is presented in gas workpapers 1 through 6.

We compared our forecast for Henry Hub prices to the GED forecast as well as to forecasts we developed for AESC 2007 and the Energy Information Administration (EIA) Annual Energy Outlook 2008. That comparison is presented in Figure 4. Our forecast is higher than the others through 2013, but as noted earlier it reflects the NYMEX futures prices for those years. From 2014 onwards our forecast is comparable to the GED forecast and to the AESC 2007 forecast but higher than the AEO 2008 forecast.

Figure 4 – Comparison of Forecasts of Henry Hub prices ($2007/MMBtu)


Comparison of Selected Forecasts of Henry Hub Natural Gas Prices ($2007/MMBtu)
2007 $ per MMBtu
9.00
8.50
8.00
7.50
7.00
6.50
6.00
5.50
5.00
4.50
4.00
2007
2008
2009
2010
2011
2012
2013
2014
2015
2016
2017
2018
2019
2020
2021
2022
2023
2024
2025
2026
2027
2028
2029
2030
AESC07 Base Case
AEO08 Ref Case
Synapse Forecast
GED07 Ref Case

Our forecast of the annual Dominion Appalachian Index price is developed and provided in gas workpapers 7 and 8. The Dominion Appalachian Index price is our forecast of Henry Hub prices plus a forecast of basis differential to the Dominion Appalachian Index hub provided by NIMO.

No. 2 fuel oil. Our forecast of No. 2 fuel oil prices is presented in gas workpaper 1. Through 2013 it is derived from the February 27 NYMEX prices for West Texas Intermediate crude oil. From 2014 onward it is the GED forecast of No. 2 fuel oil prices.

Dominion service charges

Dominion levies three types of charges for its pipeline transportation and storage services:

- fixed demand cost of holding pipeline transportation capacity and of storage and withdrawal capacity on Dominion;
- usage (volumetric) charges for transporting gas on the pipeline and for storage injections and withdrawals; and
- the fraction (percentage) of volumes of gas received by the pipeline or storage facility that is retained by the facility for compressor fuel and losses. This "fuel and loss retention" increases the cost of gas above the Dominion Index price because the volume of gas that must be purchased for delivery into Dominion is greater than the volume that Dominion ultimately delivers to NIMO. Our analyses represent fuel and loss retention as a ratio of gas purchased (or delivered in storage) to gas delivered to NIMO.

The rates and the fuel and loss retention percentages charged by Dominion are presented in gas workpaper 12. Our analyses assume that these rates and retention percentages will persist for the forecast period, 2008 – 2032 with one exception. We have used the increase in DTI demand charges scheduled to take effect in November 2010.

D. Avoided Cost of Gas by Source

The third step in calculating NIMO's avoided wholesale gas supply costs was to develop avoided costs by supply source using the projections by cost component from the preceding section. These avoided costs were developed in gas workpaper 13. A representative set of costs by source are presented in gas workpaper 14.

Long-haul Pipeline "Cash" Costs

Gas is delivered to the LDC each month by pipelines from producing areas; in this analysis assumed to be Appalachia. By "cash cost" we mean the avoided cost of transportation arising from pipeline usage charges, which are paid for each DT of gas transported, and the demand charges allocated to that month, which pay for the reservation of pipeline capacity whether used or not.[21] The avoided commodity cost of gas purchased is the price of gas at The Dominon Appalachian Index that month multiplied by the ratio of the volume purchased to one DT of gas delivered to the LDC. Because of the retention of gas for fuel and loss in both transportation and storage, more than one dekatherm of gas must be purchased in order to deliver one dekatherm to the LDC.

[21] Rate Schedules assumed for the transportation: Dominion FTNN and FTNN-GSS for delivery of gas from underground storage.

This ratio of gas volumes purchased in the producing area to one DT of gas delivered to the LDC is established by the fuel and loss retention percentages of the various pipeline transportation and storage services used between the producing area and the LDC. For example, assume that the gas is transported by two pipelines: A and B from the producing area to the LDC. The fuel and loss percentage is 6 percent for A (Fa) and 4 percent for pipeline B (Fb). The fuel and loss amount taken by the pipeline is based on the volumes received by the pipeline (R) while the demand and usage charges are based on the volume of gas delivered by the pipeline (D). In order to compute the ratio of gas received to that delivered we use the following equations:

(1) $D = R - FR$

(2) $D = R(1-F)$

(3) $R/D = 1/(1-F)$

For pipeline A; $Ra/Da = 1/(1-.06) = 1.0638$; or $Ra = 1.0638\ Da$

For pipeline B; $Rb/Db = 1/(1-.04) = 1.0417$; or $Rb = 1.0417\ Db$

Since Db is the amount delivered to the LDC, we want to compute Ra/Db or the ratio of the amount to be purchased in the field to the amount delivered to the LDC.

Since: $Rb = Da$

$Ra = 1.0638\ Da = (1.0638)Rb = (1.0638)(1.0417)Db$

Thus: $Ra/Db = (1.0638)(1.0417) = 1.1082$

Or: 1.1082 DTs of natural gas must be purchased for each DT delivered to the LDC.

Illustrative avoided costs by gas source and pipeline route for January and June of 2009 are presented in gas workpaper 10.

Summer. Local gas distribution companies (LDCs) use a portion of their long-haul pipeline transportation in the summer to transport gas directly to the LDC from the producers for sendout. They use another portion to transport gas to fill underground storage. Consequently, a corresponding portion of the costs of demand and usage charges and the fuel and loss fraction for pipeline transportation from producers to refill storage are allocated to the avoided cost of underground storage. Even with the use of Dominion transportation capacity to fill underground storage in the summer, much of the transportation capacity is not use in the summer but has to be reserved to serve the winter firm sales load. This is typical of many LDCs and is not surprising given that January firm sales demand can be about ten times the August firm sales demand. Because marginal transportation capacity is needed for the winter, but is not used to capacity in the summer, we allocated the summer demand costs to the winter avoided cost.

We assume that there is no avoided demand cost for long-haul pipeline capacity in the summer months (April – October). We assume that there is insufficient market for Dominion FTNN released capacity in the summer that would pay for the demand charges. This means that an LDC would continue to pay the full demand charge in each summer month even if the gas requirements of customers were reduced due to energy efficiency in the summer; thus the LDC would not avoid the summer pipeline demand charges.

Winter. NIMO's use of its long-haul transportation capacity in the winter varies from about 74 percent in November to 100 percent in January. The total cost of pipeline transportation demand charges attributable to the five winter months consist of the demand charges the pipeline bills NIMO for each of those months plus the summer demand costs we have allocated to the winter season. The portion of that winter season cost allocated to each winter month is a function of the capacity used to serve load in that month. The cost of unused capacity in any month, such as November, is allocated to those months in which the capacity is used. As a result, the avoided transportation demand cost varies among the five winter months with the month of heaviest use, January, receiving the largest allocation of demand charges.

Underground Storage

Natural gas is delivered to the LDC from underground storage during the five winter months of November through March as shown in gas workpaper 11. The avoided cost of underground storage supply for one DT in January is shown in gas workpaper 14.

The avoided cost of underground storage includes the cost of buying gas on Dominion, pipeline demand charges to bring gas to the storage facility, the cost of injection, the demand cost of storage capacity, the demand and variable costs of withdrawing gas from storage, and the demand and variable costs of transporting gas to the LDC from underground storage.[22]

The cost of gas injected into storage is the cost of buying gas on Dominion, as adjusted for fuel and loss retention, plus the cost of transportation to underground storage including demand costs at 100% load factor. The cost of the gas injected into storage is less than the average cost of gas for a year, because gas is purchased for injection during the summer months when the price of gas is less than the annual average.

Since the demand charges for the withdrawal of gas from storage to the LDC are levied 12 months a year, we allocate the full year of those withdrawal demand charges to the five winter months. Then we allocate these demand charges of withdrawal and of transportation to NIMO to each of the five winter months by the use of the capacity in each month. January is the peak sendout month, as shown in gas workpaper 11. The other winter months, especially November and March experience less sendout. Thus, the demand cost of unused capacity of storage withdrawal and of transportation capacity from underground storage to the LDC in November and March is assigned to the sendout during December through February based on usage each month. Similarly the unused capacity during December and February is assigned to the cost of withdrawing and transporting gas to the LDC in January.

Peak-Day Supply

NIMO's marginal peaking supply is gas released by the cogeneration facilities on its system. For this gas NIMO pays the cost of their alternate fuel, which is No. 2 fuel oil. Thus the avoided cost of the peaking supply is the cost of No. 2 fuel oil delivered to large facilities in New York.

[22] Rate schedules used in the calculation for Dominion are: Dominion FTNN to fill storage, GSS for Storage and FTNN-GSS to deliver stored gas to NIMO. When FTNN is used to fill storage the usage and retention charges are waived; instead there is an injection charge and gas retention for injection.

E. Avoided City-Gate Gas Costs

The avoided cost of natural gas by costing period is the average of the avoided cost in each of the months that comprise the costing period. As described earlier, the avoided cost in any month is the weighted average of the avoided cost of gas delivered to the LDC from each of the three sources: long-haul pipeline, underground storage, and gas released from the cogeneration units. The weightings or fractions by source by month were presented in gas workpaper 11.

NIMO's avoided city-gate costs are presented in gas workpaper 15. Also shown is the annual Dominion Appalachian Index forecast price of natural gas. Other than for the peak-day, the commodity cost of gas is the largest component of the avoided cost.

The levelized avoided cost is the cost for which the present value at the real riskless rate of return of 2.2165 percent has the same present value as the estimated avoided costs for the periods shown at the same rate of return. The average cost is the simple average over the period 2008 through 2022.

F. Avoided Distribution System Costs

Studies of marginal distribution system costs performed by the former KeySpan LDCs in New England indicate that the incremental cost of distribution is approximately one-half of the embedded cost. For this analysis we estimated the embedded cost of distribution as the difference between the city-gate price of gas in New York State and the price charged each of the different retail customer types: residential, commercial, and industrial in New York.[23] That analysis, and our estimates of average avoided distribution costs for New York LDCs by customer segment, is presented in gas workpaper 16.

G. Avoided Retail Gas Costs

We calculated avoided retail gas costs for various types of retail end-uses. For a given costing period the avoided cost for each retail end-use is the avoided city-gate cost of gas associated with the end-use type plus the avoided LDC margin for that end-use.

The avoided city-gate cost of gas and avoided margin associated with the each retail end-use can be determined from Table 9.

[23] The city-gate gas prices and the prices charged to each retail customer type are reported by the Energy Information Administration for each state each year.

Table 9 - End-Use Type and Associated Avoided Cost Periods

End-Use Types	Period	Months
Commercial and Industrial, non-heating	Annual	Jan – Dec
Commercial and industrial, heating	5 month	Nov – Mar
Existing residential heating	3 month	Dec – Feb
New residential heating	5 month	Nov – Mar
Residential domestic hot water	Annual	Jan – Dec
All commercial and industrial	6 month	Nov – Apr
All residential	6 month	Nov – Apr
All retail end uses	5 month	Nov – Mar

The detailed avoided retail gas costs from 2008 through 2037 are presented in Table 10[24]. The supporting calculations are presented in the *retail avd gas cost* worksheet in *NIMO Avoided costs gas workpapers 2008 03 27.xls*.

[24] Avoided wholesale energy costs through 2032 are derived directly from the GED forecast as adjusted by Synapse. Values for 2033 through 2037 are derived from the 2032 value increased by the average rate of escalation of the prior ten years.

TABLE 10
AVOIDED COSTS OF GAS DELIVERED TO RETAIL CUSTOMERS
Niagara Mohawk Power Corporation
Gas Delivered via Dominion Transmission, Inc.
(2007$/Dekatherm)

Year	RESIDENTIAL Existing Heating Dec-Feb	RESIDENTIAL New Heating Nov-Mar	RESIDENTIAL Hot Water annual	RESIDENTIAL All Nov-Apr	COMMERCIAL & INDUSTRIAL Non Heating annual	COMMERCIAL & INDUSTRIAL Heating Nov-Mar	COMMERCIAL & INDUSTRIAL All Nov-Apr		ALL RETAIL Nov-Mar
2008	13.40	13.51	13.32	13.44	11.73	11.92	11.85		12.67
2009	14.00	13.79	12.94	13.55	11.35	12.20	11.96		12.94
2010	13.33	13.14	12.40	12.93	10.81	11.55	11.34		12.29
2011	12.99	12.80	12.12	12.60	10.53	11.21	11.01		11.96
2012	12.75	12.57	11.90	12.37	10.32	10.98	10.79		11.73
2013	12.55	12.37	11.72	12.18	10.14	10.79	10.59		11.53
2014	11.59	11.43	10.74	11.22	9.15	9.84	9.63		10.58
2015	11.85	11.69	10.99	11.48	9.40	10.10	9.89		10.84
2016	12.17	12.01	11.29	11.79	9.70	10.42	10.20		11.16
2017	12.35	12.19	11.46	11.97	9.88	10.60	10.38		11.34
2018	12.25	12.08	11.36	11.87	9.78	10.49	10.28		11.24
2019	12.04	11.87	11.17	11.66	9.58	10.29	10.07		11.03
2020	11.36	11.20	10.52	11.00	8.93	9.61	9.41		10.35
2021	12.03	11.86	11.16	11.65	9.57	10.28	10.06		11.02
2022	12.28	12.12	11.40	11.90	9.81	10.53	10.31		11.27
2023	12.49	12.33	11.60	12.11	10.01	10.74	10.52		11.48
2024	12.56	12.39	11.66	12.17	10.07	10.81	10.59		11.55
2025	12.62	12.45	11.72	12.23	10.13	10.86	10.64		11.61
2026	12.74	12.57	11.82	12.34	10.24	10.98	10.76		11.72
2027	12.85	12.68	11.94	12.46	10.35	11.09	10.87		11.84
2028	12.97	12.80	12.05	12.58	10.46	11.21	10.99		11.96
2029	13.10	12.92	12.16	12.69	10.57	11.33	11.11		12.08
2030	13.22	13.04	12.28	12.81	10.69	11.46	11.23		12.20
2031	13.34	13.17	12.40	12.94	10.81	11.58	11.35		12.32
2032	13.47	13.29	12.51	13.06	10.93	11.70	11.47		12.45
2033	13.60	13.42	12.63	13.18	11.04	11.83	11.59	0.00	12.57
2034	13.72	13.54	12.75	13.30	11.16	11.95	11.72	0.00	12.70
2035	13.85	13.67	12.87	13.43	11.28	12.08	11.84	0.00	12.82
2036	13.98	13.79	12.99	13.55	11.41	12.21	11.97	0.00	12.95
2037	14.11	13.92	13.11	13.68	11.53	12.34	12.09	0.00	13.08
LEVELIZED Years									
2008-2027 20	12.54	12.39	11.70	12.18	10.11	10.80	10.59		11.54
Real (constant $) riskless annual rate of return in %:					2.2165%				

Appendix A

Pages 7-9 to 7-16 from *Avoided Energy Supply Costs In New England: 2007 Final Report*

process. The regulatory history of acid rain and of ozone depletion contributed important foundations for efforts to regulate greenhouse gas emissions (federal government role in addressing pollution, and framework for international negotiations on pollutants, respectively).

ii. Carbon Dioxide will be the Dominant Externality from Electricity Production and Use in New England Over the Study Period

Externalities associated with electricity production and uses include a wide variety of air pollutants, water pollutants, and land use impacts. The principle air pollutants that have externalities include carbon dioxide, sulfur dioxide, nitrogen oxides and ozone, particulates, and mercury.

There have been several fairly comprehensive studies that assess the full range of environmental impacts from electricity generation and use. These include:

- *Environmental Costs of Electricity*, prepared by the Pace University Center for Environmental and Legal Studies: Ottinger, R, et. al,, for NYSERDA, Oceana Publications, Inc, 1990;
- The New York State Environmental Externalities Cost Study, RCG/Hagler, Bailly, Inc. and Tellus Institute, for the Empire State Electric Energy Research Corporation (ESEERCO), multiple volumes, 1994 and 1995;
- Non-Price Benefits of BECo Demand-Side Management Programs, for the Boston Edison Settlement Board, Tellus No. 93-174A, July 1994; and
- US-EC Fuel Cycle Study, by Oak Ridge National Laboratory and Resources for the Future, for the US Department of Energy and the Commission of the European Communities, multiple volumes, 1992 to 1994.

The list of externalities from energy production and use is quite long, and includes the following:

- Air emissions (including SO_2, NO_x, particulates, mercury, lead, other toxins, and greenhouse gases) and the associated health and ecological damages;
- Fuel cycle impacts associated with "front end" activities such as mining and transportation, and waste disposal;
- Water use and pollution;
- Land use;
- Aesthetic impacts of power plants and related facilities;
- Radiological exposures related to nuclear power plant fuel supply and operation (routine and accident scenarios); and
- Other non-environmental externalities such as economic impacts (generally focused on employment), energy security, and others.

Many of these externalities have been reduced over time, as regulations limiting emission levels have forced suppliers and buyers to consider at least a portion of those costs in their production and use decisions, thereby "internalizing" a portion of those costs. For example, the Clean Air Interstate Rule, passed by Congress in March 2005, adjusts the SO_2 emissions cap downward with an ultimate effect of reducing SO_2 emissions about 73% from 2003 levels. The Clean Air Act and the Clean Air Interstate Rule require further reductions in emission levels over the study period. As a result, while there remain some "external costs" associated with the residual NO_x and SO_2 pollution, these externalities are now relatively small. In contrast, regulators are just starting to "internalize" the impacts of carbon dioxide.

It is expected that the "carbon externality" will be the dominant externality associated with marginal electricity generation in New England. This is the case for two main reasons. First, as noted above, regulations to address the greenhouse gas emissions responsible for global climate change are lagging, particularly in the United States. The damages from criteria air pollutants are relatively bounded, and to a great extent "internalized," as a result of existing regulations. In contrast, global climate change is a problem on an unprecedented scale with far-reaching and potentially catastrophic implications. Second, New England avoided electric energy costs over the study period are likely to be dominated by natural gas-fired generation, which has minimal SO_2, mercury, and particulate emissions and relatively low NO_x emissions. Hence, spending extensive time reviewing the latest literature on externality values for these emissions would not be a good use of time and budget. Based on knowledge of the electric system, and review of model runs, it is believed that the dominant environmental externality in New England over the study period will be the un-internalized cost of carbon dioxide emissions. RGGI and any federal CO_2 regulations will only internalize a portion of the "greenhouse gas externality," particularly in the near term.

The California PUC has directed electric companies to include a value for carbon dioxide in their avoided cost determination and long-term resource procurement. The CA PUC found:

> "In terms of specific pollutants, of significant concern to regulators and the public today is the environmental damage caused by carbon dioxide (CO_2) emissions—an inescapable byproduct of fossil fuel burning and by far the major contributor to greenhouse gases. Unlike other significant pollutants from power production, CO_2 is currently an unpriced externality in the energy market…. CO_2 is not consistently regulated at either the Federal or State levels and is not embedded in energy prices…."[115]

For the above reasons, values were developed for the one major emission associated with avoided electricity costs for which the near-term internalized cost most significantly understates the value supported by current science.

[115] R.04-04-003, Appendix B, p. 5.

iii. General Approaches to Monetizing Environmental Externalities

There are various methods available for monetizing environmental externalities such as air pollution from power plants. These include various "damage costing" approaches that seek to value the damages associated with a particular externality, and various "control cost" approaches that seek to quantify the marginal cost of controlling a particular pollutant (thus internalizing a portion or all of the externality).

The "damage costing" methods generally rely on travel costs, hedonic pricing, and contingent valuation in the absence of market prices. These are forms of "implied" valuation, asking complex and hypothetical survey questions, or extrapolating from observed behavior. For example, data on how much people will spend on travel, subsistence, and equipment, can be used to measure the value of those fish, or more accurately the value of *not* killing fish via air pollution. Human lives are sometimes valued based upon wage differentials for jobs that expose workers to different risks of mortality. In other words, comparing two jobs, one with higher hourly pay rate and higher risk than the other can serve as a measure of the compensation that someone is "willing to accept" in order to be exposed to the risk.

There are myriad problems with these approaches, two of which will be discussed here. First, the damage costing approaches are, in the case of global climate change, simply subject to too many problematic assumptions. We do not subscribe to the view that a reasonable economic estimate of the "damages" around the world can be developed and used as a figure for the externalities associated with carbon dioxide emissions. In other words, estimating damage is a moving target – it depends upon what concentrations we ultimately reach (or what concentrations we reach and reduce from). This is exacerbated by the fact that we do not fully understand climate change, and cannot project with certainty the levels at which certain impacts will occur. A further complicating factor is that different emissions concentrations create different damages for different regions and different groups of people. Thus, such exercises, while interesting, are fraught with difficulties including: (a) identifying the categories of changes to ecosystems and societies around the planet; (b) estimating magnitudes of impacts; (c) valuing those impacts in economic terms; (d) aggregating those values across countries with different currency exchange rates and different cultures; (e) addressing the non-linear and catastrophic aspects of the climate change damage; and (f) dealing with the paradoxes and conundrums involved in applying financial discount rates to effects stretching over centuries. Second, the fact that the "regulators' revealed preferences" approach is unavailable, as regulators have not established relevant reference points, complicates the task of determining a carbon externality cost.

The "control cost" methods generally look at the *marginal* cost of control. That is, the cost of control valuations look at the last (or most expensive) unit of emissions reduction required to comply with regulations. The cost of control approach can be based upon a "regulators' revealed preference" concept. That is, if "air regulators" are requiring a particular technology with a cost per ton of $X to be installed at power plants, then this can be taken as an indication that the value of those reductions is perceived to be at or above the cost of the controls. The cost of control approach can also be based upon a "sustainability target" concept. With the sustainability target, we start with a level of

damage or risk that is considered to be acceptable, and then estimate the marginal cost of achieving that target.

The "sustainability target" approach relies on the assumption that the nations of the world will not tolerate unlimited damages. It also relies partly on an expectation that policy leaders will realize that it is cheaper to reduce emissions now and achieve a sustainability target than it is not to address climate change. It is worth noting that a cost estimate based on a sustainability target will be a bit lower than a damage cost estimate because the "sustainability target" is going to be a calculus of what climate change the planet is already committed to, and what additional change we are willing to live with (again complicated by the fact that different regions will see different impacts, and have different ideas about what is dangerous and what is sustainable). While we do not use a damage cost estimate, it is informative to consider damages to get a sense of the scale of the problem. In October 2006 a major report to Prime Minister Tony Blair stated that "the benefits of strong and early action far outweigh the economic costs of not acting." Based on its review of results from formal economic models, the Stern Review on the Economics of Climate Change estimated that in the absence of efforts to curb climate change, the overall costs and risks of climate change will be equivalent to losing at least 5% of global GDP each year, now and forever, and could be as much as 20% of GDP or more. In contrast, the Stern Review states that the costs of action – the cost of implementing actions to curb climate change – can be limited around 1% of global GDP each year.[116]

iv. Estimation of CO_2 Environmental Costs

Based upon our review of the merits of those various approaches, we selected an approach that estimates the cost of controlling, or stabilizing, global carbon emissions at a "sustainable level" or sustainability target. To develop that estimate, the most recent science regarding the level of emissions that would be sustainable was reviewed, as well as the literature on costs of controlling emissions at that level.

The conceptual and practical challenges for estimating a carbon externality price include the following:

- The damages are very widely distributed in time (over many decades or even centuries) and space (across the globe);
- The "physical damages" include some impacts that are very difficult to quantify and value, such as flooding large land areas; changes to local climates; species range migration; increased risk of flood and drought; changes in the amount, intensity, frequency, and type of precipitation; changes in the type, frequency, and intensity of extreme weather events (such as hurricanes, heat waves, and heavy precipitation);

[116] Stern, Sir Nicholas; *Stern Review of the Economics of Climate Change*; Cambridge University Press, 2007.

- This list of "physical damages" includes some that are extremely difficult, perhaps impossible, to reasonably express in monetary terms;
- The scientific understanding of the climate change process and climate change impacts is evolving rapidly;
- There may well be reasons (not considered here) that the environmental cost value could have a shape that starts lower and increases faster, or vice versa, having to do with periods in which rates of change are most problematic;
- The scale of the impact on the world economies associated with the impacts of climate change and/or associated with the transformations of economies to reduce greenhouse gas emissions are so large that using terms and concepts such as "marginal" can be problematic; and
- The impacts of climate change are non-linear and non-continuous, including "feedback cycles" that can most reasonably be thought of in terms of thresholds beyond which there are "run away damages" such as irreversible melting of the Greenland ice sheet and the West Antarctic ice sheet, and collapse of the Atlantic thermohaline circulation – a global ocean current system that circulates warm surface waters.

Given the daunting challenge of valuing climate damages in economic terms, AESC 2007 takes a practical approach consistent with the concepts of "sustainability" and "avoidance of undue risk." Specifically, the carbon externality can be valued by looking at the marginal costs associated with controlling total carbon emissions at, or below, the levels that avoid the major climate change risks according to current expectations.

Nonetheless, because the environmental costs of energy production and use are so significant, and because the climate change impacts associated with power plant carbon dioxide emissions are urgently important, it is worthwhile to attempt to estimate the externality price and to put it in dollar terms that can be incorporated into electric system planning.

(a) What is the Correct Level of CO_2 Emissions?

In order to determine what is currently deemed a reasonable sustainability target, current science and policy was reviewed. In 1992, over 160 nations (including the United States) agreed to "to achieve stabilization of atmospheric concentrations of greenhouse gases at levels that would prevent dangerous anthropogenic (human-induced) interference with the climate system…." (United Nations Framework Convention on Climate Change or UNFCCC).[117] Achieving this commitment requires determining the maximum temperature increase above which impacts are anticipated to be dangerous, the atmospheric emissions concentration that is likely to lead to that temperature increase, and the emissions pathway that is likely to limit atmospheric concentrations and temperature increase to the desired levels.

[117] There are currently over 180 signatories.

The definition of what level of temperature change constitutes a dangerous climate change will ultimately be established by politicians, as it requires value judgments about what impacts are tolerable regionally and globally.[118] We expect that such a definition and decision will be based upon what climate science tells us about expected impacts and mitigation opportunities.

While uncertainty and research continue, a growing number of studies identify a global average temperature increase of 2°C above pre-industrial levels as the temperature above which dangerous climate impacts are likely to occur.[119] Temperature increases greater than 2°C above pre-industrial levels are associated with multiple impacts including sea level rise of many meters, drought, increasing hurricane intensity, stress on and possible destruction of unique ecosystems (such as coral reefs, the Arctic, alpine regions), and increasing risk of extreme events.[120] The European Union has adopted a long-term policy goal of limiting global average temperature increase to 2°C above pre-industrial levels.[121]

Because of multiple uncertainties, it is difficult to define with certainty what future emissions pathway is likely to avoid exceeding that temperature increase. We reviewed several sources to determine reasonable assumptions about what level of concentrations are deemed likely to achieve the sustainability target, and what emission reductions are necessary to reach those emissions levels. The Intergovernmental Panel on Climate Change's most recent Assessment Report indicates that concentrations of 445-490 ppm CO_2 equivalent correspond to 2° – 2.4°C increases above pre-industrial levels.[122] A comprehensive assessment of the economics of climate change, The Stern Review, proposes a long-term goal to stabilize greenhouse gases at between the equivalent of 450 and 550 ppm CO_2.[123] Recent research indicates that achieving the 2°C goal likely requires stabilizing atmospheric concentrations of carbon dioxide and other heat-trapping gases near 400 ppm carbon dioxide equivalent.[124]

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[118] For multiple discussions of the issues surrounding dangerous climate change, *see* Schnellnhuber, Cramer, Nakicenovic, Wigley and Yohe, editors; *Avoiding Dangerous Climate Change*; Cambridge University Press, 2006. This book contains the research presented at The International Symposium on Stabilisation of Greenhouse Gas Concentrations, Avoiding Dangerous Climate Change, which took place in the U.K. in 2005.

[119] Mastrandrea, M. and Schneider, S.; *Probabilistic Assessment of "Dangerous" Climate Change and Emissions Scenarios: Stakeholder Metrics and Overshoot Pathways;* Chapter 27 in *Avoiding Dangerous Climate Change*; Cambridge University Press, 2006.

[120] Schnellnhuber, 2006.

[121] The European Union first adopted this goal in 1996 in "Communication of the Community Strategy on Climate Change." Council conclusions. European Council. Brussels, Council of the EU. The EU has since reiterated its long-term commitment in 2004 and 2005 (*see*, *e.g.* Council of the European Union, Presidency conclusions, March 22-23.)

[122] IPCC AR4, WGIII Summary for Policy Makers, 2007. Table SPM5.

[123] Stern, Sir Nicholas; *Stern Review of the Economics of Climate Change*; Cambridge University Press, 2007.

[124] Meinshausen, M.; *What Does a 2°C Target Mean for Greenhouse Gases? A Brief Analysis Based on Multi-Gas Emission Pathways and Several Climate Sensitivity Uncertainty Estimates;* Chapter 28 in *Avoiding Dangerous Climate Change*; Cambridge University Press, 2006.

The Intergovernmental Panel on Climate Change (IPCC) indicates that reaching concentrations of 450-490ppm CO_2-eq requires reduction in global CO_2 emissions in 2050 of 85-50% below 2000 emissions levels. [125] The Stern Review indicates that global emissions would have to be 70% below current levels by 2050 for stabilization at 450ppm CO_2-eq.[126] To accomplish such stabilization, the United States and other industrialized countries would have to reduce greenhouse gas emissions on the order of 80 – 90% below 1990 levels, and developing countries would have to achieve reductions from their baseline trajectory as soon as possible.[127] In the United States, several states have adopted state greenhouse gas reduction targets of 50% or more reduction from a baseline of 1990 levels or then-current levels by 2050 (California, Connecticut, Illinois, Maine, New Hampshire, New Jersey, Oregon, and Vermont). In 2001, the New England states joined with the Eastern Canadian Premiers in also adopting a long-term policy goal of reductions on the order of 75-80% of then-current emission levels.[128]

The sobering news is that a long term stabilization goal of even 400 ppm might not be sufficient: "while very rapid reductions can greatly reduce the level of risk, it nevertheless remains the case that, even with the strictest measures we model, the risk of exceeding the 2ºC threshold is in the order of 10 to 25 per cent."[129] Similarly, the 2ºC threshold may not be sufficient to avoid severe impacts.[130]

(b) What is the Cost of Stabilizing CO_2 Emissions at this Sustainable Level?

There have been several efforts to estimate the costs of achieving a variety of atmospheric concentration targets. The most comprehensive effort is the work of the Intergovernmental Panel on Climate Change. The IPCC was established by the World Meteorological Organization and UNEP in 1988 to provide scientific, technical and methodological support and analysis on climate change. IPCC has issued three assessment reports on the science of climate change, climate change impacts, and on mitigation and adaptation strategies (1990, 1995, 2001), and is currently issuing its fourth assessment report. In its fourth Assessment Report, the IPCC indicates that reductions on the order of 34 gigatonnes (Gt) would be necessary to achieve an 80% reduction below current. [131] That report estimates that up to 31 Gt in reductions are available for $100/te of

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[125] IPCC AR4, WGIII Summary for Policy Makers, 2007. Table SPM5.

[126] Stern Review, Long Executive Summary, 2007. Page xi.

[127] den Elzen, M., Meinshausen, M; *Multi-Gas Emission Pathways for Meeting the EU 2ºC Climate Target;* Chapter 31 in *Avoiding Dangerous Climate Change*; Cambridge University Press, 2006. Page 306.

[128] New England Governors/Eastern Canadian Premiers, *Climate Change Action Plan 2001*, August 2001. NEG/ECP reiterated this commitment in June 2007 through Resolution 31-1, which states, in part, that the long term reduction goals should be met by 2050.

[129] Bauer and Mastrandrea; *High Stakes: Designing emissions pathways to reduce the risk of dangerous climate change;* Institute for Public Policy Research, U.K.; November 2006.

[130] See recent research by James Hansen, Goddard Space Flight Institute – NASA's top climate scientist.

[131] 2000 emissions levels were 43Gt CO_2-eq. IPCC AR4, WGIII, Summary for Policy Makers, 2007. Page 11.

CO_2 or less (Working Group III Summary for Policy Makers). Other studies on the costs of achieving stabilization targets include the following:

- A Vattenfalls study of abatement potential estimates that about 30 Gt reduction would be necessary for stabilization at 450 ppm, and about 27Gt are available for around \$50/tCO_2 – so cost would go above \$50/t;[132]
- McKinsey & Company have developed an abatement cost curve that indicates that stabilization at 450 ppm would have a marginal abatement cost of about \$50/t, stabilization at 400 ppm would have a marginal abatement cost of over \$60/tCO_2; and
- The Stern Review itself talks primarily about macro-economic costs; however an underlying meta-analysis of modeling literature concludes that "even stringent stabilization targets can be met without materially affecting world GDP growth, at low carbon tax rates or permit prices, at least by 2030 (in \$US(2000), less than \$15/tCO_2 for 550ppmv and \$50/tCO_2 for 450ppmv for CO_2)."[133]

The IPCC Working Group III Summary for Policy Makers states on page 29 (references omitted): "An effective carbon-price signal could realize significant mitigation potential in all sectors.

- Modeling studies show carbon prices rising to 20 to 80 US\$/tCO_2-eq by 2030 and 30 to 155 US\$/tCO_2-eq by 2050 are consistent with stabilization at around 550 ppm CO_2-eq by 2100. For the same stabilization level, studies since the Third Assessment Report that take into account induced technological change lower these price ranges to 5 to 65 US\$/tCO_2eq in 2030 and 15 to 130 US\$/tCO_2-eq in 2050.
- Most top-down, as well as some 2050 bottom-up assessments, suggest that real or implicit carbon prices of 20 to 50 US\$/tCO_2-eq, sustained or increased over decades, could lead to a power generation sector with low-greenhouse gas emissions by 2050 and make many mitigation options in the end-use sectors economically attractive."

Based on a review of these different sources, we believe that it is reasonable to anticipate a marginal cost of control of \$60/tCO_2-eq for achieving a stabilization target that is likely to avoid temperature increases higher than 2°C above pre-industrial levels. Of course, selection of this value requires multiple assumptions.

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[132] *Vattenfalls Global Climate Impact Abatement Map*, accessed May 30, 2007.

[133] Barker, Terry et. al.; *A report prepared for the HM Treasury Stern Review on "The economics of climate change" The Costs of Greenhouse Gas Mitigation with Induced Technological Change: A Meta-Analysis of Estimates in the Literature*; 4 CMR, University of Cambridge. July 2006.

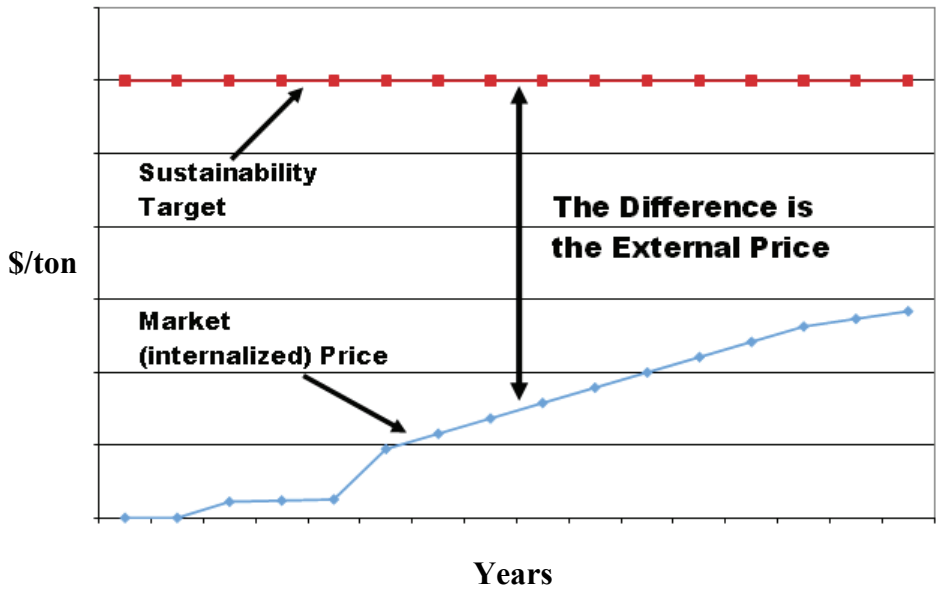
v. Estimating CO_2 Environmental Costs for New England

Our estimates of the "external" or additional cost associated with emissions of carbon dioxide in New England are based upon the sustainability target and the forecast of carbon emission regulation in New England over the study period. The externality value for carbon dioxide in each year was calculated as the estimated annual sustainability target value of $60/ton minus the annual allowance values internalized in the projected electric energy market prices.

The annual allowance values internalized in the projected electric energy market prices are described in Chapter 5. These values are based upon a Synapse forecast of the carbon trading price associated with anticipated carbon regulations. That carbon price was included in the dispatch model runs (in the generators' bids) and hence is embedded within the AESC 2007 avoided electricity costs. The additional value in each year is the difference between the estimate of marginal cost to achieve a sustainability target ($60/ton CO_2) and the value of the carbon trading price embedded in the projection of wholesale electric energy prices.

Exhibit 7-13 illustrates how the additional CO_2 cost was determined. The line for the allowance price is based on the forecast of carbon allowance costs, illustrating the notion that the United States will gradually move to incorporate the climate externality into policy. The "externality" is simply the difference between the estimate of the cost of achieving a sustainability target and the anticipated allowance cost; that is, the area above the blue line (and below $60/ton) in the graph.

Exhibit 7-13. Determination of the Additional Cost of CO_2 Emissions



The carbon dioxide externality price forecast is presented above as a single simple price. This is for ease of application and because doing something more complex such as varying the shape over time or developing a distribution to represent uncertainty would go beyond the scope of this project and would stretch the available information upon

which the externality price is based. We fully acknowledge the many complexities involved in estimating a carbon price, both conceptual and practical. Some of these are listed in the Estimation of CO_2 Environmental Costs section (iv) above

With regard to environmental costs, AESC 2007 focuses on the externality value of carbon dioxide for the purpose of screening DSM programs for two main reasons. First, the environmental costs of carbon dioxide emissions are substantially greater than the costs of the other environmental impacts of electricity generation. Second, carbon dioxide is expected to be the dominant environmental impact of the marginal sources of generation in New England over the study period. Thus, the cost associated with carbon dioxide emissions dominates other values to an extent that justifies focusing exclusively on carbon dioxide.

The additional value for carbon dioxide in each year is an estimated annual sustainability target value of $60/ton minus the annual projected allowance values internalized in our model. Synapse reviewed science and policy to assess current emerging consensus on what is an appropriate sustainability target. The sustainability target value is an estimate of the cost of stabilizing carbon dioxide emissions at levels that seem likely, based on current science, to avoid more than a 2^oC increase in the global average temperature. The annual allowance values are drawn from our forecast of carbon allowance prices associated with anticipated carbon regulations over the study period. The following exhibit presents the recommended values.

Exhibit 7-14. Recommended Externality Values

Year	Sustainability Target ($/ton)	Allowance Price (internalized value $/ton)	Additional Environmental Cost (Sustainability Target - Allowance Price $/ton)
2007	60	0.00	60.00
2008	60	0.00	60.00
2009	60	2.21	57.79
2010	60	2.37	57.63
2011	60	2.53	57.47
2012	60	9.46	50.54
2013	60	11.56	48.44
2014	60	13.66	46.34
2015	60	15.76	44.24
2016	60	17.86	42.14
2017	60	19.96	40.04
2018	60	22.06	37.94
2019	60	24.16	35.84
2020	60	26.27	33.73
2021	60	27.32	32.68
2022	60	28.37	31.63

The values in the right hand column of the table are, in one sense, externalities. They may be borne by citizens in the form of damages from climate change. There is also a significant chance that the "additional" CO2 costs will be borne to some degree by

electricity consumers in the form of compliance costs in electricity rates if emission regulations require greater reductions more rapidly than we have assumed.

vi. Applying CO_2 Costs in Evaluations of DSM Programs

The externality values from Exhibit 7-14 are provided in the avoided electricity cost workbooks presented in Appendix E. They are expressed as $/kWh based upon our analysis of the CO_2 emissions of the marginal generating units in each year of the study period.

At a minimum program administrators should calculate the costs and benefits of DSM programs without, and then with, these values in order to assess their incremental impact on the cost-effectiveness of programs. However, we recommend the program administrators include these values in their analyses of DSM, unless specifically prohibited from doing so by state or local law or regulation. The next section explains why a DSM program could result in CO_2 emission reductions even under a cap and trade regulatory framework.

vii. Impact of DSM on Carbon Emissions Under a Cap and Trade Regulatory Framework

The Regional Greenhouse Gas Initiative is a cap and trade greenhouse gas program for power plants in the northeastern United States. Discussions to develop the program began in 2003, states signed a memorandum of understanding identifying the main elements of the program in December 2005, and in August 2006 they adopted a model rule for implementing the program. Currently nine states have decided to participate: Connecticut, Delaware, Maine, Massachusetts, New Hampshire, New Jersey, New York, Rhode Island, and Vermont. Maryland passed a law in April 2006 requiring participation in RGGI. Pennsylvania, the District of Columbia, the Eastern Canadian Provinces, and New Brunswick are official "observers" in the RGGI process. Individual states are now engaged in regulatory proceedings to adopt regulations consistent with the agreement.

As currently designed, the program will:

- Stabilize CO_2 emissions from power plants at current levels for the period 2009-2015, followed by a 10% reduction below current levels by 2019;
- Allocate a minimum of 25% of allowances for consumer benefit and strategic energy purposes. Allowances allocated for consumer benefit will be auctioned and the proceeds of the auction used for consumer benefit and strategic energy purposes; and
- Include certain offset provisions that increase flexibility to moderate price impacts and development of complimentary energy policies to improve energy efficiency, decrease the use of higher polluting electricity generation and maintain economic growth.

With carbon dioxide emissions regulated under a cap and trade system, as is assumed in this market price analysis, it is conceivable that a load reduction from a DSM program will not lead to a reduction in the amount of total system carbon dioxide emissions. The annual total system emissions for the affected facilities in the relevant region are, after all, capped. In the analysis that was documented in this report, the relevant cap and trade regulation is the Regional Greenhouse Gas Initiative (RGGI) for the period 2009 to 2012 and the assumed national cap and trade system thereafter. However, there are a number of reasons why a DSM program could result in CO_2 emission reductions, specifically:

- Reduction in load that reduces the cost (marginal or total cost) of achieving an emissions cap can result in a tightening of the cap. This is a complex interaction between the energy system and political and economic systems, and is difficult or impossible to model, but the dynamic may reasonably be assumed to exist;
- Specific provisions in RGGI provide for a tightening or loosening of the cap (via adjustments to the offset provisions that are triggered at different price levels). It is unknown at this point whether and to what extent such "automatic" adjustments might be built into the US carbon regulatory system;
- It is also possible that DSM efforts will be accompanied by specific retirements or allocations of allowances that would cause them to have an impact on the overall system level of emissions (effectively tightening the cap); and
- to the extent that the cap and trade system "leaks" because of its geographic boundaries, one would expect the benefits of a carbon emissions reduction resulting from a DSM program to similarly "leak." That is, a load reduction in New York could cause reductions in generation (and emissions) at power plants in New York, Pennsylvania, and elsewhere. Because New York is in the RGGI cap and trade system, the emissions reductions realized at New York generating units may pop up as a result of increased sales of allowances from NY to other RGGI states. But because Pennsylvania is not in the RGGI system, the emissions reductions at Pennsylvania generating units would be true reductions attributable to the DSM program.

APPENDIX E

KeySpan Energy Delivery
Energy Efficiency Program - Quarter 2
Year to Date June 2008[1]
New York

APPENDIX E - Sample Status Report

Residential

PROGRAM/INITIATIVE	Program Planning & Administration Expenditures YTD	Program Marketing Expenditures YTD	Customer Incentives Expenditures YTD	Program Implementation Expenditures YTD	Evaluation & Market Research Expenditures YTD	Total Expenditures YTD	2007 - 2008 Budget YTD	Annual 2007 - 2008 Budget	No. of Rebates or Participants YTD	Participant Goal YTD	Annual Participant 2007-2008 Goals	Total Annual Savings (Therms) YTD	Savings Goal YTD	Annual Savings 2007-2008 Goals
Residential														
ENERGY STAR Homes	$4,124	$8,676	$0	$151	$302	$13,253	$131,668	$274,309	0	96	200	0	26,304	54,800
High Efficiency Heating Rebate	$25,159	$87,113	$16,989	($1,660)	$1,844	$129,446	$765,678	$1,595,162	43	720	1,500	7,095	126,000	262,500
High Efficiency Water Heating Rebate	$19,920	$74,312	$6,600	$198	$1,460	$102,491	$131,542	$274,046	33	192	400	2,541	15,168	31,600
Insulation & Air Sealing	$32,370	$111,530	$18,153	$2,121	$2,373	$166,547	$319,705	$666,052	36	240	500	13,248	88,320	184,000
Energy Analysis: Internet Audit Guide	$25,094	$84,329	$0	$17,849	$1,840	$129,111	$15,068	$31,392	2,070	1,200	2,500	N/A	N/A	N/A
Residential Technology Demonstration	$18,951	$65,145	$2,101	$0	$1,246	$87,443	$19,426	$40,471	1	5	10	0	1,680	3,500
Energy Audit/Home Performance	$61,263	$148,510	$24,766	$76,175	$4,491	$315,206	$261,346	$544,470	294	480	1,000	N/A	N/A	N/A
Energy Star Products[2]	$40,447	$149,926	$13,441	$1,327	$2,965	$208,106	$164,605	$342,927	457	2,400	5,000	15,193	180,000	375,000
Total Residential	**$227,326**	**$729,542**	**$82,051**	**$96,161**	**$16,523**	**$1,151,602**	**$1,809,038**	**$3,768,829**	**2,934**	**5,333**	**11,110**	**38,077**	**437,472**	**911,400**

PROGRAM/INITIATIVE	Program Planning & Administration Expenditures YTD	Program Marketing Expenditures YTD	Customer Incentives Expenditures YTD	Program Implementation Expenditures YTD	Evaluation & Market Research Expenditures YTD	Total Expenditures YTD	2007 - 2008 Budget YTD	Annual 2007 - 2008 Budget	No. of Rebates or Participants YTD	Participant Goal YTD	Annual Participant 2007-2008 Goals	Total Annual Savings (Therms) YTD	Savings Goal YTD	Annual Savings 2007-2008 Goals
Low-Income	$706,686	$2,892	$1,490,205	$19,248	$51,809	$2,270,840	$2,823,530	$5,882,354	839	842	1,754	283,582	284,569	592,852
Total Low-Income	**$706,686**	**$2,892**	**$1,490,205**	**$19,248**	**$51,809**	**$2,270,840**	**$2,823,530**	**$5,882,354**	**839**	**842**	**1,754**	**283,582**	**284,569**	**592,852**

Commercial and Multifamily

PROGRAM/INITIATIVE	Program Planning & Administration Expenditures YTD	Program Marketing Expenditures YTD	Customer Incentives Expenditures YTD	Program Implementation Expenditures YTD	Evaluation & Market Research Expenditures YTD	Total Expenditures YTD	2007 - 2008 Budget YTD	Annual 2007 - 2008 Budget	No. of Rebates or Participants YTD	Participant Goal YTD	Annual Participant 2007-2008 Goals	Total Annual Savings (Therms) YTD	Savings Goal YTD	Annual Savings 2007-2008 Goals
Commercial & Industrial														
C&I and Multifamily High Efficiency Heating Rebate	$44,256	$100,186	$8,900	$71,116	$3,245	$227,702	$548,054	$1,141,780	23	192	400	1,100	248,640	518,000
C&I Building Practices & Demonstrations	$4,241	$12,867	$0	$4,403	$311	$21,822	$419,727	$874,432	0	7	14	0	170,587	355,390
Economic Redevelopment	$6,905	$20,629	$0	$7,486	$506	$35,526	$777,756	$1,620,324	0	11	22	0	149,815	312,114
Multi-Family Energy Efficiency	$37,190	$98,887	$52,545	$0	$2,727	$191,348	$1,694,230	$3,529,645	6	188	392	3,021	381,588	794,976
Commercial Energy Efficiency	$14,773	$40,986	$10,960	$4,224	$1,025	$71,968	$1,052,314	$2,192,321	18	431	898	295,692	402,160	837,834
Business Analyzer: Internet Audit	$4,392	$13,732	$0	$2,798	$3,128	$24,050	$155,352	$323,651	60	1,358	2,830	N/A	N/A	N/A
Total C&I	**$111,757**	**$287,286**	**$72,405**	**$90,026**	**$10,941**	**$572,416**	**$4,647,433**	**$9,682,153**	**107**	**2,187**	**4,556**	**299,813**	**1,352,791**	**2,818,314**
On-Bill Financing	**$0**					**$0**	**$320,000**	**$666,667**	**N/A**	**N/A**	**N/A**	**N/A**	**N/A**	**N/A**
PROGRAM TOTALS	**$1,045,769**	**$1,019,720**	**$1,644,661**	**$205,435**	**$79,273**	**$3,994,858**	**$9,600,001**	**$20,000,003**	**3,880**	**8,362**	**17,420**	**621,472**	**2,074,832**	**4,322,566**

*The credits shown above reflect the sum of charges and corrections from the beginning of the program year.

[1]June YTD includes activity from September 1 through December 31 (Interim Program)

[2]The methodology for capturing participants has changed from per window to per rebate for the windows program within the Energy Star Products program.

KeySpan Energy Delivery
Energy Efficiency Program - Monthly Expenditure Report
June 2008
New York

APPENDIX E - Sample Status Report

Residential

PROGRAM/INITIATIVE	Program Planning & Administration Expenditures	Program Marketing Expenditures	Customer Incentives Expenditures	Program Implementation Expenditures	Evaluation & Market Research Expenditures	Total Expenditures	2007 - 2008 Budget	No. of Rebates or Participants	2007-2008 Goals	Total Annual Savings (Therms)	2007-2008 Goals
Residential											
ENERGY STAR Homes	$1	$0	$0	$1	$0	$2	$274,309	0	200	0	54,800
High Efficiency Heating Rebate	$17,859	$28,385	$11,000	$271	$498	$58,012	$1,595,162	3	1,500	495	262,500
High Efficiency Water Heating Rebate	$14,110	$25,768	$5,400	$162	$393	$45,833	$274,046	5	400	385	31,600
Insulation & Air Sealing	$18,314	$29,058	$11,063	$546	$510	$59,492	$666,052	2	500	736	184,000
Energy Analysis: Internet Audit Guide	$11,605	$25,768	$0	$0	$323	$37,696	$31,392	232	2,500	N/A	N/A
Residential Technology Demonstration	$11,606	$25,767	$0	$0	$323	$37,696	$40,471	0	10	0	3,500
Energy Audit/Home Performance	$25,003	$25,682	$10,352	$19,486	$697	$81,219	$544,470	46	1,000	N/A	N/A
Energy Star Products	$23,209	$51,536	$0	$0	$647	$75,393	$342,927	44	5,000	1,424	375,000
Total Residential	**$121,707**	**$211,964**	**$37,815**	**$20,466**	**$3,392**	**$395,344**	**$3,768,829**	**332**	**11,110**	**3,040**	**911,400**

PROGRAM/INITIATIVE	Program Planning & Administration Expenditures	Program Marketing Expenditures	Customer Incentives Expenditures	Program Implementation Expenditures	Evaluation & Market Research Expenditures	Total Expenditures	2007 - 2008 Budget	No. of Rebates or Participants	2007-2008 Goals	Total Annual Savings (Therms)	2007-2008 Goals
Low-Income	$0	$0	$0	$0	$0	$0	$5,882,354	0	1,754	0	592,852
Total Low-Income	**$0**	**$0**	**$0**	**$0**	**$0**	**$0**	**$5,882,354**	**0**	**1,754**	**0**	**592,852**

Commercial and Multifamily

PROGRAM/INITIATIVE	Program Planning & Administration Expenditures	Program Marketing Expenditures	Customer Incentives Expenditures	Program Implementation Expenditures	Evaluation & Market Research Expenditures	Total Expenditures	2007 - 2008 Budget	No. of Rebates or Participants	2007-2008 Goals	Total Annual Savings (Therms)	2007-2008 Goals
Commercial & Industrial											
C&I and Multifamily High Efficiency Heating Rebate	$8,890	$1,939	$6,900	$10,902	$248	$28,879	$1,141,780	0	400	0	518,000
C&I Building Practices & Demonstrations	$930	$969	$0	$1,097	$26	$3,022	$874,432	0	14	0	355,390
Economic Redevelopment	$1,559	$2,217	$0	$1,244	$43	$5,063	$1,620,324	0	22	0	312,114
Multi-Family Energy Efficiency	$12,608	$969	$27,027	$0	$351	$40,956	$3,529,645	2	392	3,021	794,976
Commercial Energy Efficiency	$2,090	$2,908	$0	$1,732	$58	$6,788	$2,192,321	7	898	105	837,834
Business Analyzer: Internet Audit	$437	$969	$0	$0	$12	$1,418	$323,651	11	2,830	N/A	N/A
Total C&I	$26,514	$9,971	$33,927	$14,976	$739	$86,127	**$9,682,153**	20	4,556	3,126	2,818,314
PROGRAM TOTALS	**$148,221**	**$221,935**	**$71,742**	**$35,442**	**$4,131**	**$481,471**	**$19,333,336**	**352**	**17,420**	**6,166**	**4,322,566**

* This view does not include status with On-bill Financing.

KeySpan Energy Delivery
Energy Efficiency Program - Monthly Expenditure Report
May 2008
New York

APPENDIX E - Sample Status Report

Residential

PROGRAM/INITIATIVE	Program Planning & Administration Expenditures	Program Marketing Expenditures	Customer Incentives Expenditures	Program Implementation Expenditures	Evaluation & Market Research Expenditures	Total Expenditures	2007 - 2008 Budget	No. of Rebates or Participants	2007-2008 Goals	Total Annual Savings (Therms)	2007-2008 Goals
Residential											
ENERGY STAR Homes	$305	$1,869	($1,406)	($208)	$36	$596	$274,309	0	200	0	54,800
High Efficiency Heating Rebate	$1,258	$1,051	$0	$0	$147	$2,456	$1,595,162	10	1,500	1,650	262,500
High Efficiency Water Heating Rebate	$1,208	$1,008	$0	$0	$141	$2,357	$274,046	9	400	693	31,600
Insulation & Air Sealing	$6,214	$2,408	$2,485	$296	$724	$12,127	$666,052	7	500	2,576	184,000
Energy Analysis: Internet Audit Guide	$1,208	$1,008	$0	$0	$141	$2,357	$31,392	170	2,500	N/A	N/A
Residential Technology Demonstration	$1,885	$967	$578	$0	$218	$3,647	$40,471	1	10	0	3,500
Energy Audit/Home Performance	$21,486	$30	$8,118	$9,793	$2,505	$41,931	$544,470	39	1,000	0	0
Energy Star Products	$10,936	$2,142	$6,391	$598	$1,275	$21,342	$342,927	80	5,000	2,974	375,000
Total Residential	**$44,499**	**$10,484**	**$16,164**	**$10,479**	**$5,185**	**$86,812**	**$3,768,829**	**316**	**11,110**	**7,893**	**911,400**

PROGRAM/INITIATIVE	Program Planning & Administration Expenditures	Program Marketing Expenditures	Customer Incentives Expenditures	Program Implementation Expenditures	Evaluation & Market Research Expenditures	Total Expenditures	2007 - 2008 Budget	No. of Rebates or Participants	2007-2008 Goals	Total Annual Savings (Therms)	2007-2008 Goals
Low-Income	$0	$0	$0	$0	$0	$0	$5,882,354	644	1,754	217,672	592,852
Total Low-Income	**$0**	**$0**	**$0**	**$0**	**$0**	**$0**	**$5,882,354**	**644**	**1,754**	**217,672**	**592,852**

Commercial and Multifamily

PROGRAM/INITIATIVE	Program Planning & Administration Expenditures	Program Marketing Expenditures	Customer Incentives Expenditures	Program Implementation Expenditures	Evaluation & Market Research Expenditures	Total Expenditures	2007 - 2008 Budget	No. of Rebates or Participants	2007-2008 Goals	Total Annual Savings (Therms)	2007-2008 Goals
Commercial & Industrial											
C&I and Multifamily High Efficiency Heating Rebate	$4,776	$3,988	$0	$0	$557	$9,321	$1,141,780	6	400	1,100	518,000
C&I Building Practices & Demonstrations	$2,388	$1,994	$0	$0	$278	$4,660	$874,432	0	14	0	355,390
Economic Redevelopment	$2,388	$1,994	$0	$0	$278	$4,660	$1,620,324	0	22	0	312,114
Multi-Family Energy Efficiency	$51,717	$17,667	$25,518	$0	$6,029	$100,930	$3,529,645	0	392	0	794,976
Commercial Energy Efficiency	$7,640	$5,984	$0	$396	$891	$14,911	$2,192,321	2	898	116,682	837,834
Business Analyzer: Internet Audit	$2,420	$2,020	$0	$0	$282	$4,722	$323,651	4	2,830	N/A	N/A
Total C&I	$71,329	$33,647	$25,518	$396	$8,315	$139,204	**$9,682,153**	12	4,556	117,782	2,818,314
PROGRAM TOTALS	**$115,828**	**$44,131**	**$41,682**	**$10,875**	**$13,500**	**$226,016**	**$19,333,336**	**972**	**17,420**	**343,347**	**4,322,566**

* This view does not include status with On-bill Financing.
* The credits found above correct charges to the wrong tasks from previous periods.

KeySpan Energy Delivery
Energy Efficiency Program - Monthly Expenditure Report
April 2008
New York

APPENDIX E - Sample Status Report

Residential

PROGRAM/INITIATIVE	Program Planning & Administration Expenditures	Program Marketing Expenditures	Customer Incentives Expenditures	Program Implementation Expenditures	Evaluation & Market Research Expenditures	Total Expenditures	2007 - 2008 Budget	No. of Rebates or Participants	2007-2008 Goals	Total Annual Savings (Therms)	2007-2008 Goals
Residential											
ENERGY STAR Homes	$1,243	$2,035	($118)	($1,565)	$0	$1,596	$274,309	0	200	0	54,800
High Efficiency Heating Rebate	$4,780	$773	$2,589	($2,007)	$0	$6,134	$1,595,162	10	1,500	1,650	262,500
High Efficiency Water Heating Rebate	$2,726	$773	$0	$0	$0	$3,499	$274,046	9	400	693	31,600
Insulation & Air Sealing	$2,726	$773	$0	$0	$0	$3,499	$666,052	4	500	1,472	184,000
Energy Analysis: Internet Audit Guide	$2,726	$773	$0	$0	$0	$3,499	$31,392	224	2,500	N/A	N/A
Residential Technology Demonstration	$2,738	$755	$0	$0	$0	$3,494	$40,471	0	10	0	3,500
Energy Audit/Home Performance	$1,267	$359	$0	$0	$0	$1,626	$544,470	46	1,000	0	0
Energy Star Products	$5,453	$1,545	$0	$0	$0	$6,998	$342,927	45	5,000	1,359	375,000
Total Residential	**$23,659**	**$7,785**	**$2,471**	**($3,571)**	**$0**	**$30,344**	**$3,768,829**	**338**	**11,110**	**5,174**	**911,400**

PROGRAM/INITIATIVE	Program Planning & Administration Expenditures	Program Marketing Expenditures	Customer Incentives Expenditures	Program Implementation Expenditures	Evaluation & Market Research Expenditures	Total Expenditures	2007 - 2008 Budget	No. of Rebates or Participants	2007-2008 Goals	Total Annual Savings (Therms)	2007-2008 Goals
Low-Income	$0	$0	$0	$0	$0	$0	$5,882,354	0	1,754	0	592,852
Total Low-Income	**$0**	**$0**	**$0**	**$0**	**$0**	**$0**	**$5,882,354**	**0**	**1,754**	**0**	**592,852**

Commercial and Multifamily

PROGRAM/INITIATIVE	Program Planning & Administration Expenditures	Program Marketing Expenditures	Customer Incentives Expenditures	Program Implementation Expenditures	Evaluation & Market Research Expenditures	Total Expenditures	2007 - 2008 Budget	No. of Rebates or Participants	2007-2008 Goals	Total Annual Savings (Therms)	2007-2008 Goals
Commercial & Industrial											
C&I and Multifamily High Efficiency Heating Rebate	$4,520	$1,282	$0	$0	$0	$5,802	$1,141,780	17	400	0	518,000
C&I Building Practices & Demonstrations	$4,232	$641	$0	$559	$0	$5,432	$874,432	0	14	0	355,390
Economic Redevelopment	$6,651	$1,885	$0	$0	$0	$8,536	$1,620,324	0	22	0	312,114
Multi-Family Energy Efficiency	$25,205	$7,144	$0	$0	$0	$32,349	$3,529,645	0	392	0	794,976
Commercial Energy Efficiency	$51,532	$1,917	$10,960	1728	$0	$66,137	$2,192,321	1	898	141,577	837,834
Business Analyzer: Internet Audit	$2,260	$641	$0	$0	$0	$2,901	$323,651	13	2,830	N/A	N/A
Total C&I	**$94,400**	**$13,510**	**$10,960**	**$2,287**	**$0**	**$121,157**	**$9,682,153**	**31**	**4,556**	**141,577**	**2,818,314**
PROGRAM TOTALS	**$118,060**	**$21,295**	**$13,431**	**($1,284)**	**$0**	**$151,501**	**$19,333,336**	**369**	**17,420**	**146,751**	**4,322,566**

* This view does not include status with On-bill Financing.
* The credits found above correct charges to the wrong tasks from previous periods.

KeySpan Energy Delivery
Energy Efficiency Program - Quarter 2
Year to Date June 2008[1]
Long Island

APPENDIX E - Sample Status Report

Residential

PROGRAM/INITIATIVE	Program Planning & Administration Expenditures YTD	Program Marketing Expenditures YTD	Customer Incentives Expenditures YTD	Program Implementation Expenditures YTD	Evaluation & Market Research Expenditures YTD	Total Expenditures YTD	2007 - 2008 Budget YTD	Annual 2007 - 2008 Budget	No. of Rebates or Participants YTD	Participant Goal YTD	Annual Participant 2007-2008 Goals	Total Annual Savings (Therms) YTD	Savings Goal YTD	Annual Savings 2007-2008 Goals
Residential														
ENERGY STAR Homes	$1,891	$5,581	($0)	$8	$166	$7,645	$133,937	$279,036	0	96	200	0	13974	54,800
High Efficiency Heating Rebate	$32,401	$53,171	$71,424	($3,614)	$2,853	$156,234	$676,328	$1,409,016	221	720	1500	36465	126000	262,500
High Efficiency Water Heating Rebate	$22,676	$41,092	$41,100	$2,478	$1,996	$109,342	$114,184	$237,884	185	192	400	14245	15168	31,600
Insulation & Air Sealing	$18,646	$44,069	$24,133	$1,420	$1,642	$89,910	$198,441	$413,419	51	144	300	18768	52992	110,400
Energy Analysis: Internet Audit Guide	$11,509	$33,585	$0	$9,390	$1,013	$55,498	$14,436	$30,075	1679	974	2030	N/A	N/A	N/A
Residential Technology Demonstration	$9,200	$30,659	$3,460	$160	$809	$44,286	$21,456	$44,701	3	10	20	0	3360	7,000
Energy Audit/Home Performance	$41,546	$54,700	$25,981	$74,448	$3,658	$200,334	$196,980	$410,374	239	360	750	N/A	N/A	N/A
Energy Star Products[2]	$32,049	$75,175	$37,433	$7,060	$2,822	$154,538	$86,646	$180,512	873	1536	3200	29300	115200	240,000
Total Residential	**$169,917**	**$338,030**	**$203,531**	**$91,350**	**$14,958**	**$817,787**	**$1,442,408**	**$3,005,017**	**3,251**	**4,032**	**8,400**	**98,778**	**326,694**	**706,300**

PROGRAM/INITIATIVE	Program Planning & Administration Expenditures YTD	Program Marketing Expenditures YTD	Customer Incentives Expenditures YTD	Program Implementation Expenditures YTD	Evaluation & Market Research Expenditures YTD	Total Expenditures YTD	2007 - 2008 Budget YTD	Annual 2007 - 2008 Budget	No. of Rebates or Participants YTD	Participant Goal YTD	Annual Participant 2007-2008 Goals	Total Annual Savings (Therms) YTD	Savings Goal YTD	Annual Savings 2007-2008 Goals
Low-Income	$261,789	$1,777	$763,789	$8,252	$23,048	$1,058,654	$1,411,736	$2,941,116	358	421	878	121,004	142,447	296,764
Total Low-Income	**$261,789**	**$1,777**	**$763,789**	**$8,252**	**$23,048**	**$1,058,654**	**$1,411,736**	**$2,941,116**	**358**	**421**	**878**	**121,004**	**142,447**	**296,764**

Commercial and Multifamily

PROGRAM/INITIATIVE	Program Planning & Administration Expenditures YTD	Program Marketing Expenditures YTD	Customer Incentives Expenditures YTD	Program Implementation Expenditures YTD	Evaluation & Market Research Expenditures YTD	Total Expenditures YTD	2007 - 2008 Budget YTD	Annual 2007 - 2008 Budget	No. of Rebates or Participants YTD	Participant Goal YTD	Annual Participant 2007-2008 Goals	Total Annual Savings (Therms) YTD	Savings Goal YTD	Annual Savings 2007-2008 Goals
Commercial & Industrial														
C&I and Multifamily High Efficiency Heating Rebate	$31,461	$34,173	$16,800	$66,498	$2,770	$151,701	$332,391	$692,481	3	144	300	1020	186480	388,500
C&I Building Practices & Demonstrations	$2,981	$5,387	$0	$5,745	$262	$14,376	$97,979	$204,122	0	3	6	0	73109	152,310
Economic Redevelopment	$5,016	$8,804	$0	$9,925	$442	$24,187	$235,415	$490,447	0	3	7	0	47668	99,309
Multi-Family Energy Efficiency	$12,686	$38,743	$8,503	$123	$1,117	$61,172	$545,522	$1,136,504	4	84	175	46392	170352	354,900
Commercial Energy Efficiency	$13,357	$17,849	$13,305	$7,006	$958	$52,475	$515,029	$1,072,978	27	192	400	79701	179136	373,200
Business Analyzer: Internet Audit	$2,894	$5,414	$0	$5,394	$255	$13,957	$59,521	$124,002	3	520	1084	N/A	N/A	N/A
Total C&I	**$68,395**	**$110,370**	**$38,608**	**$94,690**	**$5,804**	**$317,868**	**$1,785,856**	**$3,720,534**	**37**	**947**	**1,972**	**127,113**	**656,745**	**1,368,219**
On-Bill Financing	**$0**					**$0**	**$160,000**	**333,333**	**N/A**	**N/A**	**N/A**	**N/A**	**N/A**	**N/A**
PROGRAM TOTALS	**$500,101**	**$450,177**	**$1,005,928**	**$194,293**	**$43,810**	**$2,194,309**	**$4,800,000**	**$10,000,000**	**3,646**	**5,400**	**11,250**	**346,895**	**1,125,886**	**2,371,283**

*The credits shown above reflect the sum of charges and corrections from the beginning of the program year.

[1] June YTD includes activity from September 1 through December 31 (Interim Program)

[2] The methodology for capturing participants has changed from per window to per rebate for the windows program within the Energy Star Products program.

KeySpan Energy Delivery
Energy Efficiency Program - Monthly Expenditure Report
Jun-08
Long Island

APPENDIX E - Sample Status Report

Residential

PROGRAM/INITIATIVE	Program Planning & Administration Expenditures	Program Marketing Expenditures	Customer Incentives Expenditures	Program Implementation Expenditures	Evaluation & Market Research Expenditures	Total Expenditures	2007 - 2008 Budget	No. of Rebates or Participants	2007-2008 Goals	Total Annual Savings (Therms)	2007-2008 Goals
Residential											
ENERGY STAR Homes	$0	$0	$0	$0	$0	$0	$279,036	0	200	0	54,800
High Efficiency Heating Rebate	$11,477	$23,834	$36,800	$816	$549	$73,476	$1,409,016	22	1500	3630	262,500
High Efficiency Water Heating Rebate	$9,844	$21,190	$30,600	$918	$471	$63,023	$237,884	24	400	1848	31,600
Insulation & Air Sealing	$6,665	$21,190	$13,939	$559	$319	$42,672	$413,419	5	300	1840	110,400
Energy Analysis: Internet Audit Guide	$3,958	$21,190	$0	$0	$189	$25,337	$30,075	182	2030	N/A	N/A
Residential Technology Demonstration	$3,958	$21,190	$0	$0	$189	$25,337	$44,701	0	20	0	7,000
Energy Audit/Home Performance	$9,407	$21,151	$9,792	$19,422	$451	$60,223	$410,374	22	750	N/A	N/A
Energy Star Products	$8,993	$42,380	$5,250	$518	$430	$57,571	$180,512	107	3200	3068	240,000
Total Residential	**$54,301**	**$172,125**	**$96,381**	**$22,233**	**$2,598**	**$347,637**	**$3,005,017**	**362**	**8,400**	**10,386**	**706,300**

PROGRAM/INITIATIVE	Program Planning & Administration Expenditures	Program Marketing Expenditures	Customer Incentives Expenditures	Program Implementation Expenditures	Evaluation & Market Research Expenditures	Total Expenditures	2007 - 2008 Budget	No. of Rebates or Participants	2007-2008 Goals	Total Annual Savings (Therms)	2007-2008 Goals
Low-Income	$0	$0	$0	$0	$0	$0	$2,941,116	0	878	0	296,764
Total Low-Income	**$0**	**$0**	**$0**	**$0**	**$0**	**$0**	**$2,941,116**	**0**	**878**	**0**	**296,764**

Commercial and Multifamily

PROGRAM/INITIATIVE	Program Planning & Administration Expenditures	Program Marketing Expenditures	Customer Incentives Expenditures	Program Implementation Expenditures	Evaluation & Market Research Expenditures	Total Expenditures	2007 - 2008 Budget	No. of Rebates or Participants	2007-2008 Goals	Total Annual Savings (Therms)	2007-2008 Goals
Commercial & Industrial											
C&I and Multifamily High Efficiency Heating Rebate	$4,705	$726	$14,200	$10,264	$225	$30,120	$692,481	2	300	879	388,500
C&I Building Practices & Demonstrations	$331	$363	$0	$1,408	$16	$2,118	$204,122	0	6	0	152,310
Economic Redevelopment	$670	$1,972	$0	$1,613	$32	$4,287	$490,447	0	7	0	99,309
Multi-Family Energy Efficiency	$1,553	$4,650	$3,608	$55	$74	$9,940	$1,136,504	0	175	0	354,900
Commercial Energy Efficiency	$2,803	$1,088	$0	$3,117	$53	$7,062	$1,072,978	10	400	10,709	373,200
Business Analyzer: Internet Audit	$68	$363	$0	$0	$3	$434	$124,002	0	1,084	N/A	N/A
Total C&I	**$10,128**	**$9,162**	**$17,808**	**$16,457**	**$403**	**$53,959**	**$3,720,534**	**12**	**1,972**	**11,588**	**1,368,219**
PROGRAM TOTALS	**$64,429**	**$181,287**	**$114,189**	**$38,690**	**$3,001**	**$401,596**	**$9,666,667**	**374**	**11,250**	**21,974**	**2,371,283**

* This view does not include status with On-bill Financing.

KeySpan Energy Delivery
Energy Efficiency Program - Monthly Expenditure Report
May-08
Long Island

APPENDIX E - Sample Status Report

Residential

PROGRAM/INITIATIVE	Program Planning & Administration Expenditures	Program Marketing Expenditures	Customer Incentives Expenditures	Program Implementation Expenditures	Evaluation & Market Research Expenditures	Total Expenditures	2007 - 2008 Budget	No. of Rebates or Participants	2007-2008 Goals	Total Annual Savings (Therms)	2007-2008 Goals
Residential											
ENERGY STAR Homes	$91	$3,443	($603)	($2,724)	$23	$229	$279,036	0	200	0	54,800
High Efficiency Heating Rebate	$358	$460	$0	$0	$89	$907	$1,409,016	41	1500	6765	262,500
High Efficiency Water Heating Rebate	$348	$448	$0	$0	$87	$883	$237,884	49	400	3773	31,600
Insulation & Air Sealing	$3,646	$448	$4,032	$209	$908	$9,243	$413,419	11	300	4048	110,400
Energy Analysis: Internet Audit Guide	$358	$460	$0	$0	$89	$907	$30,075	222	2030	N/A	N/A
Residential Technology Demonstration	$1,633	$428	$1,655	$0	$405	$4,122	$44,701	2	20	0	7,000
Energy Audit/Home Performance	$13,616	$1	$7,724	$9,788	$3,392	$34,522	$410,374	23	750	0	0
Energy Star Products	$10,992	$1,649	$10,510	$1,980	$2,738	$27,868	$180,512	135	3200	5383	240,000
Total Residential	**$31,041**	**$7,337**	**$23,318**	**$9,254**	**$7,731**	**$78,681**	**$3,005,017**	**483**	**8,400**	**19,969**	**706,300**

PROGRAM/INITIATIVE	Program Planning & Administration Expenditures	Program Marketing Expenditures	Customer Incentives Expenditures	Program Implementation Expenditures	Evaluation & Market Research Expenditures	Total Expenditures	2007 - 2008 Budget	No. of Rebates or Participants	2007-2008 Goals	Total Annual Savings (Therms)	2007-2008 Goals
Low-Income		$0	$0	$0	$0	$0	$2,941,116	129	878	43,602	296,764
Total Low-Income	**$0**	**$0**	**$0**	**$0**	**$0**	**$0**	**$2,941,116**	**129**	**878**	**43,602**	**296,764**

Commercial and Multifamily

PROGRAM/INITIATIVE	Program Planning & Administration Expenditures	Program Marketing Expenditures	Customer Incentives Expenditures	Program Implementation Expenditures	Evaluation & Market Research Expenditures	Total Expenditures	2007 - 2008 Budget	No. of Rebates or Participants	2007-2008 Goals	Total Annual Savings (Therms)	2007-2008 Goals
Commercial & Industrial											
C&I and Multifamily High Efficiency Heating Rebate	$2,301	$2,960	$0	$0	$573	$5,835	$692,481	1	300	141	388,500
C&I Building Practices & Demonstrations	$1,151	$1,480	$0	$0	$287	$2,917	$204,122	0	6	0	152,310
Economic Redevelopment	$1,151	$1,480	$0	$0	$287	$2,917	$490,447	0	7	0	99,309
Multi-Family Energy Efficiency	$13,742	$16,925	$750	$0	$3,423	$34,840	$1,136,504	1	175	38,318	354,900
Commercial Energy Efficiency	$3,663	$4,322	$0	$389	$912	$9,287	$1,072,978	5	400	13,000	373,200
Business Analyzer: Internet Audit	$1,151	$1,480	$0	$0	$287	$2,917	$124,002	3	1,084	N/A	N/A
Total C&I	**$23,158**	**$28,647**	**$750**	**$389**	**$5,769**	**$58,713**	**$3,720,534**	**10**	**1,972**	**51,459**	**1,368,219**
PROGRAM TOTALS	**$54,199**	**$35,985**	**$24,068**	**$9,643**	**$13,500**	**$137,395**	**$9,666,667**	**622**	**11,250**	**115,030**	**2,371,283**

* This view does not include status with On-bill Financing.
* The credits found above correct charges to the wrong tasks from previous periods.

KeySpan Energy Delivery
Energy Efficiency Program - Monthly Expenditure Report
Apr-08
Long Island

APPENDIX E - Sample Status Report

Residential

PROGRAM/INITIATIVE	Program Planning & Administration Expenditures	Program Marketing Expenditures	Customer Incentives Expenditures	Program Implementation Expenditures	Evaluation & Market Research Expenditures	Total Expenditures	2007 - 2008 Budget	No. of Rebates or Participants	2007-2008 Goals	Total Annual Savings (Therms)	2007-2008 Goals
Residential											
ENERGY STAR Homes	$142	$1,050	($50)	($918)	$0	$223	$279,036	0	200	0	54800
High Efficiency Heating Rebate	($2,846)	$269	$2,651	($4,671)	$0	($4,597)	$1,409,016	31	1500	5115	262500
High Efficiency Water Heating Rebate	$287	$177	$0	$0	$0	$464	$237,884	30	400	2310	31600
Insulation & Air Sealing	$287	$177	$0	$0	$0	$464	$413,419	1	300	368	110400
Energy Analysis: Internet Audit Guide	$287	$177	$0	$0	$0	$464	$30,075	154	2030	N/A	N/A
Residential Technology Demonstration	$295	$169	$0	$0	$0	$464	$44,701	0	20	0	7000
Energy Audit/Home Performance	$0	$0	$0	$0	$0	$0	$410,374	16	750	0	0
Energy Star Products	$4,967	$704	$0	$2,353	$0	$8,023	$180,512	119	3200	3689	240000
Total Residential	**$3,421**	**$2,722**	**$2,600**	**($3,236)**	**$0**	**$5,507**	**$3,005,017**	**351**	**8,400**	**11,482**	**706,300**

PROGRAM/INITIATIVE	Program Planning & Administration Expenditures	Program Marketing Expenditures	Customer Incentives Expenditures	Program Implementation Expenditures	Evaluation & Market Research Expenditures	Total Expenditures	2007 - 2008 Budget	No. of Rebates or Participants	2007-2008 Goals	Total Annual Savings (Therms)	2007-2008 Goals
Low-Income	$0	$0	$0	$0	$0	$0	$2,941,116	0	878	0	296,764
Total Low-Income	**$0**	**$0**	**$0**	**$0**	**$0**	**$0**	**$2,941,116**	**0**	**878**	**0**	**296,764**

Commercial and Multifamily

PROGRAM/INITIATIVE	Program Planning & Administration Expenditures	Program Marketing Expenditures	Customer Incentives Expenditures	Program Implementation Expenditures	Evaluation & Market Research Expenditures	Total Expenditures	2007 - 2008 Budget	No. of Rebates or Participants	2007-2008 Goals	Total Annual Savings (Therms)	2007-2008 Goals
Commercial & Industrial											
C&I and Multifamily High Efficiency Heating Rebate	$1,514	$932	$0	$0	$0	$2,446	$692,481	0	300	0	388,500
C&I Building Practices & Demonstrations	$2,050	$557	$0	$705	$0	$3,311	$204,122	0	6	0	152,310
Economic Redevelopment	$777	$478	$0	$0	$0	$1,256	$490,447	0	7	0	99,309
Multi-Family Energy Efficiency	$19,054	$7,512	$4,145	$68	$0	$30,779	$1,136,504	0	175	0	354,900
Commercial Energy Efficiency	$31,989	$3,255	$13,305	$3,126	$0	$51,675	$1,072,978	0	400	0	373,200
Business Analyzer: Internet Audit	$777	$478	$0	$0	$0	$1,256	$124,002	0	1,084	N/A	N/A
Total C&I	**$56,162**	**$13,213**	**$17,450**	**$3,899**	**$0**	**$90,724**	**$3,720,534**	**0**	**1,972**	**0**	**1,368,219**
PROGRAM TOTALS	**$59,583**	**$15,934**	**$20,050**	**$663**	**$0**	**$96,231**	**$9,666,667**	**351**	**11,250**	**11,482**	**2,371,283**

* This view does not include status with On-bill Financing.

KeySpan Energy Delivery
Energy Efficiency Program - Year To Date
Dec-07
New York

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Residential

PROGRAM/INITIATIVE	Program Planning & Administration Expenditures YTD	Program Marketing Expenditures YTD	Customer Incentives Expenditures YTD	Program Implementation Expenditures YTD	Evaluation & Market Research Expenditures YTD	Total Expenditures YTD	2007 - 2008 Budget YTD	Annual 2007 - 2008 Budget	No. of Rebates or Participants YTD	YTD Participant Goal	Annual Participant 2007-2008 Goals	Total Annual Savings (Therms) YTD	YTD Savings Goal	Annual Savings 2007-2008 Goals
Residential														
ENERGY STAR Homes	$0	$0	$0	$0	$0	$0	$27,431	$274,309	0	20	200	0	5,480	54,800
High Efficiency Heating Rebate	$2,163	$23,937	$2,800	$157	$341	$29,398	$159,516	$1,595,162	4	150	1,500	660	26,250	262,500
High Efficiency Water Heating Rebate	$226	$2,501	$300	$9	$36	$3,072	$27,405	$274,046	1	40	400	77	3,160	31,600
Insulation & Air Sealing	$1,520	$18,218	$0	$684	$240	$20,662	$66,605	$666,052	5	50	500	1,840	18,400	184,000
Energy Analysis: Internet Audit Guide	$9,293	$102,849	$0	$12,705	$1,465	$126,312	$3,139	$31,392	861	250	2,500	N/A	N/A	N/A
Residential Technology Demonstration	$0	$0	$0	$0	$0	$0	$4,047	$40,471	0	1	10	0	350	3,500
Energy Audit/Home Performance	$0	$0	$0	$0	$0	$0	$54,447	$544,470	46	100	1,000	N/A	N/A	N/A
Energy Star Products[2]	$1,557	$17,228	$1,930	$198	$245	$21,159	$34,293	$342,927	156	500	5,000	4,951	37,500	375,000
Total Residential	**$14,758**	**$164,734**	**$5,030**	**$13,754**	**$2,327**	**$200,602**	**$376,883**	**$3,768,829**	**1,073**	**1,111**	**11,110**	**7,528**	**91,140**	**911,400**

PROGRAM/INITIATIVE	Program Planning & Administration Expenditures YTD	Program Marketing Expenditures YTD	Customer Incentives Expenditures YTD	Program Implementation Expenditures YTD	Evaluation & Market Research Expenditures YTD	Total Expenditures YTD	2007 - 2008 Budget YTD	Annual 2007 - 2008 Budget	No. of Rebates or Participants YTD	YTD Participant Goal	Annual Participant 2007-2008 Goals	Total Annual Savings (Therms) YTD	YTD Savings Goal	Annual Savings 2007-2008 Goals
Low-Income	$346,831	$0	$454,956	$19,248	$54,691	$875,726	$588,235	**$5,882,354**	0	175	1,754	0	59,285	**592,852**
Total Low-Income	**$346,831**	**$0**	**$454,956**	**$19,248**	**$54,691**	**$875,726**	**$588,235**	**$5,882,354**	**0**	**175**	**1,754**	**0**	**59,285**	**592,852**

Commercial & Industrial

PROGRAM/INITIATIVE	Program Planning & Administration Expenditures YTD	Program Marketing Expenditures YTD	Customer Incentives Expenditures YTD	Program Implementation Expenditures YTD	Evaluation & Market Research Expenditures YTD	Total Expenditures YTD	2007 - 2008 Budget YTD	Annual 2007 - 2008 Budget	No. of Rebates or Participants YTD	YTD Participant Goal	Annual Participant 2007-2008 Goals	Total Annual Savings (Therms) YTD	YTD Savings Goal	Annual Savings 2007-2008 Goals
Commercial & Industrial														
C&I and Multifamily High Efficiency Heating Rebate	$4,936	$59,311	$2,000	$68	$778	$67,093	$114,178	$1,141,780	0	40	400	0	51,800	518,000
C&I Building Practices & Demonstrations	$0	$0	$0	$0	$0	$0	$87,443	$874,432	0	1	14	0	35,539	355,390
Economic Redevelopment	$0	$0	$0	$0	$0	$0	$162,032	$1,620,324	0	2	22	0	31,211	312,114
Multi-Family Energy Savings Plan	$0	$0	$0	$0	$0	$0	$352,965	$3,529,645	4	39	392	0	79,498	794,976
C&I Energy Savings Plan	$0	$0	$0	$0	$0	$0	$219,232	$2,192,321	8	90	898	37,328	83,783	837,834
Business Analyzer: Internet Audit	$2,271	$25,131	$0	$320	$3,143	$30,865	$32,365	$323,651	10	283	2,830	N/A	N/A	N/A
Total C&I	$7,207	$84,442	$2,000	$388	$3,921	$97,958	**$968,215**	**$9,682,153**	22	456	4,556	37,328	281,831	2,818,314
On-Bill Financing[1]						**N/A**	**N/A**	**$666,667**	**N/A**	**N/A**	**N/A**	**N/A**	**N/A**	**N/A**
PROGRAM TOTALS	**$368,796**	**$249,176**	**$461,986**	**$33,390**	**$60,939**	**$1,174,286**	**$1,933,334**	**$20,000,003**	**1,095**	**1,742**	**17,420**	**44,856**	**432,256**	**4,322,566**

[1]On-Bill Financing agreed to be included in the Permanent Budget (2-26-08 Collaborative meeting)

[2]The methodology for capturing participants has changed from per window to per rebate for the windows program within the Energy Star Products program.

KeySpan Energy Delivery
Energy Efficiency Program - Year to Date
Dec-07
Long Island

Residential

PROGRAM/INITIATIVE	Program Planning & Administration Expenditures YTD	Program Marketing Expenditures YTD	Customer Incentives Expenditures YTD	Program Implementation Expenditures YTD	Evaluation & Market Research Expenditures YTD	Total Expenditures YTD	2007 - 2008 Budget YTD	Annual 2007 - 2008 Budget	No. of Rebates or Participants YTD	YTD Participant Goal	Annual Participant 2007-2008 Goals	Total Annual Savings (Therms) YTD	YTD Savings Goal	Annual Savings 2007-2008 Goals
Residential														
ENERGY STAR Homes	$0	$0	$0	$0	$0	$0	$27,904	$279,036	-	20	200	-	5,480	54,800
High Efficiency Heating Rebate	$2,797	$20,804	$3,500	$161	$426	$27,688	$140,902	$1,409,016	21	150	1,500	3,465	26,250	262,500
High Efficiency Water Heating Rebate	$2,319	$19,052	$1,200	$36	$354	$22,961	$23,788	$237,884	10	40	400	770	3,160	31,600
Insulation & Air Sealing	$595	$4,909	$0	$293	$91	$5,888	$41,342	$413,419	3	30	300	1,104	11,040	110,400
Energy Analysis: Internet Audit Guide	$5,679	$42,242	$0	$7,434	$866	$56,221	$3,008	$30,075	636	203	2,030	N/A	N/A	N/A
Residential Technology Demonstration	$756	$5,625	$990	$0	$115	$7,486	$4,470	$44,701	1	2	20	-	700	7,000
Energy Audit/Home Performance	$0	$0	$0	$0	$0	$0	$41,037	$410,374	64	75	750	N/A	N/A	N/A
Energy Star Products[2]	$2,887	$21,470	$3,383	$395	$440	$28,575	$18,051	$180,512	149	320	3,200	4,962	24,000	240,000
Total Residential	**$15,033**	**$114,103**	**$9,073**	**$8,319**	**$2,292**	**$148,819**	**$300,502**	**$3,005,017**	**884**	**840**	**8,400**	**10,301**	**70,630**	**706,300**

PROGRAM/INITIATIVE	Program Planning & Administration Expenditures YTD	Program Marketing Expenditures YTD	Customer Incentives Expenditures YTD	Program Implementation Expenditures YTD	Evaluation & Market Research Expenditures YTD	Total Expenditures YTD	2007 - 2008 Budget YTD	Annual 2007 - 2008 Budget	No. of Rebates or Participants YTD	YTD Participant Goal	Annual Participant 2007-2008 Goals	Total Annual Savings (Therms) YTD	YTD Savings Goal	2007-2008 Goals
Low-Income	$155,310	$0	$195,044	$8,252	$23,677	$382,284	$294,112	**$2,941,116**	-	88	878	-	29,676	**296,764**
Total Low-Income	**$155,310**	**$0**	**$195,044**	**$8,252**	**$23,677**	**$382,284**	**$294,112**	**$2,941,116**	**0**	**88**	**878**	**0**	**29,676**	**296,764**

Commercial & Industrial

PROGRAM/INITIATIVE	Program Planning & Administration Expenditures YTD	Program Marketing Expenditures YTD	Customer Incentives Expenditures YTD	Program Implementation Expenditures YTD	Evaluation & Market Research Expenditures YTD	Total Expenditures YTD	2007 - 2008 Budget YTD	Annual 2007 - 2008 Budget	No. of Rebates or Participants YTD	YTD Participant Goal	Annual Participant 2007-2008 Goals	Total Annual Savings (Therms) YTD	YTD Savings Goal	2007-2008 Goals
Commercial & Industrial														
C&I and Multifamily High Efficiency Heating Rebate	$1,989	$17,400	$0	$0	$303	$19,693	$69,248	$692,481	-	30	300	-	38,850	388,500
C&I Building Practices & Demonstrations	$0	$0	$0	$0	$0	$0	$20,412	$204,122	-	1	6	-	15,231	152,310
Economic Redevelopment	$0	$0	$0	$0	$0	$0	$49,045	$490,447	-	1	7	-	9,930	99,309
Multi-Family Energy Savings Plan	$0	$0	$0	$0	$0	$0	$113,650	$1,136,504	-	18	175	-	35,490	354,900
C&I Energy Savings Plan	$0	$0	$0	$0	$0	$0	$107,298	$1,072,978	12	40	400	55,992	37,320	373,200
Business Analyzer: Internet Audit	$2,194	$16,322	$0	$2,872	$335	$21,724	$12,400	$124,002	-	108	1,084	N/A	N/A	N/A
Total C&I	**$4,184**	**$33,723**	**$0**	**$2,872**	**$638**	**$41,417**	**$372,053**	**$3,720,534**	**12**	**197**	**1,972**	**55,992**	**136,821**	**1,368,219**
On-Bill Financing[1]						**N/A**	**N/A**	**$333,333**	**N/A**	**N/A**	**N/A**	**N/A**	**N/A**	**N/A**
PROGRAM TOTALS	**$174,527**	**$147,825**	**$204,117**	**$19,444**	**$26,607**	**$572,520**	**$966,667**	**$10,000,000**	**896**	**1,125**	**11,250**	**66,293**	**237,127**	**2,371,283**

[1] **On-Bill Financing agreed to be included in the Permanent Budget (2-26-08 Collaborative meeting**

[2] **The methodology for capturing participants has changed from per window to per rebate for the windows program within the Energy Star Products program.**

KeySpan Energy Delivery
Energy Efficiency Program - Quarter 1
Year to Date March 2008[1]
New York

APPENDIX E - Sample Status Report

RESIDENTIAL

PROGRAM/INITIATIVE	Program Planning & Administration Expenditures YTD	Program Marketing Expenditures YTD	Customer Incentives Expenditures YTD	Program Implementation Expenditures YTD	Evaluation & Market Research Expenditures YTD	Total Expenditures YTD	2007 - 2008 Budget YTD	Annual 2007 - 2008 Budget	No. of Rebates or Participants YTD	Participant Goal YTD	Annual Participant 2007-2008 Goals	Total Annual Savings (Therms) YTD	Savings Goal YTD	Annual Savings 2007-2008 Goals
Residential														
ENERGY STAR Homes	$3,065	$4,775	$1,524	$1,922	$273	$11,558	$69,949	$274,309	0	51	200	0	13,974	54,800
High Efficiency Heating Rebate	$4,364	$38,047	$3,400	$76	$388	$46,276	$406,766	$1,595,162	20	383	1,500	3,300	66,938	262,500
High Efficiency Water Heating Rebate	$3,527	$32,321	$1,200	$36	$314	$37,398	$69,882	$274,046	10	102	400	770	8,058	31,600
Insulation & Air Sealing	$8,414	$74,168	$4,605	$1,279	$749	$89,215	$169,843	$666,052	23	128	500	8,464	46,920	184,000
Energy Analysis: Internet Audit Guide	$9,736	$74,785	$0	$17,849	$867	$103,237	$8,005	$31,392	1,444	638	2,500	N/A	N/A	N/A
Residential Technology Demonstration	$4,987	$25,717	$1,524	$0	$273	$32,500	$10,320	$40,471	0	3	10	0	893	3,500
Energy Audit/Home Performance	$21,317	$149,625	$6,297	$46,897	$1,897	$226,033	$138,840	$544,470	163	255	1,000	N/A	N/A	N/A
Energy Star Products[2]	$9,037	$78,206	$7,050	$729	$804	$95,827	$87,446	$342,927	288	1,275	5,000	9,436	95,625	375,000
Total Residential	**$64,447**	**$477,644**	**$25,600**	**$68,787**	**$5,565**	**$642,044**	**$961,051**	**$3,768,829**	**1,948**	**2,833**	**11,110**	**21,970**	**232,407**	**911,400**

PROGRAM/INITIATIVE	Program Planning & Administration Expenditures YTD	Program Marketing Expenditures YTD	Customer Incentives Expenditures YTD	Program Implementation Expenditures YTD	Evaluation & Market Research Expenditures YTD	Total Expenditures YTD	2007 - 2008 Budget YTD	Annual 2007 - 2008 Budget	No. of Rebates or Participants YTD	Participant Goal YTD	Annual Participant 2007-2008 Goals	Total Annual Savings (Therms) YTD	Savings Goal YTD	Annual Savings 2007-2008 Goals
Low-Income	$564,159	$3,642	$1,490,205	$19,248	$50,217	$2,127,472	$1,500,000	**$5,882,354**	195	447	1,754	65,910	151,177	**592,852**
Total Low-Income	**$564,159**	**$3,642**	**$1,490,205**	**$19,248**	**$50,217**	**$2,127,472**	**$1,500,000**	**$5,882,354**	**195**	**447**	**1,754**	**65,910**	**151,177**	**592,852**

Commercial and Multifamily

PROGRAM/INITIATIVE	Program Planning & Administration Expenditures YTD	Program Marketing Expenditures YTD	Customer Incentives Expenditures YTD	Program Implementation Expenditures YTD	Evaluation & Market Research Expenditures YTD	Total Expenditures YTD	2007 - 2008 Budget YTD	Annual 2007 - 2008 Budget	No. of Rebates or Participants YTD	Participant Goal YTD	Annual Participant 2007-2008 Goals	Total Annual Savings (Therms) YTD	Savings Goal YTD	Annual Savings 2007-2008 Goals
Commercial & Industrial														
C&I and Multifamily High Efficiency Heating Rebate	$25,982	$184,995	$2,000	$60,213	$2,313	$275,503	$291,154	$1,141,780	0	102	400	0	132,090	518,000
C&I Building Practices & Demonstrations	$1,420	$10,764	$0	$2,747	$126	$15,058	$222,980	$874,432	0	4	14	0	90,624	355,390
Economic Redevelopment	$2,769	$20,103	$0	$6,242	$246	$29,360	$413,183	$1,620,324	0	6	22	0	79,589	312,114
Multi-Family Energy Efficiency	$415	$3,952	$0	$0	$37	$4,404	$900,059	$3,529,645	4	100	392	0	202,719	794,976
Commercial Energy Efficiency	$2,375	$13,967	$0	$367	$141	$16,850	$559,042	$2,192,321	8	229	898	37,328	213,648	837,834
Business Analyzer: Internet Audit	$2,093	$17,293	$0	$2,798	$2,996	$25,181	$82,531	$323,651	32	722	2,830	N/A	N/A	N/A
Total C&I	**$35,054**	**$251,074**	**$2,000**	**$72,367**	**$5,860**	**$366,356**	**$2,468,949**	**$9,682,153**	**44**	**1,162**	**4,556**	**37,328**	**718,670**	**2,818,314**
On-Bill Financing	**$0**					**$0**	**$170,000**	**$666,667**	**N/A**	**N/A**	**N/A**	**N/A**	**N/A**	**N/A**
PROGRAM TOTALS	**$663,661**	**$732,361**	**$1,517,806**	**$160,402**	**$61,642**	**$3,135,871**	**$5,100,001**	**$20,000,003**	**2,187**	**4,442**	**17,420**	**125,208**	**1,102,254**	**4,322,566**

[1]March YTD includes activity from September 1 through December 31 (Interim Program)

[2]The methodology for capturing participants has changed from per window to per rebate for the windows program within the Energy Star Products program.

KeySpan Energy Delivery
Energy Efficiency Program - Monthly Expenditure Report
Mar 08
New York

APPENDIX E - Sample Status Report

Residential

PROGRAM/INITIATIVE	Program Planning & Administration Expenditures	Program Marketing Expenditures	Customer Incentives Expenditures	Program Implementation Expenditures	Evaluation & Market Research Expenditures	Total Expenditures	2007 - 2008 Budget	No. of Rebates or Participants	2007-2008 Goals	Total Annual Savings (Therms)	2007-2008 Goals
Residential											
ENERGY STAR Homes	$805	$4,764	$0	$340	$2	$5,910	$274,309	0	200	0	54,800
High Efficiency Heating Rebate	$464	$5,553	$0	($2,157)	$1	$3,861	$1,595,162	10	1,500	1,650	262,500
High Efficiency Water Heating Rebate	$805	$5,889	$0	$0	$2	$6,695	$274,046	6	400	462	31,600
Insulation & Air Sealing	$893	$6,160	$102	$274	$2	$7,430	$666,052	9	500	3,312	184,000
Energy Analysis: Internet Audit Guide	$1,344	$6,422	$0	$3,419	$3	$11,188	$31,392	259	2,500	N/A	N/A
Residential Technology Demonstration	$1,144	$5,549	$0	$0	$2	$6,695	$40,471	0	10	0	3,500
Energy Audit/Home Performance	$360	$2,632	$0	$0	$1	$2,992	$544,470	49	1,000	0	0
Energy Star Products	$2,420	$12,578	$4,670	$463	$5	$20,135	$342,927	65	5,000	2,065	375,000
Total Residential	**$8,234**	**$49,546**	**$4,772**	**$2,338**	**$16**	**$64,906**	**$3,768,829**	**398**	**11,110**	**7,489**	**911,400**

PROGRAM/INITIATIVE	Program Planning & Administration Expenditures	Program Marketing Expenditures	Customer Incentives Expenditures	Program Implementation Expenditures	Evaluation & Market Research Expenditures	Total Expenditures	2007 - 2008 Budget	No. of Rebates or Participants	2007-2008 Goals	Total Annual Savings (Therms)	2007-2008 Goals
Low-Income	$163,476	$1,864	$1,035,250	$0	$341	$1,200,932	**$5,882,354**	0	1,754	0	**592,852**
Total Low-Income	**$163,476**	**$1,864**	**$1,035,250**	**$0**	**$341**	**$1,200,932**	**$5,882,354**	**0**	**1,754**	**0**	**592,852**

Commercial and Multifamily

PROGRAM/INITIATIVE	Program Planning & Administration Expenditures	Program Marketing Expenditures	Customer Incentives Expenditures	Program Implementation Expenditures	Evaluation & Market Research Expenditures	Total Expenditures	2007 - 2008 Budget	No. of Rebates or Participants	2007-2008 Goals	Total Annual Savings (Therms) [2]	2007-2008 Goals
Commercial & Industrial											
C&I and Multifamily High Efficiency Heating Rebate	$299	$1,283	$0	$906	$1	$2,488	$1,141,780	0	400	0	518,000
C&I Building Practices & Demonstrations	$85	$578	$0	$46	$0	$709	$874,432	0	14	0	355,390
Economic Redevelopment	$94	$587	$0	$104	$0	$786	$1,620,324	0	22	0	312,114
Multi-Family Energy Efficiency	$87	$639	$0	$0	$0	$726	$3,529,645	0	392	0	794,976
Commercial Energy Efficiency	$295	$1,654	$0	0	$0	$1,950	$2,192,321	0	898	0	837,834
Business Analyzer: Internet Audit	$78	$571	$0	$0	$0	$649	$323,651	11	2,830	N/A	N/A
Total C&I	**$939**	**$5,312**	**$0**	**$1,056**	**$2**	**$7,309**	**$9,682,153**	**11**	**4,556**	**0**	**2,818,314**
PROGRAM TOTALS	**$172,649**	**$56,723**	**$1,040,021**	**$3,394**	**$359**	**$1,273,146**	**$19,333,336**	**409**	**17,420**	**7,489**	**4,322,566**

* This view does not include status with On-bill Financing.

KeySpan Energy Delivery
Energy Efficiency Program - Monthly Expenditure Report
Feb-08
New York

APPENDIX E - Sample Status Report

Residential

PROGRAM/INITIATIVE	Program Planning & Administration Expenditures	Program Marketing Expenditures	Customer Incentives Expenditures	Program Implementation Expenditures	Evaluation & Market Research Expenditures	Total Expenditures	2007 - 2008 Budget	No. of Rebates or Participants	2007-2008 Goals	Total Annual Savings (Therms)	2007-2008 Goals
Residential											
ENERGY STAR Homes	$1,366	$0	$118	$1,582	$6	$3,071	$274,309	0	200	0	54,800
High Efficiency Heating Rebate	$3,482	$17,360	$600	$2,034	$15	$23,490	$1,595,162	3	1,500	495	262,500
High Efficiency Water Heating Rebate	$2,111	$11,192	$900	$27	$9	$14,238	$274,046	0	400	0	31,600
Insulation & Air Sealing	$8,086	$46,048	$1,467	($1,084)	$34	$54,551	$666,052	6	500	2,208	184,000
Energy Analysis: Internet Audit Guide	$1,645	$9,099	$0	$348	$7	$11,100	$31,392	181	2,500	N/A	N/A
Residential Technology Demonstration	$2,948	$6,142	$118	$0	$6	$9,213	$40,471	0	10	0	3,500
Energy Audit/Home Performance	$43,992	$199,411	$6,297	$46,897	$186	$296,782	$544,470	50	1,000	0	0
Energy Star Products	$2,731	$15,684	$0	$0	$12	$18,427	$342,927	34	5,000	1,363	375,000
Total Residential	**$66,361**	**$304,937**	**$9,499**	**$49,803**	**$273**	**$430,873**	**$3,768,829**	**274**	**11,110**	**4,066**	**911,400**

PROGRAM/INITIATIVE	Program Planning & Administration Expenditures	Program Marketing Expenditures	Customer Incentives Expenditures	Program Implementation Expenditures	Evaluation & Market Research Expenditures	Total Expenditures	2007 - 2008 Budget	No. of Rebates or Participants	2007-2008 Goals	Total Annual Savings (Therms)	2007-2008 Goals
Low-Income	$0	$0	$0	$0	$0	$0	**$5,882,354**	0	1,754	0	**592,852**
Total Low-Income	**$0**	**$0**	**$0**	**$0**	**$0**	**$0**	**$5,882,354**	**0**	**1,754**	**0**	**592,852**

PROGRAM/INITIATIVE	Program Planning & Administration Expenditures	Program Marketing Expenditures	Customer Incentives Expenditures	Program Implementation Expenditures	Evaluation & Market Research Expenditures	Total Expenditures	2007 - 2008 Budget *	No. of Rebates or Participants	2007-2008 Goals	Total Annual Savings (Therms) [2]	2007-2008 Goals
Commercial & Industrial											
C&I and Multifamily High Efficiency Heating Rebate	$9,588	$44,238	$0	$10,815	$40	$64,681	$1,141,780	0	400	0	518,000
C&I Building Practices & Demonstrations	$889	$4,556	$0	$548	$4	$5,996	$874,432	0	14	0	355,390
Economic Redevelopment	$1,449	$7,074	$0	$1,244	$6	$9,773	$1,620,324	0	22	0	312,114
Multi-Family Energy Efficiency	$449	$2,577	$0	$0	$2	$3,028	$3,529,645	0	392	0	794,976
Commercial Energy Efficiency	$2,654	$10,352	$0	$0	$8	$13,014	$2,192,321	0	898	0	837,834
Business Analyzer: Internet Audit	$2,440	$11,535	$0	$2,479	$10	$16,464	$323,651	0	2,830	N/A	N/A
Total C&I	$17,469	$80,332	$0	$15,085	$71	$112,957	**$9,682,153**	0	4,556	0	2,818,314
PROGRAM TOTALS	**$83,829**	**$385,269**	**$9,499**	**$64,889**	**$344**	**$543,830**	**$19,333,336**	**274**	**17,420**	**4,066**	**4,322,566**

* This view does not include status with On-bill Financing.

KeySpan Energy Delivery
Energy Efficiency Program - Monthly Expenditure Report
Jan-08
New York

APPENDIX E - Sample Status Report

Residential

PROGRAM/INITIATIVE	Program Planning & Administration Expenditures	Program Marketing Expenditures	Customer Incentives Expenditures	Program Implementation Expenditures	Evaluation & Market Research Expenditures	Total Expenditures	2007 - 2008 Budget	No. of Rebates or Participants	2007-2008 Goals	Total Annual Savings (Therms)	2007-2008 Goals
Residential											
ENERGY STAR Homes	$793	$0	$1,406	$0	$0	$2,199	$274,309	0	200	0	54,800
High Efficiency Heating Rebate	$816	$2,035	$0	$42	$0	$2,893	$1,595,162	3	1,500	495	262,500
High Efficiency Water Heating Rebate	$793	$2,017	$0	$0	$0	$2,809	$274,046	3	400	231	31,600
Insulation & Air Sealing	$2,658	$2,321	$3,037	$1,405	$0	$9,421	$666,052	3	500	1,104	184,000
Energy Analysis: Internet Audit Guide	$1,569	$2,614	$0	$1,377	$0	$5,560	$31,392	143	2,500	N/A	N/A
Residential Technology Demonstration	$793	$610	$1,406	$0	$0	$2,809	$40,471	0	10	0	3,500
Energy Audit/Home Performance	$5	$12	$0	$0	$0	$17	$544,470	18	1,000	0	0
Energy Star Products	$1,877	$4,258	$450	$68	$0	$6,652	$342,927	33	5,000	1,057	375,000
Total Residential	**$9,302**	**$13,867**	**$6,299**	**$2,891**	**$0**	**$32,360**	**$3,768,829**	**203**	**11,110**	**2,887**	**911,400**

PROGRAM/INITIATIVE	Program Planning & Administration Expenditures	Program Marketing Expenditures	Customer Incentives Expenditures	Program Implementation Expenditures	Evaluation & Market Research Expenditures	Total Expenditures	2007 - 2008 Budget	No. of Rebates or Participants	2007-2008 Goals	Total Annual Savings (Therms)	2007-2008 Goals
Low-Income	$0	$0	$0	$0	$0	$0	**$5,882,354**	195	1,754	65,910	**592,852**
Total Low-Income	**$0**	**$0**	**$0**	**$0**	**$0**	**$0**	**$5,882,354**	**195**	**1,754**	**65,910**	**592,852**

Commercial and Multifamily

PROGRAM/INITIATIVE	Program Planning & Administration Expenditures	Program Marketing Expenditures	Customer Incentives Expenditures	Program Implementation Expenditures	Evaluation & Market Research Expenditures	Total Expenditures	2007 - 2008 Budget *	No. of Rebates or Participants	2007-2008 Goals	Total Annual Savings (Therms) [2]	2007-2008 Goals
Commercial & Industrial											
C&I and Multifamily High Efficiency Heating Rebate	$27,586	$21,763	$0	$48,425	$0	$97,775	$1,141,780	0	400	0	518,000
C&I Building Practices & Demonstrations	$1,214	$935	$0	$2,154	$0	$4,302	$874,432	0	14	0	355,390
Economic Redevelopment	$2,822	$2,288	$0	$4,893	$0	$10,003	$1,620,324	0	22	0	312,114
Multi-Family Energy Efficiency	$0	$0	$0	$0	$0	$0	$3,529,645	0	392	0	794,976
Commercial Energy Efficiency	$207	$159	$0	$367	$0	$734	$2,192,321	0	898	0	837,834
Business Analyzer: Internet Audit	($441)	($122)	$0	$0	$0	($563)	$323,651	11	2,830	N/A	N/A
Total C&I	$31,389	$25,023	$0	$55,839	$0	$112,251	**$9,682,153**	11	4,556	0	2,818,314
PROGRAM TOTALS	**$40,691**	**$38,890**	**$6,299**	**$58,730**	**$0**	**$144,610**	**$19,333,336**	**409**	**17,420**	**68,797**	**4,322,566**

* This view does not include status with On-bill Financing.

KeySpan Energy Delivery
Energy Efficiency Program - Quarter 1
Year to Date March 2008[1]
Long Island

APPENDIX E - Sample Status Report

Residential

PROGRAM/INITIATIVE	Program Planning & Administration Expenditures YTD	Program Marketing Expenditures YTD	Customer Incentives Expenditures YTD	Program Implementation Expenditures YTD	Evaluation & Market Research Expenditures YTD	Total Expenditures YTD	2007 - 2008 Budget YTD	Annual 2007 - 2008 Budget	No. of Rebates or Participants YTD	Participant Goal YTD	Annual Participant 2007-2008 Goals	Total Annual Savings (Therms) YTD	Savings Goal YTD	Annual Savings 2007-2008 Goals
Residential														
ENERGY STAR Homes	$1,679	$1,090	$653	$3,649	$143	$7,214	$71,154	$279,036	-	51	200	-	13,974	54,800
High Efficiency Heating Rebate	$10,991	$28,218	$31,973	$241	$935	$72,358	$359,299	$1,409,016	127	383	1,500	20,955	66,938	262,500
High Efficiency Water Heating Rebate	$4,231	$11,204	$10,500	$1,560	$360	$27,855	$60,660	$237,884	82	102	400	6,314	8,058	31,600
Insulation & Air Sealing	$4,510	$17,985	$6,162	$652	$384	$29,693	$105,422	$413,419	34	77	300	12,512	28,152	110,400
Energy Analysis: Internet Audit Guide	$3,787	$11,429	$0	$9,390	$322	$24,927	$7,669	$30,075	1,121	518	2,030	N/A	N/A	N/A
Residential Technology Demonstration	$1,138	$4,290	$1,805	$160	$97	$7,489	$11,399	$44,701	1	5	20	-	1,785	7,000
Energy Audit/Home Performance	$17,054	$40,060	$8,465	$45,238	$1,450	$112,268	$104,645	$410,374	178	191	750	-	-	0
Energy Star Products[2]	$9,200	$26,697	$21,673	$2,210	$782	$60,562	$46,031	$180,512	512	816	3,200	17,160	61,200	240,000
Total Residential	**$52,590**	**$140,973**	**$81,232**	**$63,100**	**$4,473**	**$342,367**	**$766,279**	**$3,005,017**	**2,055**	**2,142**	**8,400**	**56,941**	**180,107**	**706,300**

PROGRAM/INITIATIVE	Program Planning & Administration Expenditures YTD	Program Marketing Expenditures YTD	Customer Incentives Expenditures YTD	Program Implementation Expenditures YTD	Evaluation & Market Research Expenditures YTD	Total Expenditures YTD	2007 - 2008 Budget YTD	Annual 2007 - 2008 Budget	No. of Rebates or Participants YTD	Participant Goal YTD	Annual Participant 2007-2008 Goals	Total Annual Savings (Therms) YTD	Savings Goal YTD	Annual Savings 2007-2008 Goals
Low-Income	$240,944	$1,671	$763,789	$8,252	$20,492	$1,035,147	$749,985	**$2,941,116**	229	224	878	77,402	75,675	**296,764**
Total Low-Income	**$240,944**	**$1,671**	**$763,789**	**$8,252**	**$20,492**	**$1,035,147**	**$749,985**	**$2,941,116**	**229**	**224**	**878**	**77,402**	**75,675**	**296,764**

Commercial and Multifamily

PROGRAM/INITIATIVE	Program Planning & Administration Expenditures YTD	Program Marketing Expenditures YTD	Customer Incentives Expenditures YTD	Program Implementation Expenditures YTD	Evaluation & Market Research Expenditures YTD	Total Expenditures YTD	2007 - 2008 Budget YTD	Annual 2007 - 2008 Budget	No. of Rebates or Participants YTD	Participant Goal YTD	Annual Participant 2007-2008 Goals	Total Annual Savings (Therms) YTD	Savings Goal YTD	Annual Savings 2007-2008 Goals
Commercial & Industrial														
C&I and Multifamily High Efficiency Heating Rebate	$19,909	$50,624	$2,600	$56,234	$1,693	$131,060	$176,583	$692,481	-	77	300	-	99,068	388,500
C&I Building Practices & Demonstrations	$1,375	$3,928	$0	$3,632	$117	$9,052	$52,051	$204,122	-	2	6	-	38,839	152,310
Economic Redevelopment	$2,901	$7,641	$0	$8,312	$247	$19,101	$125,064	$490,447	-	2	7	-	25,324	99,309
Multi-Family Energy Efficiency	$271	$1,490	$0	$0	$23	$1,785	$289,809	$1,136,504	3	45	175	8,074	90,500	354,900
Commercial Energy Efficiency	$1,945	$5,293	$0	$373	$100	$7,712	$273,609	$1,072,978	12	102	400	55,992	95,166	373,200
Business Analyzer: Internet Audit	$1,954	$5,352	$0	$5,394	$166	$12,866	$31,621	$124,002	-	276	1,084	N/A	0	N/A
Total C&I	**$28,356**	**$74,328**	**$2,600**	**$73,945**	**$2,346**	**$181,575**	**$948,736**	**$3,720,534**	**15**	**503**	**1,972**	**64,066**	**348,896**	**1,368,219**
On-Bill Financing	**$0**					**$0**	**$85,000**	**333,333**	**N/A**	**N/A**	**N/A**	**N/A**	**N/A**	**N/A**
PROGRAM TOTALS	**$321,890**	**$216,972**	**$847,620**	**$145,297**	**$27,310**	**$1,559,089**	**$2,550,000**	**$10,000,000**	**2,299**	**2,869**	**11,250**	**198,409**	**604,677**	**2,371,283**

1 - March YTD includes activity from September 1 through December 31 (Interim Program)

[2]The methodology for capturing participants has changed from per window to per rebate for the windows program within the Energy Star Products program.

KeySpan Energy Delivery
Energy Efficiency Program - Monthly Expenditure Report
Mar-08
Long Island

APPENDIX E - Sample Status Report

Residential

PROGRAM/INITIATIVE	Program Planning & Administration Expenditures	Program Marketing Expenditures	Customer Incentives Expenditures	Program Implementation Expenditures	Evaluation & Market Research Expenditures	Total Expenditures	2007 - 2008 Budget	No. of Rebates or Participants	2007-2008 Goals	Total Annual Savings (Therms)	2007-2008 Goals
Residential											
ENERGY STAR Homes	$560	$1,084	$0	$2,723	$2	$4,370	$279,036	-	200	-	54,800
High Efficiency Heating Rebate	($515)	($1,434)	$0	($2,122)	($2)	($4,073)	$1,409,016	37	1,500	6,105	262,500
High Efficiency Water Heating Rebate	$183	$22	$0	$1,245	$1	$1,451	$237,884	24	400	1,848	31,600
Insulation & Air Sealing	$250	$1,274	$361	$90	$1	$1,977	$413,419	16	300	5,888	110,400
Energy Analysis: Internet Audit Guide	$472	$1,301	$0	$1,956	$2	$3,731	$30,075	183	2,030	N/A	N/A
Residential Technology Demonstration	$182	$1,100	$0	$160	$1	$1,443	$44,701	-	20	-	7,000
Energy Audit/Home Performance	$15	$106	$0	$0	$0	$122	$410,374	33	750	-	0
Energy Star Products	$2,920	$2,837	$15,840	$1,476	$12	$23,084	$180,512	148	3,200	4,732	240,000
Total Residential	**$4,068**	**$6,290**	**$16,201**	**$5,529**	**$16**	**$32,105**	**$3,005,017**	**441**	**8,400**	**18,573**	**706,300**

PROGRAM/INITIATIVE	Program Planning & Administration Expenditures	Program Marketing Expenditures	Customer Incentives Expenditures	Program Implementation Expenditures	Evaluation & Market Research Expenditures	Total Expenditures	2007 - 2008 Budget	No. of Rebates or Participants	2007-2008 Goals	Total Annual Savings (Therms)	2007-2008 Goals
Low-Income	$83,843	$844	$568,745	$0	$339	$653,771	**$2,941,116**	0	878	0	**296,764**
Total Low-Income	**$83,843**	**$844**	**$568,745**	**$0**	**$339**	**$653,771**	**$2,941,116**	**0**	**878**	**0**	**296,764**

Commercial and Multifamily

PROGRAM/INITIATIVE	Program Planning & Administration Expenditures	Program Marketing Expenditures	Customer Incentives Expenditures	Program Implementation Expenditures	Evaluation & Market Research Expenditures	Total Expenditures	2007 - 2008 Budget	No. of Rebates or Participants	2007-2008 Goals	Total Annual Savings (Therms)	2007-2008 Goals
Commercial & Industrial											
C&I and Multifamily High Efficiency Heating Rebate	$619	$793	$2,600	$883	$3	$4,898	$692,481	0	300	0	388,500
C&I Building Practices & Demonstrations	$41	$225	$0	$59	$0	$326	$204,122	0	6	0	152,310
Economic Redevelopment	$66	$323	$0	$135	$0	$525	$490,447	0	7	0	99,309
Multi-Family Energy Efficiency	$46	$321	$0	$0	$0	$368	$1,136,504	3	175	8,074	354,900
Commercial Energy Efficiency	$210	$964	$0	$0	$1	$1,174	$1,072,978	0	400	0	373,200
Business Analyzer: Internet Audit	$46	$321	$0	$0	$0	$368	$124,002	0	1,084	N/A	N/A
Total C&I	**$1,030**	**$2,947**	**$2,600**	**$1,077**	**$4**	**$7,658**	**$3,720,534**	**3**	**1,972**	**8,074**	**1,368,219**
PROGRAM TOTALS	**$88,942**	**$10,081**	**$587,546**	**$6,606**	**$359**	**$693,534**	**$9,666,667**	**444**	**11,250**	**26,647**	**2,371,283**

* This view does not include status with On-bill Financing.

KeySpan Energy Delivery
Energy Efficiency Program - Monthly Expenditure Report
Feb-08
Long Island

APPENDIX E - Sample Status Report

Residential

PROGRAM/INITIATIVE	Program Planning & Administration Expenditures	Program Marketing Expenditures	Customer Incentives Expenditures	Program Implementation Expenditures	Evaluation & Market Research Expenditures	Total Expenditures	2007 - 2008 Budget	No. of Rebates or Participants	2007-2008 Goals	Total Annual Savings (Therms)	2007-2008 Goals
Residential											
ENERGY STAR Homes	$287	$0	$50	$926	$3	$1,266	$279,036	-	200	-	54,800
High Efficiency Heating Rebate	$8,362	$11,452	$22,573	$2,053	$77	$44,518	$1,409,016	33	1,500	5,445	262,500
High Efficiency Water Heating Rebate	$2,538	$3,226	$7,500	$225	$23	$13,512	$237,884	23	400	1,771	31,600
Insulation & Air Sealing	$2,837	$8,395	$4,191	($347)	$26	$15,102	$413,419	7	300	2,576	110,400
Energy Analysis: Internet Audit Guide	$264	$1,138	$0	$0	$2	$1,404	$30,075	154	2,030	N/A	N/A
Residential Technology Demonstration	$240	$220	$815	$0	$2	$1,277	$44,701	-	20	-	7,000
Energy Audit/Home Performance	$16,058	$15,576	$8,465	$45,238	$149	$85,485	$410,374	50	750	-	0
Energy Star Products	$527	$2,275	$0	$0	$5	$2,807	$180,512	108	3,200	4,016	240,000
Total Residential	**$31,113**	**$42,282**	**$43,595**	**$48,094**	**$288**	**$165,372**	**$3,005,017**	**375**	**8,400**	**13,808**	**706,300**

PROGRAM/INITIATIVE	Program Planning & Administration Expenditures	Program Marketing Expenditures	Customer Incentives Expenditures	Program Implementation Expenditures	Evaluation & Market Research Expenditures	Total Expenditures	2007 - 2008 Budget	No. of Rebates or Participants	2007-2008 Goals	Total Annual Savings (Therms)	2007-2008 Goals
Low-Income	$0	$0	$0	$0	$0	$0	**$2,941,116**	0	878	0	**296,764**
Total Low-Income	**$0**	**$0**	**$0**	**$0**	**$0**	**$0**	**$2,941,116**	**0**	**878**	**0**	**296,764**

Commercial and Multifamily

PROGRAM/INITIATIVE	Program Planning & Administration Expenditures	Program Marketing Expenditures	Customer Incentives Expenditures	Program Implementation Expenditures	Evaluation & Market Research Expenditures	Total Expenditures	2007 - 2008 Budget	No. of Rebates or Participants	2007-2008 Goals	Total Annual Savings (Therms)	2007-2008 Goals
Commercial & Industrial											
C&I and Multifamily High Efficiency Heating Rebate	$3,292	$4,129	$0	$10,075	$30	$17,527	$692,481	0	300	0	388,500
C&I Building Practices & Demonstrations	$370	$893	$0	$705	$3	$1,972	$204,122	0	6	0	152,310
Economic Redevelopment	$638	$1,139	$0	$1,613	$6	$3,396	$490,447	0	7	0	99,309
Multi-Family Energy Efficiency	$163	$703	$0	$0	$2	$867	$1,136,504	0	175	0	354,900
Commercial Energy Efficiency	$1,411	$2,301	$0	$0	$6	$3,719	$1,072,978	0	400	0	373,200
Business Analyzer: Internet Audit	$905	$1,384	$0	$2,521	$8	$4,819	$124,002	0	1,084	N/A	N/A
Total C&I	**$6,780**	**$10,550**	**$0**	**$14,915**	**$56**	**$32,301**	**$3,720,534**	**0**	**1,972**	**0**	**1,368,219**
PROGRAM TOTALS	**$37,893**	**$52,832**	**$43,595**	**$63,009**	**$344**	**$197,673**	**$9,666,667**	**375**	**11,250**	**13,808**	**2,371,283**

* This view does not include status with On-bill Financing.

KeySpan Energy Delivery
Energy Efficiency Program - Monthly Expenditure Report
Jan-08
Long Island

APPENDIX E - Sample Status Report

Residential

PROGRAM/INITIATIVE	Program Planning & Administration Expenditures	Program Marketing Expenditures	Customer Incentives Expenditures	Program Implementation Expenditures	Evaluation & Market Research Expenditures	Total Expenditures	2007 - 2008 Budget	No. of Rebates or Participants	2007-2008 Goals	Total Annual Savings (Therms)	2007-2008 Goals
Residential											
ENERGY STAR Homes	$185	$0	$603	$0	$0	$788	$279,036	-	200	-	54,800
High Efficiency Heating Rebate	$2,040	$811	$5,900	$149	$0	$8,899	$1,409,016	36	1,500	5,940	262,500
High Efficiency Water Heating Rebate	$201	($1,177)	$1,800	$54	$0	$879	$237,884	25	400	1,925	31,600
Insulation & Air Sealing	$718	$191	$1,610	$616	$0	$3,135	$413,419	8	300	2,944	110,400
Energy Analysis: Internet Audit Guide	$185	$622	$0	$0	$0	$807	$30,075	148	2,030	N/A	N/A
Residential Technology Demonstration	$185	$622	$0	$0	$0	$807	$44,701	-	20	-	7,000
Energy Audit/Home Performance	$1	$4	$0	$0	$0	$5	$410,374	31	750	-	0
Energy Star Products	$1,258	$1,443	$2,450	$339	$0	$5,490	$180,512	107	3,200	3,450	240,000
Total Residential	**$4,773**	**$2,515**	**$12,363**	**$1,157**	**$0**	**$20,808**	**$3,005,017**	**355**	**8,400**	**14,259**	**706,300**

PROGRAM/INITIATIVE	Program Planning & Administration Expenditures	Program Marketing Expenditures	Customer Incentives Expenditures	Program Implementation Expenditures	Evaluation & Market Research Expenditures	Total Expenditures	2007 - 2008 Budget	No. of Rebates or Participants	2007-2008 Goals	Total Annual Savings (Therms)	2007-2008 Goals
Low-Income	$0	$0	$0	$0	$0	$0	**$2,941,116**	229	878	77,402	**296,764**
Total Low-Income	**$0**	**$0**	**$0**	**$0**	**$0**	**$0**	**$2,941,116**	**229**	**878**	**77,402**	**296,764**

Commercial and Multifamily

PROGRAM/INITIATIVE	Program Planning & Administration Expenditures	Program Marketing Expenditures	Customer Incentives Expenditures	Program Implementation Expenditures	Evaluation & Market Research Expenditures	Total Expenditures	2007 - 2008 Budget	No. of Rebates or Participants	2007-2008 Goals	Total Annual Savings (Therms)	2007-2008 Goals
Commercial & Industrial											
C&I and Multifamily High Efficiency Heating Rebate	$14,045	$1,960	$0	$45,277	$0	$61,282	$692,481	0	300	0	388,500
C&I Building Practices & Demonstrations	$879	$90	$0	$2,868	$0	$3,837	$204,122	0	6	0	152,310
Economic Redevelopment	$2,048	$325	$0	$6,564	$0	$8,937	$490,447	0	7	0	99,309
Multi-Family Energy Efficiency	$0	$0	$0	$0	$0	$0	$1,136,504	0	175	0	354,900
Commercial Energy Efficiency	$115	$12	$0	$373	$0	$500	$1,072,978	0	400	0	373,200
Business Analyzer: Internet Audit	$0	$0	$0	$0	$0	$0	$124,002	0	1,084	N/A	N/A
Total C&I	**$17,087**	**$2,386**	**$0**	**$55,082**	**$0**	**$74,556**	**$3,720,534**	**0**	**1,972**	**0**	**1,368,219**
PROGRAM TOTALS	**$21,861**	**$4,901**	**$12,363**	**$56,239**	**$0**	**$95,364**	**$9,666,667**	**584**	**11,250**	**91,661**	**$2,371,283**

* This view does not include status with On-bill Financing.