

New York State Energy Research and Development Authority

New York's System Benefits Charge Programs Evaluation And Status Report

Quarterly Report to the Public Service Commission
Quarter Ending June 30, 2011

Final Report
August 2011

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Table of Contents

1 INTRODUCTION	1-1
1.1 Introduction	1-1
1.2 Organization of the Report	1-4
2 PORTFOLIO-LEVEL REPORTING	2-1
2.1 System Benefits Charge Budget and Spending Status	2-3
2.2 Portfolio-Level Findings	2-8
2.3 Workforce Development	2-15
3 COMMERCIAL/INDUSTRIAL PROGRAMS	3-1
3.1 Commercial/Industrial (C/I) Evaluation Activities	3-1
3.2 Summary of Commercial/Industrial Program Budget and Spending Status	3-1
3.3 Summary of Commercial/Industrial Evaluation Results	3-4
3.4 Existing Facilities Program	3-10
3.5 New York Energy Smart SM Business Partners	3-11
3.6 New York Energy Smart SM Loan Fund and Financing Program	3-12
3.7 Energy Smart Focus Program.....	3-13
3.8 New Construction Program	3-17
3.9 FlexTech Technical Assistance Program	3-19
3.10 Industrial and Process Efficiency	3-24
3.11 FlexTech Benchmarking Pilot.....	3-24
3.12 Agriculture Energy Efficiency Program.....	3-25
4 RESIDENTIAL AND LOW-INCOME PROGRAMS	4-1
4.1 Residential and Low-Income Evaluation Activities	4-1
4.2 Summary of Residential Program Budget and Spending Status	4-1
4.3 Residential and Low-Income Evaluation Findings	4-4
4.4 Home Performance Program	4-18
4.5 Multifamily Performance Program.....	4-21
4.6 Market and Community Support Program	4-22
4.7 CFL Expansion Program	4-28
4.8 Communities and Education Program.....	4-29
4.9 EmPower New York SM	4-30
4.10 Buying Strategies and Energy Awareness Program	4-32
5 RESEARCH AND DEVELOPMENT PROGRAMS	5-1
5.1 Overview of the Research and Development Programs	5-1
5.2 R&D Program Evaluation Activities	5-2
5.3 Summary of R&D Program Budget and Spending Status.....	5-2
5.4 Program Results Summary	5-4
5.5 Public Benefit Power Transmission and Distribution Research.....	5-16
5.6 Clean Energy Infrastructure	5-18
5.7 Power Systems	5-19
5.8 DG-CHP Demonstration	5-21
5.9 Demand Response and Innovative Rate Research (DR and IRR)	5-22
5.10 Electric Transportation	5-24

5.11 Environmental Monitoring, Evaluation, and Protection (EMEP) Program..... 5-25
 5.12 Industrial Process & Product Innovation Program..... 5-29
 5.13 Municipal Water and Wastewater Efficiency..... 5-32
 5.14 Next Generation and Emerging Technologies 5-33

APPENDIX A: EVALUATION ADJUSTMENT FACTORS..... A-1

APPENDIX B: LOGIC MODELB-1

Tables

Table 2-1. Summary of SBC Program Spending and Progress by Funding Source for Current Funding Periods through June 30, 2011 2-2
 Table 2-2. Summary of SBC Program Budget and Spending Status through June 30, 2011 (\$ million)..... 2-3
 Table 2-3. New York Energy \$martSM Program Budget as of June 30, 2011 (\$ million) 2-4
 Table 2-4. Financial Status of New York Energy \$martSM Program through June 30, 2011 (\$ million)..... 2-5
 Table 2-5. Financial Status of the EEPS Programs through June 30, 2011 (\$ million) 2-7
 Table 2-6. Cumulative SBC Benefits from Installed Measures through June 30, 2011 (New York Energy \$martSM and EEPS) 2-9
 Table 2-7. Adjusted Cumulative SBC Annual Savings by Program through June 30, 2011 2-13
 Table 2-8. Workforce Development Program - Goals and Achievements 2-16
 Table 2-9. Key Program outputs from Program inception to June 30, 2011 2-17
 Table 3-1. Commercial/Industrial Programs – New York Energy \$martSM Financial Status through June 30, 2011 (\$ million) 3-2
 Table 3-2. Financial Status of the EEPS Commercial/Industrial Programs through June 30, 2011 (\$ million)..... 3-3
 Table 3-3. New York Energy \$martSM C/I Program Cumulative Annual Electricity Savings through June 30, 2011 and Progress toward Goals 3-5
 Table 3-4. EEPS C/I Program Cumulative Annual Electricity Savings through June 30, 2011 and Progress toward Goals 3-6
 Table 3-5. New York Energy \$martSM C/I Program Cumulative Peak Demand Savings through June 30, 2011 and Progress toward Goals..... 3-7
 Table 3-6. EEPS C/I Program Cumulative Peak Demand Savings through June 30, 2011 3-8
 Table 3-7. New York Energy \$martSM C/I Program Cumulative Annual Fuel Savings through June 30, 2011 3-8
 Table 3-8. EEPS C/I Program Cumulative Annual Natural Gas Savings June 30, 2011 and Progress toward Goals 3-9
 Table 3-9. Existing Facilities Program – Program Outputs..... 3-10
 Table 3-10. New York Energy \$martSM Business Partners Program – Goals and Achievements 3-11
 Table 3-11. New York Energy \$martSM Loan Fund and Financing Program – Goals and Achievements 3-12
 Table 3-12. New York Energy \$martSM Focus Program – Goals and Achievements 3-13
 Table 3-13. Projects Brought into Other NYSERDA Programs by Focus..... 3-14
 Table 3-14. New Construction Program – Key Activities..... 3-18
 Table 3-15: New Construction Program Evaluation Recommendations and Status 3-18
 Table 3-16. FlexTech TA Program – Customers Receiving Assistance 3-20

Table 4-1. Residential & Low-Income Programs - New York Energy \$mart SM Financial Status through June 30, 2011 (\$ million)	4-2
Table 4-2. Financial Status of the EEPS Residential and Low-Income Programs through June 30, 2011 (\$ million).....	4-3
Table 4-3. New York Energy \$mart SM Residential and Low-Income Program Cumulative Annual Electricity Savings through June 30, 2011 and Progress toward Goals	4-5
Table 4-4. EEPS Residential and Low-Income Program Cumulative Annual Electricity Savings through June 30, 2011 and Progress toward Goals	4-6
Table 4-5. New York Energy \$mart SM Residential and Low-Income Program Cumulative Peak Demand Reductions through June 30, 2011	4-7
Table 4-6. EEPS Residential and Low-Income Program Cumulative Peak Demand Reductions through June 30, 2011	4-8
Table 4-7. New York Energy \$mart SM Residential and Low-Income Program Cumulative Annual Fuel Savings through June 30, 2011 and Progress toward Goals.....	4-9
Table 4-8. EEPS Residential and Low-Income Program Cumulative Annual Fuel Savings through June 30, 2011 and Progress toward Goals	4-10
Table 4-9. ENERGY STAR Label Recognition (Prior to the survey, have you ever heard of or seen the ENERGY STAR Label?)	4-12
Table 4-10. New York Energy \$mart SM Home Performance Program – Goals and Achievements.....	4-19
Table 4-11. Home Performance with ENERGY STAR Evaluation Recommendations and Status.....	4-20
Table 4-12. New York ENERGY STAR Homes Evaluation Recommendations and Status.....	4-21
Table 4-13. New York Energy \$mart SM Multifamily Performance Program – Goals and Achievements	4-22
Table 4-14. New York Energy \$mart SM Market and Community Support Program – Goals and Achievements	4-23
Table 4-15. New York Energy \$mart SM Communities and Education Program – Goals and Achievements	4-30
Table 4-16. EmPower New York SM Program – Goals and Achievements	4-31
Table 4-17. EmPower Evaluation Recommendations and Status	4-31
Table 4-18. New York Energy \$mart SM Buying Strategies and Energy Awareness Program – Goals and Achievements	4-33
Table 5-1. Research & Development Programs – New York Energy \$mart SM Financial Status through June 30, 2011 (\$ million)	5-3
Table 5-2. New York Energy \$mart SM R&D Program Electricity Savings and Clean Generation through June 30, 2011	5-5
Table 5-3. New York Energy \$mart SM R&D Program Cumulative Peak Demand Savings through June 30, 2011	5-5
Table 5-4. New York Energy \$mart SM R&D Program Natural Gas Impacts through June 30, 2011.....	5-6
Table 5-5. R&D Program Portfolio Level Evaluation Recommendations and Status	5-7
Table 5-6. Change in Employment and GSP as a result of NYSERDA Product Development Funding Activities	5-10
Table 5-7. Public Benefit Power Transmission and Distribution Research Program – Goals and Achievements	5-17
Table 5-8. Status of Public Benefit Power T&D Research Program Projects.....	5-17
Table 5-9. Clean Energy Infrastructure Program Goals achieved from July 1, 2006 through June 30, 2011	5-19
Table 5-10. Power Systems Product Development Program Goals achieved from July 1, 2006 through June 30, 2011	5-20
Table 5-11. DG-CHP Demonstration Program Near-Term Goals	5-22

Table 5-12. Demand Response and Innovative Rate Research Program – Goals and Achievements	5-23
Table 5-13. Demand Response and Innovative Rate Research Program Project Status	5-23
Table 5-14. Electric Transportation Program Goals achieved from July 1, 2006 through June 30, 2011	5-24
Table 5-15. Environmental Monitoring, Evaluation, and Protection Program Goals achieved from July 1, 2006 through June 30, 2011	5-26
Table 5-16. EMEP Evaluation Recommendations and Status	5-28
Table 5-17. Industrial Process & Product Innovation Program – SBC III Goals and Achievements	5-30
Table 5-18. Status of IPPI Projects by Solicitation through June 30, 2011	5-31
Table 5-19. Active IPPI projects by Project Type (July 1, 2006 to June 30, 2011)	5-31
Table 5-20. Municipal Water and Wastewater Efficiency Program SBC III Goals and Achievements	5-33
Table 5-21. Next Generation and Emerging Technologies Program – Goals and Achievements.....	5-34
Table 5-22. Status of Next Gen Projects by Solicitation	5-35

Figures

Figure 2-1. New York Energy \$mart SM Electricity Savings by Utility through June 30, 2011	2-11
Figure 2-2. New York Energy \$mart SM Demand Savings by Utility (includes callable MW) through June 30, 2011	2-11
Figure 2-3. EEPS Electricity Savings by Utility through June 30, 2011	2-12
Figure 2-4. EEPS Demand Savings by Utility (includes callable MW) through June 30, 2011	2-12
Figure 4-1. Percent of Respondents Who Agree with ENERGY STAR Issues	4-14
Figure 4-2. Market Penetration of ENERGY STAR Refrigerators by Year and Partnership	4-25
Figure 4-3. Market Penetration of ENERGY STAR Clothes Washers by Year and Partnership	4-25
Figure 4-4. Market Penetration of ENERGY STAR Dishwashers by Year and Partnership	4-26
Figure 4-5. Market Penetration of ENERGY STAR Room ACs by Year and Partnership	4-26
Figure 4-6. Market Penetration of ENERGY STAR Light Fixtures by Year	4-27
Figure 5-1. Sales from New Products.....	5-9
Figure 5-2. Impacts of Various Input Variables on GSP.....	5-12
Figure 5-3. Impacts of Various Input Variables on Net Jobs	5-13

1 Introduction

1.1 Introduction

This report provides an update on the progress of the New York State Energy Research and Development Authority's (NYSERDA) System Benefits Charge (SBC) funded programs toward meeting their stated goals. It contains evaluation results on activities completed through the quarter ending June 30, 2011. The last full annual report on progress (through December 31, 2010) was issued in March 2011.¹

The 13-year **New York Energy \$mart**SM Program, administered by NYSERDA, was initiated in 1998 by order of the New York State Public Service Commission² (Commission) and embodies three funding cycles.³ The Program portfolio consists of numerous initiatives promoting energy efficiency and demand management, facilitating renewable energy development, providing energy services to low-income New Yorkers, and conducting research and development. The activities pursued by the Program include disseminating information to increase consumer energy awareness, marketing, providing financial incentives, developing and testing new products, commercializing new technologies, and gathering data and information.

In its June 23, 2008 Order⁴, the Commission established the State's Energy Efficiency Portfolio Standard (EEPS) and approved a subset of "Fast Track" programs to commence immediately. The Order also directed NYSERDA to submit a supplemental revision to its SBC Operating Plan

¹New York State Energy Research and Development Authority, *New York's System Benefits Charge Program Evaluation and Status Report, Final Report*, March 2011.

²Case 94-E-1052, *et al.*, In the Matter of Competitive Opportunities Regarding Electric Service, Opinion 98-3, issued January 30, 1998.

³The most recent cycle was initiated with the New York State Public Service Commission order in Case 05-M-0900, In the Matter of the System Benefits Charge III, *Order Continuing the System Benefits Charge (SBC) and the SBC-funded Public Benefit Programs*, issued and effective December 21, 2005.

⁴Case 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.

incorporating the Fast Track programs, including enhancements to the SBC Fast Track programs. The supplemental revision, approved by the Department of Public Service (DPS) on March 12, 2009, served as the vehicle to incorporate the Fast Track programs into NYSERDA's existing SBC Program portfolio.⁵

A series of other Commission Orders issued during the latter half of 2009 and early 2010 authorized NYSERDA to further expand and add to its programs. In addition to the electric SBC, the Commission commenced collection of a natural gas SBC in order to allow NYSERDA and other program administrators to broaden or begin offering services for gas efficiency measures. In total, the additional NYSERDA program approvals constitute \$447 million in funding through 2011 to support electric and natural gas programs. By the end of 2011, the SBC funds and interest earnings from the three **New York Energy \$mart**SM Program rounds and the approved NYSERDA-administered EEPS programs will have provided more than \$2.3 billion to support a full range of programs to help the State meet its energy challenges.⁶

In September 2010, NYSERDA submitted a proposal to the Commission requesting approval for a continuation, with modifications, of the current **New York Energy \$mart**SM Program and approval of a new program portfolio. In this proposal, NYSERDA requested a six-month extension of the **New York Energy \$mart**SM Program to December 31, 2011 to coincide with the conclusion of the current EEPS Program. In addition, the proposal requested Commission approval to transfer eight **New York Energy \$mart**SM resource acquisition programs into the EEPS portfolio at current funding levels given their similarity in implementation to existing EEPS programs.⁷ Lastly, the proposal introduced a new Technology and Market Development (T&MD) program portfolio that would include programs designed to support innovative technologies and services, such as clean energy technologies and services as well as codes and

⁵New York State Energy Research and Development Authority, *System Benefits Charge Supplemental Revision for New York Energy \$mart*SM *Programs (2008-2011) As Amended August 22, 2008 and revised March 12, 2009.*

⁶In addition to NYSERDA's **New York Energy \$mart**SM and EEPS programs, funded through the SBC, the Public Service Commission also provided funding for New York utilities to administer EEPS programs. Furthermore, the New York Power Authority (NYPA) and Long Island Power Authority (LIPA) each offer complementary public benefits programs of their own. The three authorities coordinate program design and delivery wherever practicable to maximize the use of public funds and to ensure a coordinated statewide effort to meet public policy goals. The results of the utility, NYPA, and LIPA programs are not included in this report.

⁷These programs included Residential Multifamily Building Performance, Low-Income Multifamily Building Performance, EmPower NY, Existing Facilities, New Construction; FlexTech; Single Family Home Performance, and Low-Income Single Family Home Performance.

standards. The proposed funding level for the T&MD portfolio was \$82 million per year through December 31, 2016.

In its December 30, 2010 Order in response to this proposal, the Commission approved the six-month extension of the **New York Energy \$martSM** Program through December 31, 2011 and authorized the transfer of eight **New York Energy \$martSM** programs into the EEPS program portfolio pending approval of a revised SBC (**New York Energy \$martSM**) Operating Plan due in the first quarter of 2011. The revised Operating Plan submitted by NYSERDA included updates to program goals to reflect the six-month extension and presented a revised budget adding \$40.9 million to the **New York Energy \$martSM** Program. NYSERDA also revised and resubmitted its EEPS Operating Plans to reflect the additional six months of funding for those programs totaling \$49.2 million. The revised SBC/**New York Energy \$martSM** and most of the revised EEPS operating plans were approved by DPS in April 2011, and the additional six-month funding and goals will be reflected in next quarter's evaluation and status report.

The Commission deferred its decision on the T&MD portfolio and ordered NYSERDA to submit a T&MD Operating Plan that would incorporate input from interested stakeholders through an intensive outreach process led by NYSERDA. NYSERDA submitted the T&MD Operating Plan on May 16, 2011, and on June 8, 2011 the Commission issued a Notice of Proposed Rulemaking requesting public comment on the Operating Plan by July 25, 2011. Comments received on the Operating Plan during this public comment period will assist Commission in making a decision regarding the Plan.

This document combines reporting requirements of the original **New York Energy \$martSM** programs with the additional reporting requirements for the approved EEPS programs. For purposes of this report, the "**New York Energy \$martSM** Program" refers to the original 13-year program, and the "EEPS Program" refers to the recently approved EEPS Programs. The "SBC Program" refers to the portfolio of programs and includes both **New York Energy \$martSM** and EEPS funding sources. Thus, this evaluation report provides an update for the **New York Energy \$martSM** Program as well as the approved EEPS Programs.

Given the six-month extension of the current **New York Energy \$martSM** Program funding period and the largely retrospective nature of impact evaluation activities, future evaluation and status reports will more fully define the ultimate achievements and effectiveness of this round of program activity. The future reporting will incorporate results of several current impact

evaluation studies and will provide an up-to-date assessment of progress against stated goals, cost effectiveness and economic impacts of the programs.

1.2 Organization of the Report

This report was prepared by NYSERDA staff with contributions from a team of independent third-party evaluation contractors. The evaluation contractors work closely with NYSERDA's program implementation staff and contractors, customers, and market and trade allies to develop an understanding of the Program offerings and to conduct independent assessments of the Program's impacts and progress toward the established public policy goals. The evaluation functions covered by the specialty contractor teams are: impact evaluation; market characterization and assessment; and process assessment and evaluation management. This report is divided into the following sections:

Section 1 – Introduction

Section 2 – Portfolio-Level Reporting

Section 3 – Commercial and Industrial Programs

Section 4 – Residential and Low-Income Programs

Section 5 – Research and Development Programs

Appendix A – Evaluation Adjustment Factors

Appendix B – Program Logic Models

The more detailed quarterly narrative and numeric (*i.e.*, Scorecard) progress updates required by DPS in its June 29, 2009 *Energy Efficiency Program Information Reporting Manual* for the EEPS Programs have been filed with the Commission for Quarter 2 2011 under separate cover.

2 Portfolio-Level Reporting

The System Benefits Charge (SBC) portfolio includes numerous program initiatives that individually and collectively help the State progress toward achieving its energy policy goals. This section presents findings and results for the portfolio of System Benefits Charge programs. More specific findings and results from evaluations of individual programs are presented separately in Sections 3, 4 and 5.

Table 2-1 aligns current spending with energy savings to show progress toward goals at the portfolio level for the current program funding cycles. Overall, at the portfolio level, the programs are tracking well as percent of funds spent relates to percent of goals achieved through June 30, 2011. The remainder of Section 2 highlights budget and spending status and program achievements in more detail for both the **New York Energy \$martSM** and Energy Efficiency Portfolio Standard (EEPS) portions of NYSERDA's SBC portfolio.

Table 2-1. Summary of SBC Program Spending and Progress by Funding Source for Current Funding Periods through June 30, 2011

	Total Budget (\$ million) ¹	Total Funds Spent (\$ million) ¹	% of Budget Spent	Energy Savings Goal	Energy Savings Achieved	% of Goal Achieved
New York Energy \$martSM Program (July 1, 2006 – December 31, 2011)	\$1,184.7	\$809.2	68%	2,198.9 GWh ^{2,3}	1,978.0 GWh	90%
EEPS Electric Programs ⁴	\$309.5	\$88.4	29%	2,762.4 GWh ⁵	956.9 GWh	35%
EEPS Gas Programs ⁶	\$118.1	\$25.7	22%	4,015,132 MMBtu ⁷	1,268,383 MMBtu	32%

¹Inclusive of Administration, Evaluation and other portfolio level costs. Enhanced SBC evaluation and DPS evaluation consultant funding, as provided for in EEPS orders issued June 23, 2008 and June 24, 2009 (Case 07-M-0548 and Case 05-M-0090), are included in the NYE\$ row budget.

²Certain **New York Energy \$martSM** programs also have demand reduction and fuel savings goals. Only the electric goals are shown in this table due to the broad contribution of programs toward those achievements. Individual program goals and progress for demand reduction and fuel savings are shown in Sections 3 and 4 of this report.

³This overall goal for the **New York Energy \$martSM** Program is based on the sum of individual program goals specified in NYSERDA's March 2008 and, where applicable, March 2009 operating plans. For some programs, the latest published goal values do not fully reflect adjustments that are necessary to align goals with cross-program funding reallocations approved by DPS since the operating plans were completed. These funding reallocation adjustments, and any other necessary updates or corrections to the **New York Energy \$martSM** Program goals, were reflected in NYSERDA's February 28, 2011 revised operating plan (resubmitted with revisions April 6, 2011) and will be used in future evaluation reports starting in Q3 2011 as the benchmark for program performance.

⁴Budget and spending in this row do not include General Awareness. Energy savings achieved include some ancillary electric benefits from natural gas funding. Ancillary savings amounts per program are shown in Sections 3 and 4 of this report, and in NYSERDA's scorecard filing.

⁵The EEPS Electric Programs goal includes goals for the following programs not yet reporting savings: Master Metered Multifamily, Geothermal, Benchmarking Pilot, and Agriculture Electric. NYSERDA filed several revised EEPS operating plans with the Commission on March 30, 2011 to incorporate an additional six months of funding approved by the Commission's December 30, 2010 Order. Electricity savings goals increased with the additional funds. These new goal values will be reflected in next quarter's report.

⁶Budget and spending in this row do not include General Awareness. Energy savings achieved include some ancillary natural gas benefits from electric funding. Ancillary savings amounts per program are shown in Sections 3 and 4 of this report, and in NYSERDA's scorecard filing.

⁷The EEPS Gas Programs goal includes the MMBtu goal for the Agriculture Gas program, which is not yet reporting energy savings.

2.1 System Benefits Charge Budget and Spending Status

This section presents financial data for the SBC-funded Program. Table 2-2 provides summary level budget and spending data for both the **New York Energy \$martSM** and EEPS Programs. Sections 2.1.1 and 2.1.2 provide further breakout of budget and spending for each individual **New York Energy \$martSM** and EEPS-funded program, respectively.

Table 2-2. Summary of SBC Program Budget and Spending Status through June 30, 2011 (\$ million)

	Total Budget	Total Funds Spent	% of Budget Spent
New York Energy \$martSM Program (13-Year Budget)	\$1,889.9	\$1,514.4	80.1%
EEPS Programs (electric and natural gas)	\$447.1	\$120.4	26.9%
Total SBC Programs	\$2,337.0	\$1,634.8	70.0%

Totals may not sum exactly due to rounding.

Source: NYSERDA

2.1.1 New York Energy \$martSM Program Budget Spending Status

This financial overview of the **New York Energy \$martSM** Program presents budget and funding status from 1998 through June 30, 2011. The 13-year budget is approximately \$1.89 billion, of which \$1.68 billion is allocated to four major program areas – Commercial/Industrial (C/I), Residential, Low-Income, and Research and Development (R&D) – and a general awareness campaign. The budgets for these program areas are presented in Table 2-3 along with the costs for program administration, program evaluation, the Environment Disclosure Program¹, and the New York State Cost Recovery Fee².

Table 2-4 shows the financial status of **New York Energy \$martSM** through June 30, 2011. Spending relative to the 13-year budget is: C/I 75.9%; Residential 95.1%; Low-Income 86.7%; and R&D 65.2%.

¹This program provides electricity commodity suppliers with data for informing customers about the fuel mix and associated environmental impacts of their electricity sources.

²The New York State Cost Recovery Fee is assessed for services to public authorities. The fee is determined by the New York State Division of Budget and imposed and collected by the Department of Taxation and Finance.

Financial status of individual programs within C/I, Residential, Low-Income and R&D is shown in Sections 3, 4, and 5, respectively.

**Table 2-3. New York Energy \$martSM Program Budget as of June 30, 2011
(\$ million)**

	Budget ¹			% of Program Area Budget	% of Total Budget
	SBC I & SBC II ²	SBC III ³	Total Budget		
Program Areas					
Commercial/Industrial	247.1	385.8	632.9	37.7%	33.5%
Residential	165.4	147.3	312.8	18.6%	16.6%
Low-Income	86.6	232.0	318.6	19.0%	16.9%
Research and Development	105.9	278.4	384.3	22.9%	20.3%
General Awareness ⁴ (Marketing)	15.9	15.2	31.0	1.8%	1.6%
Program Areas Total	\$620.9	\$1,058.7	\$1,679.6	100.0%	88.9%
Other Costs					
Program Administration	59.8	68.4	128.3	-	6.8%
Metrics and Evaluation	14.5	37.0	51.5	-	2.7%
Environmental Disclosure	0.8	1.1	1.9	-	0.1%
NYS Cost Recovery Fee ⁵	9.2	16.2	25.4	-	1.3%
DPS Evaluation Consultant	-	1.1	1.1	-	0.1%
Statewide Evaluation Protocol Development	-	2.1	2.1	-	0.1%
Other Costs Total	\$ 84.3	\$126.0	\$210.3	-	11.1%
Total New York Energy \$martSM	\$705.2	\$1,184.7	\$1,889.9	-	100.0%

¹Reflects carryover in funds and reallocation as approved by the Public Service Commission in 2007.

²SBC I: July 1, 1998 through June 30, 2001; SBC II: July 1, 2001 through June 30, 2006.

³SBC III: July 1, 2006 through December 31, 2011.

⁴General Awareness previously included in Residential Program Area.

⁵The New York State Cost Recovery Fee is assessed for services to public authorities. The fee is determined by the New York State Division of Budget and imposed and collected by the Department of Taxation and Finance.

Totals may not sum due to rounding.

Source: NYSERDA

Table 2-4. Financial Status of New York Energy SmartSM Program through June 30, 2011 (\$ million)

	Total 13-Year Budget ¹	Funds Spent			Encumbered Funds ⁴ % of Budget Encumbered	Committed Funds ⁵ % of Budget Committed
		SBC I & SBC II ^{1,2}	SBC III ³	Total Spent & % of Budget		
Program Areas						
Commercial/Industrial	632.9	247.1	233.3	480.5 75.9%	579.8 91.6%	618.1 97.7%
Residential ⁵	312.8	165.4	132.0	297.4 95.1%	304.5 97.3%	306.8 98.1%
Low-Income	318.6	86.6	189.7	276.3 86.7%	301.6 94.7%	309.1 97.0%
Research and Development	384.3	105.9	144.9	250.8 65.2%	329.9 85.8%	382.0 99.4%
General Awareness ⁶ (Marketing)	31.0	15.9	9.4	25.3 81.5%	31.0 100.0%	31.0 100.0%
Program Areas Total	\$1,679.6	\$620.9	\$709.4	1,330.3 79.2%	1,546.7 92.1%	1,647.1 98.1%
Other Costs						
Program Administration	128.3	59.8	68.3	128.1 99.9%	128.3 100.0%	128.3 100.0%
Metrics and Evaluation	51.5	14.5	14.3	28.8 55.9%	33.4 64.9%	34.7 67.5%
Environmental Disclosure	1.9	0.8	-0.8	<0.1 2.5%	<0.1 2.5%	<0.1 2.5%
NYS Cost Recovery Fee	25.4	9.2	16.9	26.0 102.4%	26.0 102.4%	26.0 102.4%
DPS Evaluation Consultant	1.1	-	0.8	0.8 69.3%	1.1 100.0%	1.1 100.0%
Statewide Evaluation Protocol Development	2.1	-	0.4	0.4 19.3%	0.9 44.2%	0.9 44.2%
Other Costs Total	\$210.3	\$84.3	\$99.8	\$184.2 87.6%	\$189.8 90.3%	\$191.1 90.9%
Total New York Energy SmartSM	\$1,889.9	\$705.2	\$809.2	\$1,514.4 80.1%	\$1,736.5 91.9%	\$1,838.2 97.3%

¹ Reflects carryover in funds and reallocation as approved by the PSC in 2007.

² SBC I: July 1, 1998 through June 30, 2001; SBC II: July 1, 2001 through June 30, 2006.

³ SBC III: July 1, 2006 through December 31, 2011.

⁴ Encumbered funds associated with signed contracts and purchase orders.

⁵ Committed funds associated with encumbered funds and pending contracts.

⁶ General Awareness previously included in Residential Program Area.

Totals may not sum exactly due to rounding.

Source: NYSERDA

2.1.2 EEPS Program Budget Spending and Status

This section presents financial data for the EEPS Programs from their initiation through June 30, 2011. Budgets and spending for EEPS electric and natural gas programs are presented in aggregate in Table 2-5 by major program area, including C/I, Residential and Low-Income, Workforce Development, and General Awareness.

Financial status of individual EEPS programs within the C/I, Residential and Low-Income areas is presented in Sections 3 and 4, respectively. Spending for the current quarter is further disaggregated per the DPS EEPS reporting guidelines within NYSERDA's scorecard report, which is filed under separate cover for the second quarter of 2011.

Table 2-5. Financial Status of the EEPS Programs through June 30, 2011
(\$ million)

		Total Budget	Total Funds Spent	% of Budget Spent	Encumbered Funds % of Budget Encumbered	Committed Funds % of Budget Committed
Program¹						
Commercial/Industrial	Electric	207.4	41.7	20.1%	118.1 57.0%	143.5 69.2%
	Gas	24.2	2.7	11.0%	17.3 71.6%	19.0 78.6%
Residential	Electric	32.0	12.9	40.3%	15.2 47.5%	15.8 49.3%
	Gas	53.8	11.8	21.9%	16.0 29.8%	19.4 36.1%
Low-Income	Electric	27.2	15.1	55.5%	15.7 57.8%	16.1 59.3%
	Gas	26.0	6.8	26.2%	8.6 33.2%	13.8 53.2%
Workforce Development		5.8	0.6	11.1%	2.8 48.8%	3.7 62.9%
Subtotal		\$376.2	\$91.5	24.3%	\$193.8 51.5%	\$231.3 61.5%
General Awareness		18.1	6.3	34.8%	18.1 100.0%	18.1 100.0%
Program Total		\$394.4	\$97.8	24.8%	\$211.9 53.7%	\$249.4 63.2%
Other Costs						
Program Administration		31.3	18.7	59.9%	18.8 60.0%	18.8 60.0%
Metrics and Evaluation		21.4	3.9	18.1%	6.7 31.1%	6.7 31.1%
Other Costs Total		\$52.7	22.6	43.0%	25.4 48.2%	25.4 48.2%
Total EEPS Program		\$447.1	\$120.4	26.9%	\$237.3 53.1%	\$274.8 61.5%

¹Program budgets exclude administration and evaluation dollars. Administration and evaluation dollars are summed across programs and included in the Other Costs section of the table. Administration funds spent includes the EEPS allocable share of NYS Cost Recovery Fee.

Totals may not sum exactly due to rounding.

Source: NYSERDA

2.2 Portfolio-Level Findings

This section discusses portfolio-level findings related to progress toward overarching public policy goals, energy savings achievements, and economic analyses. These findings were compiled based on the cumulative work of NYSERDA and its evaluation contractor teams over the past several years.

2.2.1 Energy, Demand and Fuel Savings Achieved

The energy, peak demand, and fuel savings from the SBC Program portfolio (including both the **New York Energy \$martSM** and the EEPS programs) from 1998 through June 30, 2011 are presented in Table 2-6. The portfolio has achieved 5,263 GWh of cumulative annual electricity savings, and 6.5 million MMBtu of natural gas, fuel oil and other fuel savings. In addition, there are 108 GWh of electricity being generated through renewables. The SBC portfolio has reduced peak demand by 1,916 MW.

The reductions in energy use translate into:

- \$955 million in annual energy bill savings (electric, oil and natural gas) for program participants;
- 2,400 tons of annual nitrogen oxide (NO_x) emission reductions;
- 4,750 tons of annual sulfur dioxide (SO₂) emission reductions; and
- 2.5 million tons of annual carbon dioxide (CO₂) emission reductions, which are equivalent to removing 491,000 automobiles from New York's roadways.

Table 2-6. Cumulative SBC Benefits from Installed Measures through June 30, 2011 (New York Energy \$martSM and EEPS)

Benefits	Through Year-End 2007a	Through Year-End 2008	Through Year-End 2009	Through Year-End 2010	Through June 30, 2011
Electricity Savings from Energy Efficiency and On-Site Generation (Annual GWh)	3,070	3,220	3,820	4,584a	5,263a
Peak Demand Reduction ¹ (MW)	1,200	1,275	1,415	1,765a	1,916a
Permanent Measures (MW)	650	700b	824	1,035a	1,030a
Curtable ²	550	575	590	729	885
Net Fuel Savings (Annual MMBtu)	4,460,000	5,400,000	4,600,000b	5,810,000a	6,490,000
Annual Energy Bill Savings to Participating Customers (\$ Million)	\$570	\$590	\$680	\$804	\$955
Renewable Energy Generation (Annual GWh)	106	106	106	106	108
Net Additional Jobs ³	2,917	3,060	3,542	4,077	4,077
NO _x Emissions Reductions (Annual Tons) ⁴	2,570	2,800	3,030	2,130	2,400
SO ₂ Emissions Reductions (Annual Tons) ⁴	4,720	5,120	5,710	4,180	4,750
CO ₂ Emissions Reductions (Annual Tons) ⁴	2,000,000	2,200,000	2,300,000	2,220,000	2,500,000
Equivalent number of cars removed from NY roadways	400,000	435,000	464,000	445,000	491,000

a Savings for the **New York Energy \$martSM** Products Program are estimated based on market data, survey research, and deemed savings values. An update to this analysis has been incorporated into this report. New savings values reflect appliance and lighting sales attributable to the program in 2008 and 2009, although savings for those prior years have not been back-adjusted in this report. The Q3 2011 report will add savings for 2007 lighting purchases that have not yet been accounted for.

b Fuel savings decreased over year-end 2008 due to the installation of two large combined heat and power facilities through the FlexTech Program.

¹Does not include 11.7 MW of renewable energy generation capacity.

²Curtable MW has decreased due to a reassessment of the impact of the Enabling Technologies Program. MW enabled under the SBC2 program Enabling Technologies for Price Responsive Load was not required to persist beyond the period of the contract. As such, the MWs available have steadily declined since the program's close.

³Figures in this row represent jobs created through year-end 2010 for the **New York Energy \$martSM** Program only, based on the methodology updated in 2011. Results for the years previous to 2010 have been restated in this table (from those published in 2010 quarterly and annual reports) to be consistent with the updated methodology.

⁴These emission reductions are associated with both electric and fossil fuel saving measures. Under a cap-and-trade system, the total number of emission allowances is determined by regulation. Regulated entities can purchase allowances and collectively emit up to the cap that is currently in place. Therefore, in the near term, electric efficiency projects may not decrease the overall amount of emissions going into the atmosphere. Nevertheless, electric efficiency projects will reduce end-users' responsibility or environmental footprint associated with emissions from electricity production. Beginning in Q1 2010, NYSERDA now estimates reductions in emissions of carbon dioxide (CO₂), nitrogen oxides (NO_x), and sulfur dioxide (SO₂) associated with electric efficiency projects based on average emission rates that include emissions associated with imports of electricity. In the past, NYSERDA has reported emissions reductions using marginal emission factors; this transition to average emission factors was performed to be consistent with a footprint reduction framework.

Figure 2-1 and Figure 2-2, respectively, show electricity and demand savings by utility service area for the **New York Energy SmartSM** programs. The National Grid (36%) and Con Edison (32%) service areas show the highest percentages of electricity savings. The same service areas, Con Edison (37%) and National Grid (34%), are also seeing the highest percentages of the overall demand reductions. Both of these figures are based on the cumulative annual savings achieved through June 30, 2011. For certain upstream market transformation and informational programs representing about 32% of the portfolio electricity savings and 16% of the demand reductions, savings were apportioned to utility areas based on incentive dollars.

Figure 2-3 and Figure 2-4, respectively, show electricity and demand savings by utility service area for the EEPS funded programs, through June 30, 2011. The Con Edison (45%) and National Grid (25%) service areas show the highest percentages of electricity savings. For overall demand reductions, the Con Edison (40%) and National Grid (25%) service areas also show the highest percentages.

Figure 2-1. New York Energy \$martSM Electricity Savings by Utility through June 30, 2011

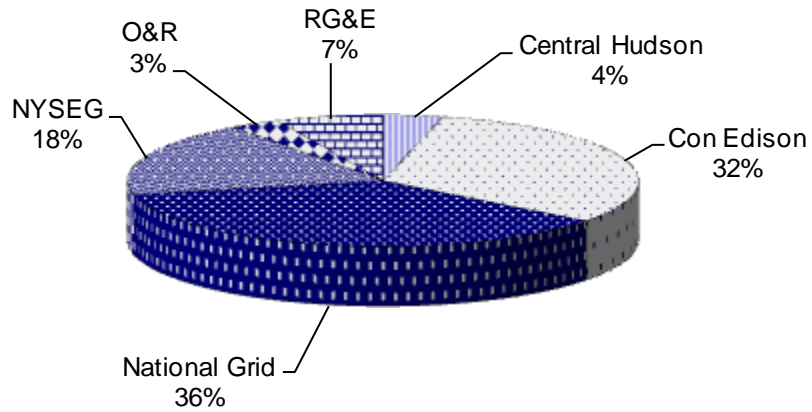


Figure 2-2. New York Energy \$martSM Demand Savings by Utility (includes callable MW) through June 30, 2011

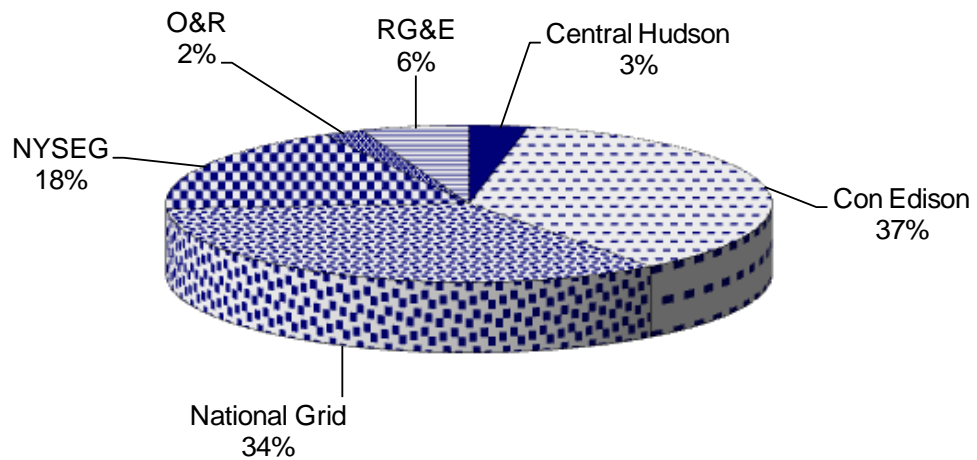


Figure 2-3. EEPS Electricity Savings by Utility through June 30, 2011

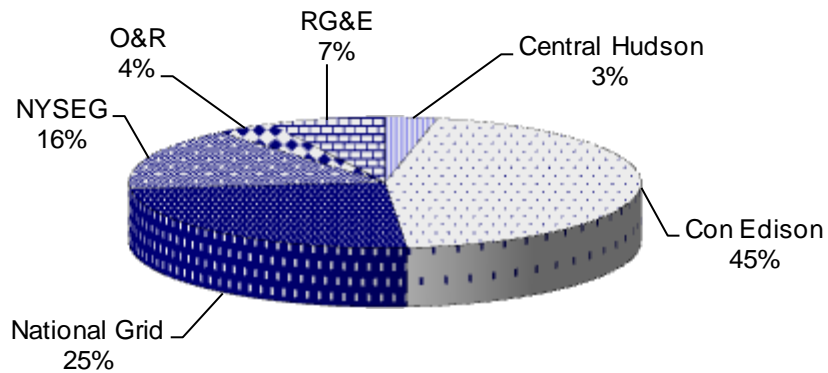


Figure 2-4. EEPS Demand Savings by Utility (includes callable MW) through June 30, 2011

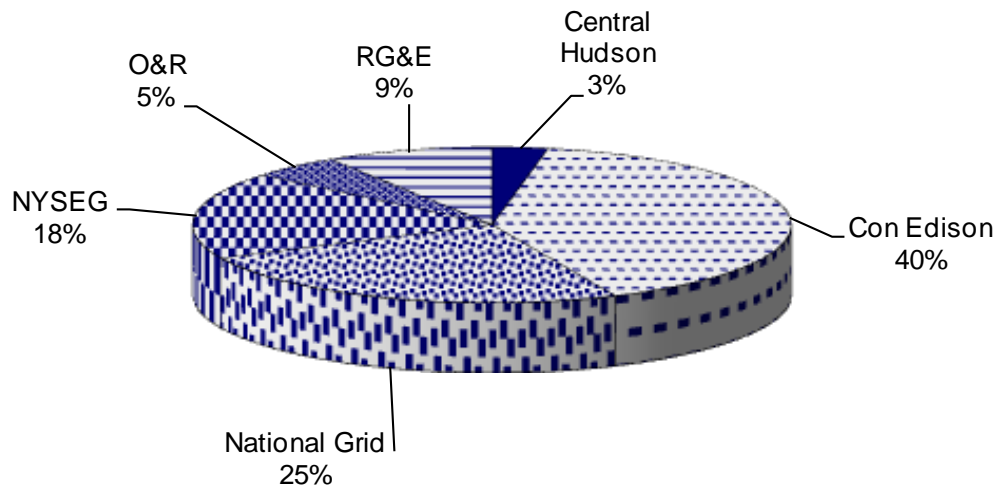


Table 2-7 shows the cumulative annual electricity savings, demand reductions, and other fuel savings from each SBC program, including the **New York Energy \$martSM** and EEPS programs. Entries for Renewable Energy represent clean generation rather than reductions in use.

Table 2-7. Adjusted Cumulative SBC Annual Savings by Program through June 30, 2011

Program	Adjusted Cumulative Annual Savings		
	GWh	MW	MMBtu
Existing Facilities: Permanent	1,587.4	329.0	-60,129a
Existing Facilities: Callable	N/A	642.8	N/A
New York Energy \$martSM Business Partners	128.2	33.3	N/A
New York Energy \$martSM Loan Fund and Financing	87.9	52.0	598,666
New Construction Program	442.5	111.2	254,737
Flex Tech Technical Assistance: Permanent	1,235.4	226.1	3,889,372
Flex Tech Technical Assistance: Curtailable	N/A	143.6	N/A
Industry and Process Efficiency	134.6	17.2	276,594
C/I Sector Overlap Removed	270.7	55.3	172,677
Subtotal Commercial/Industrial	3,345.3	1,500.0	4,786,563
Single Family Home Performance	70.3	25.3	2,440,912
Multifamily Building Performance	125.1	13.0	991,356
Market and Community Support Program	776.2	157.6	444,103
CFL Expansion	687.3	62.2	N/A
EmPower New York Program	64.5	9.6	197,928
Subtotal Residential and Low Income	1,723.4	267.7	4,074,299
DG-CHP Demonstration Program	542.4	98.3	-3,667,164b
Demand Response and Innovative Rate Research	N/A	99.0	N/A
Renewable Energy Production	107.9	11.7	N/A
Subtotal R&D	650.3	209.0	-3,667,164
Cross Sector Overlap Removed	348.1	49.2	-1,295,093
SBC Portfolio	5,371c	1,927c	6,488,791

N/A – not applicable, the energy source is not reduced for the particular program.

a Up to this point, EFP has not tracked ancillary fuel savings or use resulting from installation of electric saving measures. The negative fuel savings shown here represent additional fuel use due to the installation of on-site generation at a very small number of projects that were recently evaluation for impacts. In the future, EFP will begin tracking both fuel saving and use more consistently.

b Because the electricity saved by the DG/CHP projects replaces electricity formerly purchased from the grid, the program has reduced fuel used at central generating stations, for a net decrease statewide due to greater efficiency of the DG/CHP systems at sites where imported fuel is used. The fuel avoided at the central generating plant is determined from the electricity generated by the DG/CHP installations. Furthermore, at additional projects such as waste water treatment plants, electricity generation is powered fully or partially by digester gas produced on site. Such fuel switching achieves natural gas conservation above and beyond what is achieved through efficiency alone.

c This sum includes 107.9 GWh and 11.7 MW of renewable energy production, whereas the portfolio-level electricity and demand savings from energy efficiency and on-site generation shown in Table 2-6 does not.

2.2.2 New York Energy \$martSM Progress Toward Goals

Overall, the **New York Energy \$martSM** programs are performing well toward their five-year goals³ in the areas of energy savings, demand reduction, and other key metrics. This section discusses general progress toward these goals. Sections 3, 4, and 5 contain more detailed information. In summary:

- The C/I programs are showing good progress toward their individual electricity and demand savings goals. Two programs have exceeded their goals for electric savings while three programs have exceeded their goals for demand reduction. Other C/I **New York Energy \$martSM** programs are making good progress toward their goals.
- Within the C/I program area, five different five-year goals have been set for metrics other than energy and peak demand savings. These metrics capture progress in key areas such as the number of customers served, allies participating, and dollars leveraged. The programs are making good progress toward these non-energy goals with two out of the five goals achieved.
- The Residential and Low-Income programs are making good progress toward their individual electricity and fuel savings goals. Three programs have surpassed their electricity goals while one program has surpassed its fuel savings goals. The remaining residential and low-income programs continue to make good progress towards their goals.
- Twenty-eight long-term goals have been set for important non-energy metrics in the Residential and Low-Income areas, including the number of customers participating, outreach efforts and people affected, and dollars leveraged. Overall, the programs are making progress toward these goals, having exceeded many of them at this time.
- Almost 40 long-term non-energy goals have been set for the R&D portfolio. These goals address metrics such as solicitations released, projects funded, information dissemination, co-funding, and technology transfer. In general, the R&D programs are also tracking well toward these long-term non-energy goals.

³ Five-year goals were specified in the *System Benefits Charge Proposed Plan for New York Energy \$martSM Programs (2006-2011)*, March 2, 2006. These goals were set at the program level, and included energy savings, demand reductions and other important metrics. The five-year goals cover the time period from July 1, 2006 through June 30, 2011. As noted earlier, these five-year goals were updated by NYSERDA due to the six-month program extension approved by DPS in Q1 2011. Future reports will be based on the new goals.

2.3 Workforce Development

2.3.1 Program Description

In its June 2009 *Order Authorizing Workforce Development Initiatives*⁴, the Commission approved a Workforce Development (WFD) Program to be administered by NYSERDA. The goals of the program are to overcome the barriers to workforce training and to expand the existing energy efficiency technical training infrastructure across New York State. An additional goal is to increase employment opportunities for underserved populations in energy efficiency occupations in New York through the Career Pathways for Disadvantaged Workers program. These program efforts will provide the present and future workforce with the technical skills necessary to serve the needs of the portfolio of programs funded through the Energy Efficiency Portfolio Standard (EEPS).

Career Pathways and Technical training, targeted to reach 6,237 participants, is being delivered through a network of training partners chosen through both open enrollment and competitive solicitations. To date, NYSERDA has contracted more than 40 training partnership agreements under open enrollment solicitation PON 1816 and contracted seven new training partnerships under the EEPS component of competitive solicitation PON 1817. NYSERDA has partnered with experienced education providers including, but not limited to, community colleges, Board of Cooperative Educational Services (BOCES), trade unions, and not-for-profits, with the goal of rapidly ramping up training capacity through its state-wide network of training providers.

The Workforce Development Program has realized some early success as training partnerships are rolled out and students begin to graduate and move on to advanced training or employment opportunities. The HVAC Excellence program at Capital Region BOCES was recently the subject of local media attention as three out of the 12 students enrolled in the program have been offered high paying jobs. The Association for Energy Affordability of the Bronx is responding to New York City's Greater Greener Buildings Legislation by offering training in benchmarking for large multifamily and commercial/industrial buildings. Serving formerly incarcerated individuals and their families, the Osborne Association has trained students in the Roots of Success-

⁴Case 07-M-0548 Proceeding on Motion of the Commission Regarding an Energy Efficiency Portfolio Standard, *Order Authorizing Workforce Development* initiatives, issued June 22, 2009.

Environmental Literacy that has paved the way for enrollment in advanced technical training as well as the placement of several graduates in entry level energy efficiency careers.

Another important goal of the WFD Program is bridging the gap between training and employment through on-the-job training, offered through internships and apprenticeships. These programs provide the hands-on experience employers demand. The WFD Operating Plan called for NYSERDA to implement 15 new sustainable internship/apprenticeship programs; 10 new programs have been initiated to date. Each program includes employer outreach and career development/coaching services to help develop institutional relationships between training providers and local employers. Several new internship programs are planned to be contracted during the third quarter.

2.3.2 Program Accomplishments

Table 2-8 shows WFD program goals and progress to date as a percentage of the levels set in the Program Operating Plan.

Table 2-8. Workforce Development Program - Goals and Achievements

WFD Training Categories	Program Goals January 1, 2010 - December 31, 2012 ¹	Contracted To Date January 1, 2010 - June 30, 2011 ²	Achieved To Date January 1, 2010 - June 30, 2011	% of Goal Achieved
Number of Students Trained (Technical Training)	2,225	3,839	496	22%
Number of Students Trained (Career Pathways)	1,797	4,203	646	36%
Number of Students earning Certifications ³	2,215	440	440	20%
Total Number of Students Trained	6,237	8,482	1,782	29%

¹Program Goals - the number of participants to be trained as outlined in the EEPS Workforce Development Operating Plan under the June 22, 2009 Order Authorizing Workforce Development Initiatives (CASE 07-M-0548)

²Contracted To Date - the number of participants to be trained per contract agreements with NYSERDA training partners. These show the current status of contracting with training providers and thus show progress toward operating plan goals.

³Certifications - this category reflects reimbursement issued to individuals who have achieved a nationally recognized energy efficiency credential such as, but not limited to, those issued by the Building Performance Institute, Association of Energy Engineers, U.S. Green Building Council or the Residential Energy Services Network.

Table 2-9 shows the status of a number of key program outputs from the WFD Operating Plan, including the total funds allocated to this specific program output compared to the amount encumbered and paid to date.

Table 2-9. Key Program Outputs from Program Inception to June 30, 2011

Program Outputs	Operating Plan Goals	Achieved To Date January 1, 2010 - June 30, 2011
Program Dollars Committed (PON 1816) ¹	\$3,812,410	\$2,524,779
Program Dollars Committed (PON 1817) ¹	\$1,250,000	\$1,097,500
Number of Training Partners contracted	N/A	41
Number of Internship/Apprenticeship Programs	15	10

¹Committed refers to program funds that are encumbered and actually paid to contractors-in this case the training partners contracted through the WFD Program.

3 Commercial/Industrial Programs

3.1 Commercial/Industrial (C/I) Evaluation Activities

During the second quarter of 2011, the following evaluation projects were completed on the Commercial/Industrial programs:

- Market characterization and assessment evaluation on the FlexTech Program

In coming quarters, NYSERDA expects to complete the following evaluation projects:

- Market characterization and assessment evaluations on the Existing Facilities, Business Partners, Industrial and Process Efficiency and Workforce Development programs;
- Process evaluations on Business Partners, New Construction, and Workforce Development¹ programs; and
- Impact evaluation studies on Existing Facilities, FlexTech, Industry and Process Efficiency, New Construction, Energy \$mart Focus (Benchmarking) and Business Partners (Lighting) programs, as well as a C/I Nonparticipant Spillover study.

NYSERDA will summarize evaluation results from these projects in future evaluation and status reports.

3.2 Summary of Commercial/Industrial Program Budget and Spending Status

Table 3-1 presents detailed budget and funding information for the **New York Energy \$martSM** C/I programs. Table 3-2 presents the same information for EEPS programs.

¹This study is being jointly conducted as a process and market characterization/assessment effort.

Table 3-1. Commercial/Industrial Programs – New York Energy \$martSM Financial Status through June 30, 2011 (\$ million)

Program	Budget ¹			Funds Spent			Encumbered Funds ⁴ % of Budget Encumbered	Committed Funds ⁵ % of Budget Committed
	SBC I & SBC II ²	SBC III ³	Total Budget	SBC I & SBC II ²	SBC III ³	Total Funds Spent		
Existing Facilities ⁶	135.4	164.6	300.0	135.4	93.9	229.3 76.4%	277.5 92.5%	299.6 99.9%
New York Energy \$martSM Business Partners	21.1	22.8	43.9	21.1	15.0	36.1 82.4%	38.8 88.5%	39.2 89.4%
Loan Fund and Financing	12.3	31.3	43.7	12.3	26.0	38.4 87.9%	41.8 95.7%	42.9 98.3%
Energy Smart Focus	4.8	17.0	21.9	4.8	12.7	17.5 80.1%	21.5 98.2%	21.9 100.0%
New Construction Program	53.1	119.3	172.4	53.1	70.3	123.4 71.6%	160.4 93.1%	172.4 100.0%
FlexTech Technical Assistance	20.4	30.7	51.1	20.4	15.4	35.8 69.9%	39.9 77.9%	42.1 82.3%
Total Commercial & Industrial	\$247.1	\$385.8	\$632.9	\$247.1	\$233.3	\$480.5 75.9%	\$579.8 91.6%	\$618.1 97.7%

¹Reflects carryover in funds and reallocation as approved by the PSC in 2007.

²SBC I: July 1, 1998 through June 30, 2001; SBC II: July 1, 2001 through June 30, 2006.

³SBC III: July 1, 2006 through December 31, 2011.

⁴Encumbered funds associated with signed contracts and purchase orders.

⁵Committed funds associated with encumbered funds and pending contracts.

⁶Existing Facilities Program (EFP) was formed by merging the Peak Load Management and Enhanced Commercial/Industrial Performance (ECIPP) programs.

Totals may not sum exactly due to rounding.

Source: NYSERDA

Table 3-2. Financial Status of the EEPS Commercial/Industrial Programs through June 30, 2011 (\$ million)

		Total Budget	Total Funds Spent	% of Budget Spent	Encumbered Funds % of Budget Encumbered	Committed Funds % of Budget Committed
Program¹						
Existing Facilities	Electric	23.2	9.7	41.9%	20.2 86.9%	23.9 102.9%
	Gas	3.6	0.3	7.5%	1.9 53.0%	2.7 77.3%
Commercial New Construction Program	Electric	62.7	8.1	12.9%	21.8 34.7%	38.6 61.5%
	Gas	3.7	0.1	3.5%	0.5 12.5%	0.5 12.9%
FlexTech Expansion	Electric	14.9	5.0	33.5%	12.8 86.1%	14.2 95.6%
	Gas	1.6	0.3	19.5%	1.0 59.3%	1.0 62.7%
Industry and Process Efficiency	Electric	92.8	18.6	20.0%	58.5 63.0%	61.1 65.8%
	Gas	14.8	1.9	12.9%	13.9 93.7%	14.6 98.8%
Benchmarking		9.8	<0.1	0.4%	3.9 39.9%	4.6 46.5%
Agriculture	Electric	4.0	0.3	6.8%	1.0 25.1%	1.1 28.9%
	Gas	0.4	<0.1	6.8%	0.1 24.7%	0.1 24.7%
Total Commercial/Industrial		\$231.6	\$44.3	19.2%	\$135.4 58.5%	\$162.5 70.2%

¹Program budgets exclude administration and evaluation dollars.

Totals may not sum exactly due to rounding.

Source: NYSERDA

3.3 Summary of Commercial/Industrial Evaluation Results

3.3.1 Energy, Peak Demand, and Fuel Savings

Tables 3-3 through 3-8 summarize the estimated electricity savings, peak demand reduction, and other fuel savings for each of the C/I sector programs, both **New York Energy \$martSM** and EEPS. Note that individual program savings are not adjusted for program overlaps. To avoid double counting in the total sector-level savings estimates, the amount of overlap among the individual program savings estimates is subtracted at the bottom of the table.

Table 3-3 and Table 3-4 show progress for the **New York Energy \$martSM** and EEPS funded programs, respectively, toward their established goals for electricity savings. Overall, two out of six **New York Energy \$martSM** programs (Existing Facilities and FlexTech) have exceeded their five-year **New York Energy \$martSM** goals. EEPS electric-funded programs are also making good progress toward their goals.

Table 3-5 and Table 3-6 show progress for the **New York Energy \$martSM** and EEPS funded programs, respectively, toward attaining peak demand reductions, as well as percent of the **New York Energy \$martSM** demand reduction goals that have been achieved. Overall three out of six **New York Energy \$martSM** programs (Business Partners, New Construction and FlexTech), as well as the C/I portfolio as a whole, have exceeded their five year **New York Energy \$martSM** peak demand reduction goals. Peak demand savings goals were not set for the EEPS electric-funded programs.

Table 3-7 and Table 3-8 show fuel savings achieved by the **New York Energy \$martSM** and EEPS funded programs, respectively, including progress of EEPS-funded programs at achieving their ultimate natural gas targets. Five year fuel savings goals were not set for the **New York Energy \$martSM** programs. EEPS natural gas-funded programs have just begun reporting savings and future reports will continue to show progress toward the EEPS natural gas goals for these programs. Fuel savings reported for the **New York Energy \$martSM** programs include savings for fuels such as oil and natural gas whereas fuel savings reported for the EEPS-funded programs show MMBtu savings for natural gas only.

Table 3-3. New York Energy \$martSM C/I Program Cumulative Annual Electricity Savings through June 30, 2011 and Progress toward Goals

Program	Energy Savings (GWh)				
	Savings Achieved through			Goal (by June 30, 2011) ³	Progress Toward Goal (% achieved)
	June 30, 2006	June 30, 2011	July 1, 2006 through June 30, 2011		
Existing Facilities Program ¹	837.0a	1,516.3	679.3	576b	118%
Business Partners Program	54.1	128.2	74.1	97	76%
Loan Fund and Financing	49.6	87.9	38.2	N/A	N/A
Energy Smart Focus Program	N/A ⁴	N/A ⁴	N/A ⁴	53	0%
New Construction Program	188.1c	429.0	240.8	323d	74%
Flex Tech Technical Assistance	644.1	1,198.3	554.2	466	119%
Overlap Removed²	126.7	270.7	143.9	N/A	N/A
Statewide C/I Total	1,646.3	3,089.0	1,442.7	1,515	95.2%

¹The original Peak Load Management Program, now a component of the Existing Facilities Program, had a goal of 55 GWh in Con Edison, and achieved 60% of the goal as of 4th quarter 2009 at which time it was absorbed into EFP. ECIPP did not have a goal for permanent reduction in Con Edison territory, thus combining the two programs' results in the five-year goal not being applicable.

²Overlap factors were updated in Q1 2008.

³Goals for the **New York Energy \$martSM** Program are specified in NYSERDA's March 2008 and, where applicable, March 2009 operating plans. For some programs, the latest published goal values do not fully reflect adjustments that are necessary to align goals with cross-program funding reallocations approved by DPS since the operating plans were completed. These funding reallocation adjustments and any other necessary updates or corrections to the **New York Energy \$martSM** Program goals were reflected in NYSERDA's February 28, 2011 revised operating plan (resubmitted with revisions April 6, 2011) and will be used in future evaluation reports, starting in Quarter 3, 2011, as the benchmark for program performance.

⁴Energy Smart Focus is primarily a sector-based energy information and services program. Energy and demand savings that may be attributable to the Focus Program are currently tracked and reported under the other **New York Energy \$martSM** programs.

a Savings reported previously included projects funded through the Con Edison Power Savings Partners Program. These savings have been removed to more accurately reflect accomplishments.

b The goal of 576 GWh represents a "post program" goal and reflects expected achievements once all funds are expended.

c These savings were adjusted following an extensive clean-up of the program database, which resulted in a change to the program realization rate.

Totals may not sum exactly due to rounding.

Table 3-4. EEPS C/I Program Cumulative Annual Electricity Savings through June 30, 2011 and Progress toward Goals

Program	Energy Savings (GWh)		
	Savings Achieved through June 30, 2011a	Goal ¹	Progress Toward Goal (% achieved)
Existing Facilities Program: Electric Funding	71.1	146.3	49%
Existing Facilities Program: Ancillary Benefits from Gas Funding	0.1	N/A	N/A
New Construction Program: Electric Funding	13.6	278.9	5%
Flex Tech Technical Assistance: Electric Funding	37.0	267	14%
Industry and Process Efficiency: Electric Funding	134.6	840	16%
Statewide C/I Total	256.3	1,532.2	16.7%

a The EEPS programs shown in this table began reporting electricity savings in the following months: Existing Facilities in April 2010; New Construction Program in August 2009; Flex Tech in July 2010; and Industry and Process Efficiency in June 2009.

¹The time frames for achieving savings goals vary by program. For the Existing Facilities Program, the savings goal is through December 31, 2014; for the New Construction Program and FlexTech Program, the savings goals are through December 31, 2015; for the Industry and Process Efficiency Program, the savings goal is through December 31, 2013.

Totals may not sum exactly due to rounding.

Table 3-5. New York Energy \$martSM C/I Program Cumulative Peak Demand Savings through June 30, 2011 and Progress toward Goals

Program	Peak Demand Savings (MW)				
	Savings Achieved through		July 1, 2006 through June 30, 2011	Goal ⁴	Progress Toward Five-Year Goal (% achieved)
	June 30, 2006 (Cumulative)	June 30, 2011 (Cumulative)			
Existing Facilities Program Permanent ¹	175.0a	311.9	136.9	146b	94%
Existing Facilities: Callable ²	421.1a	642.8	221.7	285	78%
Business Partners Program	11.8	33.3	21.5	19	113%
Loan Fund and Financing	14.3	52.0	37.7	N/A	N/A
Energy Smart Focus	N/A ⁴	N/A ⁵	N/A ⁵	10	0%
New Construction Program	41.0c	107.9	66.9	38	176%
Flex Tech TA	120.9	219.2	98.3	95	103%
Flex Tech TA: Callable	10.2	143.6	133.5	N/A	N/A
Overlap Removed³	24.5	55.3	30.8	N/A	N/A
Statewide C/I Total	769.9	1,455.5	685.6	593	115.6%

Note: N/A means not applicable (*i.e.*, a goal has not been set for this program).

¹The original Peak Load Management Program, now a component of the Existing Facilities Program, had a goal of 45 MW of permanent reduction in Con Edison, and achieved 26% of the goal as of 4th quarter 2009 at which time it was absorbed into EFP. ECIPP did not have a goal for permanent reduction in Con Edison territory, thus combining the two programs' results in the five-year goal not being applicable.

²EFP MW reductions were adjusted for Q2 2011 reporting to collect callable MW that were formerly reported as permanent. 135 MW were moved from permanent to callable.

³Overlap factors were updated in Q1 2008.

⁴Goals for the New York Energy \$martSM Program are specified in NYSERDA's March 2008 and, where applicable, March 2009 operating plans. For some programs, the latest published goal values do not fully reflect adjustments that are necessary to align goals with cross-program funding reallocations approved by DPS since the operating plans were completed. These funding reallocation adjustments and any other necessary updates or corrections to the New York Energy \$martSM Program goals were reflected in NYSERDA's February 28, 2011 revised operating plan (resubmitted with revisions April 6, 2011) and will be used, starting in Quarter 3, 2011, as the benchmark for program performance.

⁵ Energy Smart Focus is primarily a sector-based energy information and services program. Energy and demand savings that may be attributable to the Focus Program are currently tracked and reported under the other New York Energy \$martSM programs.

a Savings reported previously included projects funded through the Con Edison Power Savings Partners Program. These savings have been removed to more accurately reflect accomplishments.

b The goal of 146 MW represents a "post program" goal and reflects expected achievements once all funds are expended.

c These savings were adjusted following an extensive clean-up of the program database, which resulted in a change to the program realization rate.

Totals may not sum exactly due to rounding.

Table 3-6. EEPS C/I Program Cumulative Peak Demand Savings through June 30, 2011

Program	Peak Demand Savings (MW)
	Savings Achieved through June 30, 2011
Existing Facilities Program	17.1
Existing Facilities Program: Ancillary benefits from gas funding	.02
New Construction Program	3.4
Flex Tech TA	6.9
Industry and Process Efficiency	17.2
Statewide C/I Total	44.6

Note: There were no EEPS goals for peak demand savings.
Totals may not sum exactly due to rounding.

Table 3-7. New York Energy \$martSM C/I Program Cumulative Annual Fuel Savings through June 30, 2011a

Program	Fuel Savings (MMBtu)
	Savings Achieved through June 30, 2011
Existing Facilities Program	-71,870b
Loan Fund and Financing	598,666
New Construction Program	8,786
Flex Tech Technical Assistance ¹	3,453,542
Overlap Removed	172,677
Statewide C/I Total	3,816,447

Note: There were no five-year **New York Energy \$martSM** goals for fuel savings.

¹The methodology to assess impacts focuses on developing samples based on electricity savings, rather than fuel, resulting in a less than optimal sample for fuel-savings projects and fluctuation over time in the calculated impacts. Also, the program recommends on-site generation, which would result in an increase in fuel use, offsetting fuel reductions achieved.

a **New York Energy \$martSM** MMBtu savings reported in this table include savings for fuels such as oil and natural gas.

b Up to this point, EFP has not tracked ancillary fuel savings or use resulting from installation of electric saving measures. The negative fuel savings shown here represent additional fuel use due to the installation of on-site generation at a very small number of projects that were recently evaluated for impacts. In the future, EFP will begin tracking both fuel saving and use more consistently.

Totals may not sum exactly due to rounding.

Table 3-8. EEPS C/I Program Cumulative Annual Natural Gas Savings June 30, 2011 and Progress toward Goals¹

Program	Natural Gas Savings (MMBtu) ²		
	Savings Achieved through June 30, 2011a	Goal ³	Progress toward Goal (% Achieved)
Existing Facilities Program: Gas funding	11,328	155,927	7%
Existing Facilities Program: Ancillary benefits from electric funding	413	N/A	N/A
New Construction Program: Gas funding	38	285,743	<1%
New Construction Program: Ancillary benefits from electric funding	245,913	N/A	N/A
Flex Tech Technical Assistance: Gas funding	25,833	381,963	7%
Flex Tech Technical Assistance: Ancillary benefits from electric funding	409,998	N/A	N/A
Industry and Process Efficiency: Gas funding	276,594	1,682,265	16%
Statewide C/I Total	970,116	2,505,898	39%

¹The MMBtu savings for EEPS-funded programs presented consist of natural gas only, and these figures do not include savings for other fuels such as oil and propane.

²EEPS natural gas goals and impacts are typically tracked in therms and have been converted to MMBtu units in this report so total impacts can be summed with those from **New York Energy \$martSM** programs for NYSERDA's entire System Benefits Charge portfolio.

³For the Existing Facilities Program, the savings goal is through December 31, 2013; for the New Construction and Flex Tech programs, savings goals are through December 31, 2015; for the Industrial and Process Efficiency Program, the savings goal is through December 31, 2013. EEPS gas goals and impacts were originally stated in therms and have been converted to MMBtu units so total impacts can be summed with those from **New York Energy \$martSM** programs.

a The EEPS programs shown in this table began reporting natural gas savings in the following months: Existing Facilities in October 2010; FlexTech in July 2010; and Industry and Process Efficiency in April 2010.

3.3.2 Summary of Other Key Program Impacts and Results

Across the programs, five additional five-year goals were set for other key metrics besides energy savings, such as the number of business partners participating, number of Loan Fund lenders and number of participants receiving assistance through the Focus program. The programs are making good progress toward these goals with two out of five goals exceeded.

3.4 Existing Facilities Program

3.4.1 Program Description

The Existing Facilities Program (EFP) offers performance-based and pre-qualified incentives for a variety of energy projects to customers or Energy Service Companies (ESCOs) for electric efficiency, natural gas efficiency, demand response, and combined heat and power (CHP) projects. Allowing customers, ESCOs and contractors access to multiple incentive strategies to support their energy projects will enable the New York ESCO community to continue to grow the market in existing facilities for energy efficiency and non-building efficiency measures. Demand response incentives cover equipment and technical solutions that enable significant demand reduction resources and require participation in New York Independent System Operator (NYISO) demand response programs.

3.4.2 Program Accomplishments

With EFP being the product of merging two programs, continued tracking of the original individual programs' goals is no longer possible.² Nevertheless, NYSERDA does track EFP outputs that somewhat parallel the former program goals. A count of EFP customer projects, and the leveraged funds for the entire program since 1999, is listed in Table 3-9.

Table 3-9. Existing Facilities Program – Program Outputs

Output	Value
Customer projects	9,549
Leveraged Funds (\$ million)	\$845 million

3.4.3 Follow-Up on Evaluation Recommendations

There are no recent Existing Facilities evaluation recommendations to report. Any new program evaluation recommendations will be included in future quarterly and annual reports, including information on their status and NYSERDA's response to the recommendation.

²Although the goals for PLMP (750 customers receiving assistance) and ECIPP (3,300-3,500 customer projects) are similar, they are not the same metric; consequently the goals cannot be merged. As for the ECIPP leveraged funds goal (\$400-\$450 million), the data merge does not permit continued tracking of this information.

3.5 New York Energy \$martSM Business Partners

3.5.1 Program Description

The New York Energy \$martSM Business Partners Program is a consolidation of the Commercial Lighting Program (CLP), Premium Efficiency Motors (PEM) Program, the Commercial HVAC Program, and the Innovative Opportunities Program. This new program focuses on market development. New York Energy \$martSM business partners are allies that agree to work with NYSERDA to promote energy-efficient products and services. In exchange, business partners gain access to special training, tools, guidelines, and performance incentives. NYSERDA works with its business partners to help them differentiate their businesses in a highly competitive marketplace, while assuring appropriate quality control mechanisms. The strategy of partnering with businesses helps to strengthen the market infrastructure leading to increased energy-efficient product and service availability and demand. Thus, business partner efforts will also drive greater activity in NYSERDA's customer-targeted programs.

3.5.2 Program Accomplishments

Table 3-10 shows the Business Partners Program goal to sign up 1,800 partners between July 1, 2006 and June 30, 2011. Although more than 800 allies are currently participating in the commercial lighting program element, a total of 274 partners have signed up since July 1, 2006.

Table 3-10. New York Energy \$martSM Business Partners Program – Goals and Achievements

Activity	Program Goals (July 1, 2006 through June 30, 2011)	Achieved July 1, 2006 through June 30, 2011	% of Goal Achieved
Business Partners (signed up)	1,800	425	24%

3.5.3 Follow-Up on Evaluation Recommendations

There are currently no outstanding business Partners evaluation recommendations. Any new program evaluation recommendations will be included in future quarterly and annual reports.

3.6 New York Energy \$martSM Loan Fund and Financing Program

3.6.1 Program Description

The now closed New York Energy \$martSM Loan Fund and Financing Program expanded the availability of low-interest capital to help implement energy-efficiency projects and process improvements. Lenders enrolled in the program by signing participation agreements to reduce the interest rates on energy-related loans in exchange for a lump sum subsidy paid by NYSERDA. The Program's ongoing training of the financial sector included tools to allow lenders to calculate the cash flow advantages their customers would gain from making energy-efficiency improvements. The Green Jobs-Green New York Program now offered by NYSERDA will provide continued financing mechanisms for customers wishing to make energy related improvements to their buildings or facilities.

3.6.2 Program Accomplishments

Table 3-11 highlights the Loan Fund's five-year goals and accomplishments as of June 30, 2011. The Program surpassed its goals to sign up 75 lenders and leverage \$60 million through closed loans in the commercial and industrial sector. Although the number of commercial/industrial loans was in line with expectations, projects were much larger than anticipated. The Loan Fund per-project cap remained unchanged, but the loan amounts were larger than projected.

Table 3-11. New York Energy \$martSM Loan Fund and Financing Program – Goals and Achievements

Activity	Program Goals (July 1, 2006 through June 30, 2011)	Achieved July 1, 2006 through June 30, 2011	% of Goal Achieved
Customers receiving assistance (closed commercial/industrial loans)	550	292	53%
Participating lenders (signed participation agreements)	75	151	>100%
Leveraged loan amount (for closed commercial/industrial loans)	\$60 million	\$106 million	>100%

3.7 Energy Smart Focus Program

3.7.1 Program Description

Energy Smart Focus provides services to facilitate and encourage sector-specific energy-efficiency improvements and practices. The program is a marketing and information transfer effort that uses existing core **New York Energy \$martSM** programs and services to sponsor deployment, demonstration, research, and development projects in conjunction with sector customized strategies. Such strategies include benchmarking, targeted marketing materials and messages, tools and resource training, partnerships with trade associations, and integration with regional and national efforts.

3.7.2 Program Accomplishments

Table 3-12 shows the Energy Smart Focus Program five-year goal for participants receiving assistance. The Program has achieved 27% of its goal. Nevertheless, only the Energy Smart Schools Program element existed prior to July 2006 and, thus, services to other sectors have taken time to fully ramp up. Also shown are the Focus Program sector partnerships that have been developed. Partnerships include outside organizations, associations, agencies, utility account executives, supply chain partners and others who have pledged to assist in the development, promotion, and execution of the Energy Smart Focus Program.

Table 3-12. New York Energy \$martSM Focus Program – Goals and Achievements

Activity	Program Goals (July 1, 2006 through June 30, 2011)	Achieved July 1, 2006 through June 30, 2011	% of Goal Achieved
Participants Receiving Assistance	24,000	5,589	27%
Focus Sector Partnerships ¹	N/A	1,150	N/A

¹This metric was not part of the original SBC3 Operating Plan goals.

Table 3-13 shows the number of new projects brought into other NYSERDA programs by the Focus Program during the second quarter of 2011 and cumulatively to date.

Table 3-13. Projects Brought into Other NYSERDA Programs by Focus¹

Focus Sector	Number of 2nd Quarter Projects	Total Projects to Date (cumulative)
Colleges and Universities	2	92
Commercial Real Estate	13	202
Healthcare	19	118
Hospitality	23	206
Industrial	64	206
Institutions	34	177
Water and Wastewater	9	62
Total	164	1,063

¹Programs include Existing Facilities, FlexTech, and New Construction.

3.7.3 Sector Highlights

As a sector-based energy information and services program, metrics of success can be difficult to quantify for the Focus Program. Still, achievements are presented within this section in the context of sector highlights. While not quantifiable, these activities and achievements are indicative of success in penetrating the market and influencing the energy efficiency of individual sectors.

Focus on Colleges and Universities (C&U)

The Focus on Colleges and Universities program has been expanding outreach efforts to identify energy efficiency projects. The following selected activities have been completed to date:

- Eighty-seven one-on-one campus meetings completed to date representing 63 separate institutions.
- Seven presentations were made to five C&U organizations and their members.
- Interaction with other Focus efforts have included 12 leads passed along to Focus on Data Centers and Focus on Hospitality.

Focus on Commercial Real Estate Outreach (CREO)

In the second quarter of 2011, the Focus CREO continued to expand outreach efforts to new and existing clients, supporting projects and program applications, and working with NYSERDA to improve upon the Focus CREO approach. These efforts resulted in a significant increase in owner, manager, and tenant

interest in NYSERDA programs, which should drive program applications through the remainder of the contract period. The following are highlights of key activities performed to date.

- Selected outreach recipients include Macy's, Deutsche Bank, JP Morgan Chase, Fried Frank, and Morgan Stanley. The 12 directly referred projects in the second quarter will affect over 27 million square feet, saving approximately 284,000 kilowatt hours in annual energy usage, and resulting in the disbursement of over \$382,000 in incentive funding.
- During the second quarter of 2011, CREO conducted outreach meetings with 13 existing and potential new clients at which they discussed energy conservation projects, NYSERDA programs and the benefits of participating in CREO.
- The CREO program is currently providing active account management services to 23 clients who own and manage over 320 million square feet of property.

Focus on Hospitality

Focus on Hospitality (F on H) worked with 85 entities providing information on or directly referring them to EES incentive or technical assistance programs. In addition, F on H engaged with 92 individuals attending sponsored conferences or presentations. A summary of achievements to date is below:

- Provided information to over 42 Supply Channel Partners on gas efficiency incentives for commercial kitchen equipment and on incentives for lodging energy management systems.
- Engaged with members of the Hotel Association of New York City (HANYC) Sustainable Lodging Committee. The committee agreed to collaborate on presenting information on energy efficiency strategies and NYSERDA programs via webinar to the HANYC members. An outreach effort was initiated to engage the top 50 HANYC member properties based on size and contacts overseeing multiple properties.
- Presented to the Rochester and Rockland/Westchester chapters of the New York State Restaurant Association (NYSRA), and initiated an effort to engage other NYSRA chapter presidents to conduct similar presentations.
- Organized a multi-sector event in Syracuse during which a presentation was given to 25 attendees on commercial kitchen equipment efficiency, benefits and incentives.
- Support was provided to Eco Green Hotels, a lodging consultant/project manager working on supporting energy related projects for a New York City lodging property. Support was also provided to additional lodging properties, management firms and developers leading to 21 direct engagements for the Existing Facilities Program and 12 for the New Construction Program.

Focus on Industrial and Process

The Focus on Industrial and Process Program was initiated in October 2009. The Program focuses on outreach efforts to expand awareness of the benefits of energy efficiency and NYSERDA programs at manufacturing and data center sites. Below is a summary of activities this quarter:

- Continued providing support and working with 91 industrial and 70 datacenter customers to analyze potential projects and determine eligibility for NYSERDA programs.
- Finalized compressed air initiatives for the coming year.
- Presentations conducted at the New York State Department of Environmental Conservation Pulp & Paper roundtable.
- Contacted various vendors, trade allies, industrial development agencies and economic development corporations.
- Attended and presented at the Printing Industry Competitiveness Seminar, the Brooklyn Chamber of Commerce energy and finance opportunities event and the Manufacturing Expo.
- Collaborated with High Technology Rochester on the E3 Initiative for Food, Beverage & Agriculture Industry initiative and Central Hudson and Mid-Hudson Energy Smart Communities.

Focus on Institutions

In the second quarter of 2011, the Focus on K-12 Schools continued outreach, training and consultation to New York's K-12 public and private schools. Some of the most significant accomplishments during this quarter include attending the Green Schools NYC 2011 Event held by the Green Schools Alliance and receiving two ENERGY STAR® Leader Awards for the West Irondequoit Central School District.

The Focus on K-12 Schools program continued to expand its benchmarking effort and added an additional two schools from one new district. The year to date totals are now: 1,014 schools across 230 districts have been benchmarked through the Focus Program; 162 School Buildings have received a total of 281 building labels for their excellence in energy efficiency, and 15 districts have been awarded 30 ENERGY STAR® leader awards.

Also in the second quarter of 2011, the Focus on State Institutions provided verification data for the inventory of NYSERDA's CO₂ and CO₂e emissions for the 2009 and 2010 calendar years Climate Registry reporting.

Focus on Water and Wastewater

The Vertical Water and Wastewater Outreach program has been focusing on both utility staff and elected officials to expand awareness of the benefits of energy efficiency and NYSERDA programs at Water and Wastewater Treatment Plants. The following items represent a sampling of activities this quarter:

- Outreach to 27 members of the Infrastructure Alliance (including outside organizations, associations, agencies, etc.).
- Over 60 attendees trained at conferences.
- Over 257,000 people serviced by water systems impacted under Outreach to Large Facilities.
- 126 million gallons per day of wastewater design flow served under Outreach to Large Facilities - Energy Walkthroughs.
- Over 120 Best Practices Handbooks have been distributed.

3.8 New Construction Program

3.8.1 Program Description

The New Construction Program (NCP) was established to encourage energy-efficient design and building practices among architects and engineers and to urge them to inform building owners about the long-term advantages of building to higher energy-efficiency standards. The program aims to create long-term changes in design practices by integrating energy efficiency and green building concepts into new building designs. The program offers a performance-based approach in which incentives are determined by total electricity savings and are tiered to reward progressively better designs. Through design team incentives and recognition, the program promotes green building and Leadership in Energy and Environmental Design (LEED) and New York – Collaborative for High Performance Schools (NY-CHPS) certification projects. In early 2009, Energy Efficiency Portfolio Standard (EEPS) funds were added to expand NCP as one of NYSERDA's Fast Track programs.

3.8.2 Program Accomplishments

The NCP continues to monitor three key non-energy metrics to assess their growth as a proxy for program expansion. Table 3-14 shows these metrics and their current status. Overall, these measures continue to show progress over time, corresponding with program growth.

Table 3-14. New Construction Program – Key Activities

Activity	Achieved July 1, 2006 through June 30, 2011
Customers receiving assistance (completed projects)	624
Construction market affected (square feet)	65,960,000
Participating Architecture and Engineering (A&E) firms (completed projects)	998

3.8.3 Follow-up on Evaluation Recommendations

Table 3-15 presents a summary of NCP recommendations resulting from the process evaluation completed in fall 2010. This table also provides the status of each recommendation (*i.e.*, if a recommendation already has been adopted, if it will be adopted in the future, or if it will not be adopted) as well as a response from program staff to each recommendation. Per DPS quarterly and annual reporting guidelines, these program recommendations will be revisited with program staff and updated, as applicable, on a quarterly basis.

Table 3-15. New Construction Program Evaluation Recommendations and Status

Source of Recommendation (Contractor, Report Title, Date)	Recommendation	Status	Program Implementer Response to Recommendation and Adoption Decision Rationale
Research Into Action, New Construction Process Evaluation Report, November 2010	The NCP should focus on finding solutions in two problem areas – enrolling projects at the optimal time in the design phase and finding ways to ensure that scoping meetings, TA tasks, and Notices to Proceed run as efficiently as possible.	Plan to adopt	NCP staff have increased their presence at project scoping meetings to have better knowledge of OPC and TA on-site performance. Recent trainings have included feedback from these meetings in a continuous improvement process for TA and OPC interactions with customers. NCP is working with OPCs to streamline the scoping agenda, placing emphasis on the customer’s project earlier in the meeting. The purpose is to strengthen the customer’s understanding that NYSERDA places the customer’s project ahead of process, and to encourage customers to pursue deeper energy savings. NCP is currently formulating several options for issuing Notices to Proceed earlier in the

Source of Recommendation (Contractor, Report Title, Date)	Recommendation	Status	Program Implementer Response to Recommendation and Adoption Decision Rationale
			<p>process, and will review the options with NYSERDA contracts and legal staff. NCP received approval to provide financial support for Technical Assistants who also serve as a customer's Engineer of Record, which will encourage these TAs to bring more projects into the program at the optimal time.</p> <p>The ongoing OPC marketing push continues to identify projects earlier in design. For 2011 Q1 and Q2, this has resulted in leads 484% ahead and applications 150% ahead of the same period in 2010.</p>
<p>Research Into Action, New Construction Process Evaluation Report, November 2010</p>	<p>There is a lack of clarity among staff regarding NCP goals, particularly between goals of market transformation and savings acquisition. NCP management should spend time discussing how to manage and clarify these goal areas, especially during a time when savings acquisition and serving smaller projects are key EEPS goals.</p>	<p>Adopted</p>	<p>NCP management successfully worked with internal staff and DPS to pre-encumber SBC projects by the June 30, 2011 program deadline, and NCP staff are working on a similar approach to pre-encumber EEPS projects by the December 30, 2011 deadline. Through formal direction and informal discussion, staff and consultants are well aware that the EEPS program is focused on savings acquisition.</p>

3.9 FlexTech Technical Assistance Program

3.9.1 Program Description

The FlexTech Technical Assistance (TA) Program is a consolidation of services previously offered under the FlexTech, TA, and the Energy Audit Programs. The Program provides commercial and industrial customers with objective and customized information to facilitate wiser energy efficiency, energy procurement, and financing decisions. Cost-shared technical assistance is provided for detailed energy efficiency studies from energy engineers and experts. Small customers are eligible for quick walk-through energy audits, with the cost share reimbursed upon implementation of recommendations. Participants may use NYSERDA-contracted or customer-selected consultants. In early 2009, EEPS funds were added to expand Flex Tech as one of NYSERDA's Fast Track programs.

3.9.2 Program Accomplishments

FlexTech TA continues to monitor the number of customers receiving assistance to assess its progress. Table 3-16 shows this metric and its current status.

Table 3-16. FlexTech TA Program – Customers Receiving Assistance

Activity	Achieved July 1, 2006 through June 30, 2011
Customers receiving assistance (approved proposals)	3,731

3.9.3 MCA Evaluation

During the second quarter of 2011, a Market Characterization and Assessment (MCA) evaluation was completed by Navigant Consulting, Inc on the FlexTech Program. Results were derived from surveys of participating and nonparticipating end-use customers and technical service providers. In addition, secondary data from Program Opportunity Notices, previous evaluations of the FlexTech Program and previous evaluations of similar programs operating in other jurisdictions were also used in this evaluation.

The goals of the FlexTech evaluation effort were to:

1. Develop a comprehensive understanding of current and emerging markets (*e.g.*, market structure and market actors)
2. Provide baseline and background information required by NYSERDA to define and deliver programs to target markets; and
3. Track changes in markets over time with a specific focus on market indicators that are likely to be impacted by program offerings.

Key, high-level market characterization findings from the study include:

- New York has approximately 520,000 commercial and industrial establishments and nearly four billion square feet of commercial and industrial building area. Approximately 40% of the total establishments and building area are located in the downstate region with the remainder of establishments and building area spread throughout the state.
- The market sectors active in New York buildings are diverse. By number of establishments, the largest market sector is retail trade (15%) followed by professional, scientific, and technical services (11%), and health care and social assistance (10%). The view is slightly different when looking at market sectors by building area. Nearly 20% of existing building area is occupied by offices or banks, while 16% of building area is occupied by stores or restaurants. Manufacturing accounts for approximately 15% of the total building area in New York.

- Electricity sales to the commercial sector in New York have increased by 21% between 1995 and 2009 while electricity sales to the industrial sector have decreased by 47% during this same time period. The price of electricity in New York has increased by 35% in the commercial sector and 55% in the industrial sector during these years.
- Approximately three-quarters of all completed FlexTech studies are located in upstate New York with the remainder of completed studies located downstate. In the upstate region, there appears to be more program activity around Albany and Buffalo than around Syracuse and Rochester.
- The market sectors with the highest number of completed studies between May 1, 2006 and December 31, 2009 include industrial/manufacturing, office and bank buildings, local government, education- colleges and universities, health care, agriculture and forestry, and education- elementary and secondary schools. These market sectors comprise nearly 80% of the completed FlexTech studies by number.
- NYSERDA FlexTech consultants tend to be located near major city centers including New York City, Buffalo, Rochester, Syracuse, and Albany. In addition, a few NYSERDA FlexTech consultants are located outside of New York.³ Participation data suggests that consultants participating in the FlexTech Program are reaching outside of their home city or region or using branch offices to market and complete studies across the state.
- An increasing number of customers participating in the FlexTech Program are using their own technical service providers. Sixty-one percent of customers with completed studies since program inception used a NYSERDA FlexTech consultant compared to 39% of customers who used their own consultant. By comparison, 55% of customers with completed studies since May 2006 used a NYSERDA FlexTech consultant compared to 45% of customers who used their own consultant.

Key, high-level market assessment findings from the study include:

- A substantial majority of participating and non-participating end-use customers are making capital improvements despite the recent economic recession. The two most commonly cited major criteria for either group of end-use customers in deciding to move forward with capital improvement projects are concerns about the safety of employees and/or customers and financial considerations. Energy efficiency is the third most commonly cited major decision-making criterion.
- Energy efficiency opportunities are important to participant and non-participant end-use customers and a large majority of each group perceives a significant increase in this level of importance in the last five years. Not surprisingly, participating end-use customers are significantly more likely than non-participants to have made capital investments in energy efficiency products and services during this timeframe; however, three quarters of non-participating end-use customers report that they have made capital investments in energy efficiency products and services in the past five years.
- Customers state that financial concerns, including the up-front cost of energy efficient equipment, lack of capital, and economic uncertainty, are the largest barriers to incorporating energy efficiency into capital improvement projects. Issues related to lack of knowledge, experience, or information

³These out-of-state consultants may also have offices in New York.

regarding energy efficient products and services represent less significant barriers for end-use customers. Technical service providers report similar findings in terms of barriers faced by customer organizations.

- Familiarity with energy efficient products and services is increasing for substantial majorities of participating and non-participating end-use customers. The reasons given for this increased familiarity include increased demand for reduced costs so the customer organizations search out energy efficient products/services, more information regarding energy efficiency circulating in the industry, and increased focus on energy efficiency in the customer organizations. Technical service providers also believe that energy efficiency is important to their customers and that it has become more so over the past five years.
- The common perception among end-use customers, both participating and non-participating, is that there has been an increase in the number of energy efficiency product and service contractors active in the marketplace, driven mostly by increased market opportunity. Fewer end-use customers, but still a majority, see an increase in the capabilities of these providers. Participating and non-participating technical service providers have similar views of the market.
- Nearly 90% of non-participating end-use customers were aware of NYSERDA and nearly 40% were aware of the FlexTech Program. Among non-participating end-use customers who regularly conduct energy feasibility studies, roughly half (49%) were aware of the FlexTech Program.
- Nearly two-thirds of participating technical service providers believe that the FlexTech Program is a major influence on customer interest in energy feasibility studies. A majority of participating technical service providers indicate that, when offered, their customers accept and conduct an energy feasibility study. In contrast, more than half of non-participating technical service providers say that their customers only sometimes conduct energy feasibility studies when offered.
- About half of participating technical service providers have completed half or more of their studies through the FlexTech Program and approximately (30%) have completed less than 25% through the program. A large majority of participating contractors (86%) have completed at least some energy feasibility studies outside FlexTech.

Recommendations developed by Navigant from the MCA study are detailed below. The data and research conclusions upon which these recommendations are based are detailed in the full report by Navigant, which will be available on NYSERDA's website.

- Results from the current study indicate that end-use customers are increasingly receptive to energy efficiency products and service offerings and that opportunities exist to grow market awareness of the FlexTech Program as well as other NYSERDA program offerings. NYSERDA staff should continue efforts to refine existing general awareness and target marketing campaigns to drive additional program participation and generate increased market awareness of program benefits. Marketing efforts should target the key sources for investment ideas within customer organizations – primarily senior management and facilities management staff – as well as the final project decision-makers – primarily the organizations' boards of directors and senior management. An initial focus of target marketing efforts could be those non-participating end-use customers who conduct energy feasibility studies on a regular basis.

- Financial barriers remain strong deterrents to conducting energy feasibility studies and broader investment in energy efficiency. Customers note that the availability of energy efficiency program incentives/rebates and other outside funding sources are critical inputs to the decision-making process for energy-related investments. NYSERDA staff should refine existing marketing collateral to clearly emphasize the availability of program incentives and other financial benefits of program participation (*e.g.*, likely payback terms for energy efficiency investments). In addition, NYSERDA should continue efforts to generate broader market awareness of its program offerings. A variety of methods could be used to enhance existing marketing strategies including reviews of publicly-available datasets that track statewide addition and alteration project activity on a sector-level basis (*e.g.*, the Dodge Construction Starts Database), networking by FlexTech staff as part of ongoing program outreach activities, and market intelligence gathering by other NYSERDA technical resources (*e.g.*, program implementation contractors) that interact with the targeted market sectors on a regular basis.
- FlexTech Program staff should encourage the trend of increasing use of customer-selected technical service providers. This trend generates broader service provider exposure to the goals and strategies promoted by the program. It also implies an increased likelihood of diffusion of knowledge and technical capabilities derived from FlexTech into the broader market (*e.g.*, spillover benefits that may be attributable to program activities). This suggestion assumes that the performance of customer-selected technical service providers is of similar quality to the pre-qualified FlexTech Consultants; an assumption that should be explored through research efforts conducted by NYSERDA's process evaluation contractor and/or impact evaluation contractor.
- The market is gaining awareness of the different energy efficiency program administrators and related program offerings available in New York; however, confusion exists regarding the relationships between the various administrators and programs. In addition, end-use customers and technical service providers are participating in non-NYSERDA energy efficiency programs, a situation that may impact participation in FlexTech and other NYSERDA programs going forward. NYSERDA staff should consider this activity when developing future marketing strategies and program participation forecasts. NYSERDA staff should also continue efforts to develop joint programmatic initiatives with the utilities (*e.g.*, the Energy Efficiency For Health initiative launched with National Grid) in which the FlexTech Program is used to identify efficiency opportunities at customer organizations, which are then translated into a comprehensive menu of NYSERDA and utility program options for customers.
- The FlexTech Program is well positioned to assist market actors with meeting the requirements of the Greener, Greater Buildings Plan recently adopted by New York City. One of the four bills passed requires private buildings over 50,000 square feet to conduct energy audits once every ten years and to undertake retro-commissioning measures, while all city-owned buildings over 50,000 square feet are required to complete energy retrofits with a simple payback of seven years or less as identified in an energy audit. NYSERDA staff should consider conducting market research to identify those buildings that are eligible to participate in NYSERDA's programs and required to complete an energy audit in any given year, and then target market FlexTech services to representatives of those buildings.

3.9.4 Follow-up on Evaluation Recommendations

There are no recent FlexTech evaluation recommendations to report on; the new recommendations described in Section 3.9.2 will be assessed in future quarterly and annual reports, including information on their status and NYSERDA's response to the recommendation.

3.10 Industrial and Process Efficiency

The Industrial and Process Efficiency (IPE) Program, which began in early 2009, is an EEPS-funded Fast Track program designed to increase industrial process efficiency activity. The program is implemented as an additional component to the EFP and provides performance-based incentives for cost-effective process improvements that reduce energy use per unit of production. This industrial and process efficiency component is the implementation path for process improvement projects developed through the FlexTech TA Program, or brought to this program independently. Potential for process improvements will be predominantly in industrial facilities and data centers.

3.10.1 Follow-Up on Evaluation Recommendations

The conclusions and recommendations of the second phase of the IPE Process evaluation were presented last quarter, since there are three phases in the IPE Process evaluation, and recommendations provided at the various phases are considered intermediate until the full evaluation is completed. Thus, follow up and NYSERDA response to the recommendations will not be presented until the conclusion of all phases of this process evaluation.

3.11 FlexTech Benchmarking Pilot

The FlexTech Benchmarking Pilot provides benchmarking and onsite operational assessments. Selected FlexTech Consultants will benchmark participating facilities and develop site-specific reports recommending operational or system modifications that may result in energy savings. Commercial, industrial and institutional facilities 50,000 square feet or greater are eligible. Multifamily facilities are also eligible.

3.12 Agriculture Energy Efficiency Program

The Agriculture Energy Efficiency Program (AEEP) provides comprehensive, flexible energy efficiency services to this underserved market segment. The program supports electric and natural gas efficiency improvements and was designed to be available to all farms and on-farm producers, including but not limited to: orchards, dairies, greenhouses, vegetables, vineyards, grain dryers, maple producers, and poultry/egg. Since 98% of New York State farms are located upstate, the majority of the activity is expected to occur in that region. The program was launched in January 2011 and closed on March 25, 2011 due to successful application response.

4 *Residential and Low-Income Programs*

4.1 Residential and Low-Income Evaluation Activities

During the second quarter of 2011, the following evaluation projects were completed on the Residential and Low-Income programs:

- Reports detailing NYSERDA-specific results from the 2010 National Consortium for Energy Efficiency (CEE) ENERGY STAR[®] survey and the 2010 National Energy Conservation, Efficiency and Demand Response survey
- Market characterization and assessment of the **New York Energy \$martSM** Products component of the Market and Community Support Program
- Program Theory and Logic model for the Multifamily Performance Program Electric Reduction Master-Metered Buildings Program

Evaluation studies and activities expected to be completed in the coming quarters are:

- Impact evaluations for the CFL Expansion (multistate modeling), Home Performance, ENERGY STAR Homes, Multifamily and EmPower programs
- Market characterization and assessment and process evaluation of the Workforce Development Program
- Process evaluation of the **New York Energy \$martSM** Products component of the Market and Community Support Program

NYSERDA will summarize evaluation results from these projects in future evaluation and status reports.

4.2 Summary of Residential Program Budget and Spending Status

Table 4-1 presents detailed budget and funding information for the **New York Energy \$martSM** Residential and Low-Income programs. Table 4-2 shows the same information for EEPS Residential and Low-Income programs.

Table 4-1. Residential & Low-Income Programs - New York Energy SmartSM Financial Status through June 30, 2011 (\$ million)

Program	Budget ¹			Funds Spent			Encumbered Funds ⁴ % of Budget Encumbered	Committed Funds ⁵ % of Budget Committed
	SBC I & SBC II ²	SBC III ³	Total Budget	SBC I & SBC II ²	SBC III ³	Total Funds Spent		
Residential Programs								
Single Family Home Performance	47.4	60.1	107.5	47.4	56.1	103.5 96.3%	104.2 96.9%	104.8 97.5%
Multifamily Building Performance	18.3	26.1	44.5	18.3	24.0	42.3 95.2%	43.8 98.6%	44.5 100.0%
Market and Community Support Residential	96.5	52.3	148.9	96.5	43.7	140.2 94.2%	144.5 97.1%	145.6 97.8%
Communities and Education	3.2	8.8	11.9	3.2	8.2	11.4 95.1%	11.9 99.6%	11.9 100.0%
Subtotal Residential	\$165.4	\$147.3	\$312.8	\$165.4	\$132.0	\$297.4 95.1%	\$304.5 97.3%	\$306.8 98.1%
Low-Income Programs								
Single Family Home Performance	22.3	53.5	75.8	22.3	39.7	62.0 81.8%	64.3 84.9%	67.4 89.0%
Multifamily Building Performance	45.4	114.6	160.0	45.4	93.4	138.8 86.7%	156.2 97.6%	160.0 100.0%
EmPower New York	14.3	51.9	66.2	14.3	47.7	62.0 93.6%	66.1 99.8%	66.2 100.0%
Buying Strategies & Energy Awareness	4.7	11.9	16.6	4.7	8.9	13.6 81.9%	15.0 90.6%	15.5 93.5%
Subtotal Low-Income	\$86.6	\$232.0	\$318.6	\$86.6	\$189.7	\$276.3 86.7%	\$301.6 94.7%	\$309.1 97.0%
TOTAL Residential and Low-Income	\$252.0	\$379.3	\$631.3	\$252.0	\$321.7	\$573.7 90.9%	\$606.1 96.0%	\$616.0 97.6%

¹Reflects carryover in funds and reallocation as approved by the PSC in 2007.

²SBC I: July 1, 1998 through June 30, 2001; SBC II: July 1, 2001 through June 30, 2006.

³SBC III: July 1, 2006 through June 30, 2011.

⁴Encumbered funds associated with signed contracts and purchase orders.

⁵Committed funds associated with encumbered funds and pending contracts.

Totals may not sum exactly due to rounding.

Source: NYSERDA

Table 4-2. Financial Status of the EEPS Residential and Low-Income Programs through June 30, 2011 (\$ million)

	Total Budget ¹	Total Funds Spent	% of Budget Spent	Encumbered Funds % of Budget Encumbered	Committed Funds % of Budget Committed	
Residential Programs						
CFL Expansion	17.2	11.5	67.2%	12.7 73.7%	12.7 73.7%	
Home Performance with ENERGY STAR	21.7	6.4	29.4%	7.7 35.3%	8.9 40.8%	
New York ENERGY STAR Homes	16.0	4.0	24.8%	6.1 38.3%	7.7 47.9%	
MPP Market Rate	Electric	1.1	0.2	18.8%	0.7 57.9%	1.2 106.4%
		Gas	16.0	1.4	8.7%	2.2 13.8%
Geothermal	2.0	0.3	12.8%	0.3 16.0%	0.3 16.0%	
Electric Reduction in Master Metered Buildings	11.6	0.9	7.4%	1.5 13.1%	1.6 13.4%	
Subtotal Residential	\$85.7	\$24.6	28.7%	\$31.2 36.4%	\$35.2 41.1%	
Low-Income Programs						
Assisted Home Performance with ENERGY STAR	6.4	3.6	56.9%	3.9 61.5%	4.3 67.6%	
EmPower	Electric	23.6	14.5	61.3%	14.8 62.9%	15.2 64.7%
		Gas	8.6	1.5	17.3%	1.7 20.4%
MPP Low Income	Electric	3.6	0.6	17.1%	0.9 24.6%	0.9 24.6%
		Gas	11.0	1.7	15.4%	2.9 26.7%
Subtotal Low-Income	\$53.1	\$21.9	41.2%	\$24.3 45.8%	\$29.9 56.3%	
Total Residential and Low-Income	\$138.9	\$46.5	33.5%	\$55.5 40.0%	\$65.1 46.9%	

¹Program budgets exclude administration and evaluation dollars. Totals may not sum exactly due to rounding.
Source: NYSERDA

4.3 Residential and Low-Income Evaluation Findings

Significant progress is being made by the Residential and Low-Income portfolio. This section summarizes key evaluation findings from the latest set of evaluation activities, and from the cumulative body of work conducted by NYSERDA and its evaluation contractors over the past several years.

4.3.1 Energy, Peak Demand and Fuel Savings

Tables 4-3 through 4-8 summarize the estimated electricity savings, peak demand reductions, and fuel savings for each of the Residential and Low-Income programs, both **New York Energy \$martSM** and EEPS. Savings for the Low-Income program elements are broken out in the footnotes to each table.

Table 4-3 and Table 4-4 show progress for the **New York Energy \$martSM** and EEPS-funded programs, respectively, toward their established goals for electricity savings. Overall, three out of six **New York Energy \$martSM** Residential and Low-Income programs (New York ENERGY STAR Homes, Market and Community Support and EmPower) have exceeded their five-year **New York Energy \$martSM** electricity goals. EEPS electric-funded programs are also making good progress overall toward their goals.

Table 4-5 and Table 4-6 show progress for the **New York Energy \$martSM** and EEPS funded programs, respectively, toward attaining peak demand reductions. Peak demand savings goals were not set for the **New York Energy \$martSM** nor EEPS electric-funded programs.

Table 4-7 and Table 4-8 show progress for the **New York Energy \$martSM** and EEPS-funded programs, respectively, toward their established goals for fuel savings. Overall, one out of six **New York Energy \$martSM** programs has exceeded its fuel savings goal while EEPS-funded programs continue to make good progress toward those goals. Fuel savings reported for the **New York Energy \$martSM** programs include savings for fuels such as oil, propane and natural gas whereas fuel savings reported for the natural gas EEPS-funded programs show MMBtu savings for natural gas only.

Table 4-3. New York Energy \$martSM Residential and Low-Income Program Cumulative Annual Electricity Savings through June 30, 2011 and Progress toward Goals

Program	Energy Savings (GWh)				
	Savings Achieved through		July 1, 2006 through June 30, 2011	Five-Year Goal through June 30, 2011a	Progress Toward Goal (% achieved)
	June 30, 2006	June 30, 2011			
Single Family Home Performance Program: Existing Homes ¹	13.5	30.9	17.4	27.4	64%
Single Family Home Performance Program: New Homes	7.3	39.3	32.0	18.7	171%
Multifamily Performance Program: Existing Buildings ²	29.8	121.0	91.1	361.3	25%
Multifamily Performance Program: New Buildings	0	2.2	2.2	24	9%
Market and Community Support Program ³	539.1b	776.2	237.2	220	108%
EmPower New York ⁴	20.1	53.1	33.1	32.4	102%
Statewide Residential & Low-Income Total	609.8	1,022.8	413.0	683.8	60%

a Goals for the **New York Energy \$martSM** Program are specified in NYSEDA's March 2008 and, where applicable, March 2009 operating plans. For some programs, the latest published goal values do not fully reflect adjustments that are necessary to align goals with cross-program funding reallocations approved by DPS since the operating plans were completed. These funding reallocation adjustments and any other necessary updates or corrections to the **New York Energy \$martSM** Program goals were reflected in NYSEDA's February 28, 2011 revised Operating Plan (resubmitted with revisions April 6, 2011) and will be used in future evaluation reports, starting in Quarter 3 2011, as the benchmark for program performance.

b This baseline savings figure does not match the 2nd quarter 2006 published value. The impacts for the **New York Energy \$martSM** Products component of this program are derived annually from market data, and the 2nd quarter savings value was estimated retrospectively to provide a more accurate baseline for measuring progress.

¹Savings for the low-income Assisted Home Performance Program (16.2 GWh) are included in this row.

²Savings for the low-income Assisted Multifamily Program (55.6 GWh) are included in this row, the remainder are savings from the closed Residential Comprehensive Energy and Direct Install programs and the new Multifamily Performance Program.

³Savings for the **New York Energy \$martSM** Products Program are estimated based on market data, survey research, and deemed savings values. An update to this analysis has been incorporated into this report and the Q3 2011 report will add savings for 2007 lighting purchases that have not yet been accounted for.

⁴The **New York Energy \$martSM** goals for EmPower were revised per NYSEDA's Supplemental Revision to the SBC Operating Plan – August 31, 2010.

N/A – Not Applicable

Totals may not sum exactly due to rounding.

Table 4-4. EEPS Residential and Low-Income Program Cumulative Annual Electricity Savings through June 30, 2011 and Progress toward Goals

Program	Energy Savings (GWh)		
	Savings Achieved through June 30, 2011a	Goal ¹	Progress Toward Goal (% achieved)
Multifamily Performance Program: Market Rate			
Electric Funding	0.4	7.8	5%
Ancillary impacts from Gas funding	-0.3	N/A	N/A
Multifamily Performance Program: Low-Income			
Electric Funding	1.5	16.1	9%
Ancillary benefits from Gas funding	0.4	N/A	N/A
CFL Expansion Program ²	687.3	1,083	63%
EmPower New York			
Electric Funding	11.3	29.4	39%
Ancillary benefits from Gas funding	<.1	N/A	N/A
Statewide Residential & Low-Income Total	700.6	1,136.7	62%

a The EEPS programs shown in this table began reporting electricity savings in the following months: Multifamily Performance Program in September 2010; Low Income Multifamily Performance Program in May 2010; CFL Expansion in July 2009; and EmPower in June 2009.

¹The time frames for achieving savings goals vary by program. For the EmPower Program, the savings goal is through December 31, 2011; for the Multifamily Performance Program and the CFL Expansion Program, the savings goals are through December 31, 2012.

²Savings for the CFL Expansion Program incorporate a 1.6 net-to-gross ratio based on a baseline evaluation study. As NYSERDA's current CFL Expansion Program evaluation is completed in the coming months, this net-to-gross estimate will be updated.

N/A – Not Applicable

Totals may not sum exactly due to rounding.

Table 4-5. New York Energy \$martSM Residential and Low-Income Program Cumulative Peak Demand Reductions through June 30, 2011

Program	Demand Savings (MW)	
	Savings Achieved through	
	June 30, 2006	June 30, 2011
Single Family Home Performance Program: Existing Homes ¹	2.0	7.9
Single Family Home Performance Program: New Homes	0.9	17.4
Multifamily Performance Program: Existing Buildings ²	3.9	12.1
Multifamily Performance Program: New Buildings	0.0	0.8
Market and Community Support Program	104.3	157.6a
EmPower New York	2.5	8.4
Statewide Residential & Low-Income Total	113.7	204.3

Note: No peak demand savings goals were set for residential and low-income **New York Energy \$martSM** programs.

a Savings for the **New York Energy \$martSM** Products Program are estimated based on market data, survey research, and deemed savings values. An update to this analysis has been incorporated into this report and the Q3 2011 report will add savings for 2007 lighting purchases that have not yet been accounted for.

¹Includes 3.0 MW from the low-income Assisted Home Performance Program.

²Savings for the low-income Assisted Multifamily Program are included in this row. They represent 6.6 MW of these savings.

N/A – Not Applicable

Totals may not sum exactly due to rounding.

Table 4-6. EEPS Residential and Low-Income Program Cumulative Peak Demand Reductions through June 30, 2011

Program	Demand Savings (MW)
	Savings Achieved through June 30, 2011
Multifamily Performance Program: Market Rate	
Electric funding	0.05
Ancillary impacts from Gas funding	-0.06
Multifamily Performance Program: Low-Income	
Electric funding	0.1
Ancillary benefits from Gas funding	0.01
CFL Expansion ¹	62.2
EmPower New York	1.1
Statewide Residential & Low-Income Total	63.4

Note: No peak demand savings goals were set for residential and low-income EEPS programs.

¹Savings for the CFL Expansion Program incorporate a 1.6 net-to-gross ratio based on a baseline evaluation study. As NYSERDA's current CFL Expansion Program evaluation is completed in the coming months, this net-to-gross estimate will be updated.

N/A – Not Applicable

Totals may not sum exactly due to rounding.

Table 4-7. New York Energy \$martSM Residential and Low-Income Program Cumulative Annual Fuel Savings through June 30, 2011 and Progress toward Goals¹

Program	Fuel Savings (MMBtu)				
	Savings Achieved through		July 1, 2006 through June 30, 2011	Five-Year Goal through June 30, 2011a	Progress Toward Five-Year Goal (% achieved)
	June 30, 2006	June 30, 2011			
Single Family Home Performance Program: Existing Homes ²	454,958b	1,197,918	742,960	1,199,000	62%
Single Family Home Performance Program: New Home	376,103c	990,721	614,618	518,500	119%
Multifamily Performance Program: Existing Buildings ³	43,932	930,507	886,575	6,014,500	15%
Multifamily Performance Program: New Buildings	0.0	22,631	22,631	649,000	3%
Market and Community Support Program ⁴	241,998	444,103d	202,105	N/A	N/A
EmPower New York ⁵	38,151	190,152	152,001	200,401	76%
Statewide Residential & Low-Income Total	1,155,142	3,776,033	2,620,891	8,581,401	31%

¹New York Energy \$martSM MMBtu savings reported in this table include savings for fuels such as oil, propane and natural gas.

²Energy savings for the low-income Assisted Home Performance Program are included in this row. They represent 545,606 MMBtu of these savings.

³Energy savings for the low-income Assisted Multifamily Program are included in this row. They represent 378,781 MMBtu of these savings.

⁴The value shown for savings through June 30, 2006 does not match earlier published values, as an error in the tracking spreadsheet was found and repaired.

⁵The MMBtu savings for EmPower is reduced compared to past quarters, as savings had included some non-SBC sources, which are removed in this quarter. This change also impacted the savings through June 30, 2006, so the value shown here will not match earlier published values.

a Goals for the New York Energy \$martSM Program are specified in NYSERDA's March 2008 and, where applicable, March 2009 operating plans. For some programs, the latest published goal values do not fully reflect adjustments that are necessary to align goals with cross-program funding reallocations approved by DPS since the operating plans were completed. These funding reallocation adjustments and any other necessary updates or corrections to the New York Energy \$martSM Program goals were reflected in NYSERDA's February 28, 2011 revised operating plan (resubmitted with revisions April 6, 2011) and will be used, starting in Quarter 3 2011, as the benchmark for program performance.

b This value does not match an earlier published value due to changes made to the program tracking database in response to evaluation completed by the M&V contractor.

c This value does not match earlier published values as the realization rate for MMBtu was reassessed during this period to a lower level and applied retroactively in order to accurately reflect progress made during the year.

d Savings for the New York Energy \$martSM Products Program are estimated based on market data, survey research, and deemed savings values. An update to this analysis has been incorporated into this report and the Q3 2011 report will add savings for 2007 lighting purchases that have not yet been accounted for.

N/A – Not Applicable

Table 4-8. EEPS Residential and Low-Income Program Cumulative Annual Fuel Savings through June 30, 2011 and Progress toward Goals¹

Program	Fuel Savings (MMBtu)		
	Savings Achieved through June 30, 2011a	Goal ²	Progress Toward Goal (% achieved)
Single Family Home Performance Program: Existing Homes	85,991	401,815	21%
Single Family Assisted Home Performance Program: Existing Homes	37,938	46,450	82%
Single Family Home Performance Program: New Homes	128,345	428,767	30%
Multifamily Performance Program: Market Rate			
Gas funding	27,479	377,285	7%
Ancillary effects from Electric funding	4,611	N/A	N/A
Multifamily Performance Program: Low-Income			
Gas funding	9,975	164,893	6%
Ancillary effects from Electric funding	-3,848	N/A	N/A
EmPower New York			
Gas funding	9,746	84,584	12%
Ancillary effects from Electric funding	-1,970	N/A	N/A
Statewide Residential & Low-Income Total	298,266	1,503,794	20%

¹The MMBtu savings for EEPS-funded programs presented consist of natural gas only, and these figures do not include savings for other fuels such as oil and propane.

²The time frames for achieving savings goals vary by program. For the Single Family Home Performance Program and the EmPower Program, the savings goals are through December 31, 2011; for the Multifamily Performance Program, the savings goals are through December 31, 2012.

a The EEPS programs shown in this table began reporting natural gas savings in the following months: Single Family Home Performance Existing and New Homes in May 2010; Multifamily Performance Program in September 2010; Low Income Multifamily Performance Program in May 2010; and EmPower in April 2010.

N/A – Not Applicable

4.3.2 Summary of Other Key Program Impacts and Results

Across the programs, 28 additional five-year goals were set for other key metrics besides energy savings, such as the number of customers receiving assistance, funds leveraged, allies participating, and outreach activities completed. Overall, the programs are making progress with respect to these other goals. The majority of the goals have already been surpassed (e.g., the number of new independent retailers signed up, ENERGY STAR market share increases, number of market rate households served through Home Performance with ENERGY STAR, number of teachers trained) or have reached expected levels at this point in the program (e.g., number of market rate New York ENERGY STAR Homes built, number of

households served through EmPower). Still, progress on some goals is less than expected (*e.g.*, number of low-income ENERGY STAR homes built, number of existing market rate multifamily units receiving energy efficiency services) at this point. The results of each program's progress toward its stated goals are shown in table format in the subsequent sections.

4.3.3 NYSERDA Oversample to the 2010 ENERGY STAR Survey

In recent years, the Consortium for Energy Efficiency (CEE) has conducted an annual survey of households across the nation. In 2001, 2004, 2006, 2008 and 2010, NYSERDA elected to fund an oversample within the **New York Energy \$martSM** service area. This provided an opportunity to collect time series data for the NYSERDA area and to draw comparisons to the national results.

Throughout this discussion, national results exclude the NYSERDA oversample and any other client specific oversample areas surveyed by CEE. In previous reports, a national area average including NYSERDA responses was also provided, but was omitted in 2010. As in previous years' studies, to consider the publicity's effect on national awareness, the designated metropolitan areas (DMAs) in the national sample frame were classified into high- and low-publicity areas.

In 2010, the national sample included 1,430 households and the NYSERDA oversample included an additional 300 households. As in previous years, all survey data were collected via WebTV. Select findings from this evaluation are described in the following sections.

Recognition of the ENERGY STAR Label

In 2010, 70% of customers within the NYSERDA area reported recognizing the ENERGY STAR label without being prompted by a description or visual image of the label, and 80% reported recognizing the ENERGY STAR label with prompting (*i.e.*, after being shown a visual image of the label). Both of these percentages are lower than 2008 findings (76% and 89%, respectively). Aided recognition among NYSERDA oversample respondents in 2010 was significantly lower than in 2008.

Unaided recognition was the same in the 2010 national average as in 2008 (60%). Aided recognition increased slightly from 74% in 2008 to 76% in 2010, continuing the upward trend from 2001. Table 4-9 shows unaided and aided recognition results for each survey year.

Table 4-9. ENERGY STAR Label Recognition (Prior to the survey, have you ever heard of or seen the ENERGY STAR Label?)

Survey Year	Sample	Unaided Recognition	Aided Recognition
2010	NYSERDA	70%*	80% [^]
	National Excluding NYSERDA	60%	76%
2008	NYSERDA	76%* [^]	89%* [^]
	National Excluding NYSERDA	60% [^]	74% [^]
2006	NYSERDA	64%*	81%* [^]
	National Excluding NYSERDA	51%	67%
2004	NYSERDA	62%*	72%* [^]
	National Excluding NYSERDA	40%	60%
2001	NYSERDA	N/A	57%
	National Excluding NYSERDA	N/A	40%

* NYSERDA and National results for the same year are statistically different at the p<0.1 level

[^] Results for this territory are statistically different from the same territory the previous survey year at the p<0.1 level.

* NYSERDA and National results for the same year are statistically different at the p<0.1 level

[^] Results for this territory are statistically different from the same territory the previous survey year at the p<0.1 level.

N/A = Not applicable

Purchase of ENERGY STAR

Of nationwide households that recognized the ENERGY STAR label and purchased a product, 77% purchased at least one ENERGY STAR-labeled product in the past 12 months. Additionally, 82% of the NYSERDA respondents who recognized the label purchased at least one labeled product in the past 12 months. This recognition has increased since 2008 for both samples: the nationwide statistics increased from 72% in 2008 to 77% in 2010; and the NYSERDA statistics increased from 74% to 82%.

Loyalty to ENERGY STAR

Respondents were asked to rate how likely they would be to recommend ENERGY STAR-labeled products to a friend on a scale of 0-10, where 0 was not at all likely and 10 was extremely likely. Almost three-quarters of NYSERDA respondents (72%) and over two-thirds of national respondents (excluding NY) (67%) reported they would be “very likely” to recommend ENERGY STAR products to a friend. In

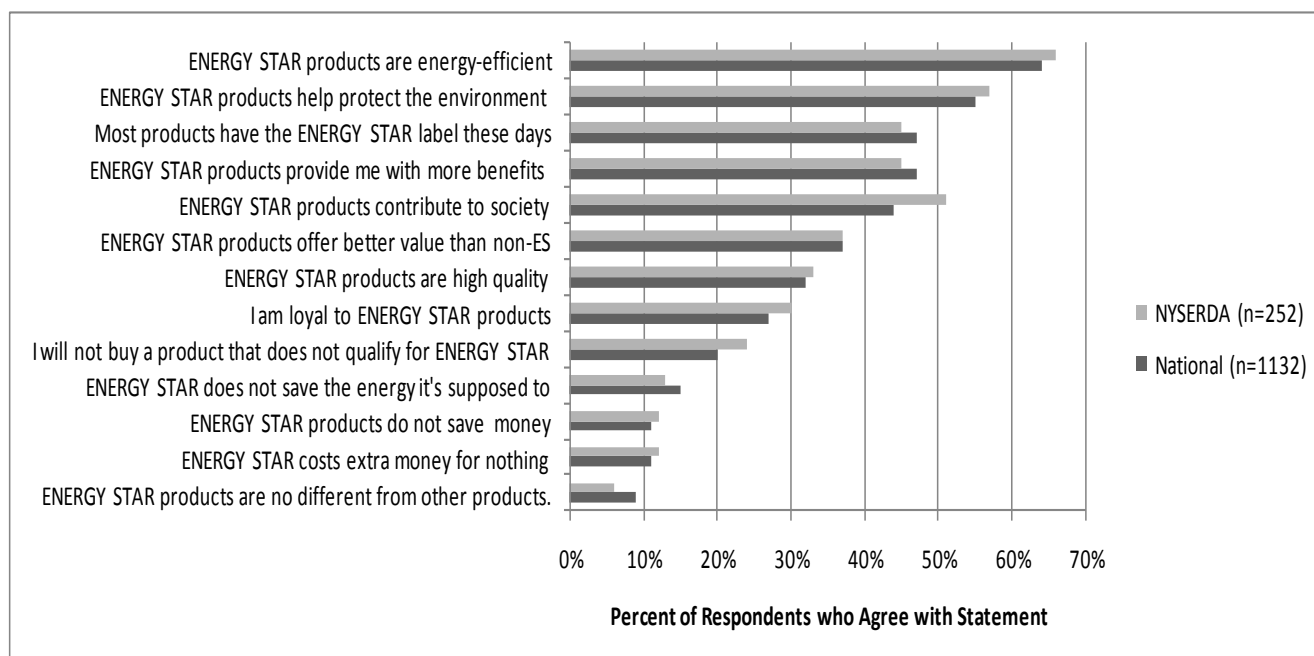
2008, 84% of national respondents reported they were at least “somewhat likely” to recommend ENERGY STAR products to a friend. In 2010, this statistic increased to 92%.

Perception Regarding ENERGY STAR Products

Respondents generally felt ENERGY STAR products helped protect the environment, provide more benefits, and save more energy than products without the label. As seen in Figure 4-1, few national or NYSERDA respondents (11% and 12%, respectively) agreed buying ENERGY STAR products resulted in them feeling like they had spent extra money for nothing, while 32% of national respondents and 33% of NYSERDA respondents believed ENERGY STAR products were of higher quality than products without the label. Additionally, 37% of national respondents and 37% of NYSERDA respondents agreed ENERGY STAR products offered better values than products without the ENERGY STAR label. Further, 47% of national respondents and 45% of NYSERDA respondents agreed ENERGY STAR products provided them with more benefits than products without the ENERGY STAR label.

For other questions concerning ENERGY STAR products, however, NYSERDA respondents differed from the national sample. For example, 51% of NYSERDA respondents and 44% of national respondents believed buying ENERGY STAR products made them feel like they were contributing to society.

Figure 4-1. Percent of Respondents Who Agree with ENERGY STAR Issues



Additional Questions for the NYSEERDA Oversample

Since 2004, a series of questions have been asked only for the NYSEERDA oversample. Results for these questions are summarized below.

- Over two-thirds (70%) of NYSEERDA respondents said, prior to the ENERGY STAR purchase they made in the last 12 months, they had previously purchased a product with the ENERGY STAR label.
- Over one-third (41%) of respondents reported they had heard promotions related to the ENERGY STAR or **New York Energy SmartSM** programs; 43% reported they had not heard any promotions; and 16% did not know. In 2010, less than half of respondents who had made recent purchases placed a high level of importance on promotions they had heard related to the ENERGY STAR or **New York Energy SmartSM** programs when selecting specific products: on a 1-to-5 scale, with 5 as “very important,” 45% gave promotions a “4” or a “5,” compared to 33% in 2006.
- Of households in the NYSEERDA respondent group, 96% reported energy efficiency being at least somewhat important (3, 4, or 5 on a 5-point scale) in the selection of appliances, lighting, and other products for the home, compared to other criteria (such as price and features). This percentage decreased slightly from 98% reporting these results in 2008. Of households in the NYSEERDA respondent group, 72% said they gave energy efficiency more consideration in selecting appliances, lighting, and other home products than they did two years ago. Twenty-six percent of remaining respondents said they gave energy efficiency the same consideration in selecting these products as they did two years ago, and 2% of respondents said they gave energy efficiency less consideration.

4.3.4 New York Oversample to 2010 Energy Conservation, Efficiency and Demand Response Study

During 2010, Abt SRBI, Inc., and Research Into Action, Inc. conducted the multi-client study Energy Conservation, Efficiency, and Demand Response to provide insight into the attitudes and behaviors of residential consumers with respect to energy conservation and efficiency.

For the 2010 survey, 800 interviews were conducted in May 2010 with a nationally-representative sample of randomly-selected households. For NYSERDA, a random-digit dial sample of 450 residential consumers in New York State was selected, with 150 interviews completed in each of three geographic areas: New York City, Long Island, and upstate New York. The interviews were conducted June 28 to July 22, 2010, and were weighted to reflect the population proportions in the three geographic areas of New York State.

Major findings from the NYSERDA oversample include the following:

Attitudes toward Saving Energy. There were two statistically-significant differences between NYSERDA and national respondents in response to a series of 20 statements about energy conservation and efficiency. Fifty-three percent of NYSERDA over-sample respondents strongly agreed that “It is important to save energy in my home” (39% of U. S. respondents) and 38% of NYSERDA over-sample respondents strongly agreed that “I look for products that are good for the environment” (21% nationally).

There were relatively few significant geographic differences among NYSERDA respondents in their agreement with these statements. Forty-one percent of New York City respondents strongly agreed that people should try to use less energy to reduce global warming, compared with 18% for Long Island residents. However, 20% of Long Island residents strongly agreed that global warming is a result of high energy use, compared with 5% of Upstate respondents.

Trusted Sources of Information about Saving Energy and Protecting the Environment. Twenty percent of NYSERDA over-sample respondents view the EPA as a “very reliable” source of information about saving energy, while 18% say that DOE and consumer publications are “very reliable” information sources. Thirteen percent rate NYSERDA as a “very reliable” information source, while 12% rate the Department of Public Service (DPS) and their electric utility as “very reliable” information sources. Nineteen percent of Long Island respondents and 18% of New York City respondents consider

NYSERDA as a “very reliable” source of information about saving energy, a statistically-significant difference from 6% of upstate residents.

Fourteen percent of NYSERDA over-sample respondents consider the EPA as a reliable source of information about protecting the environment, while 13% consider DOE and consumer publications as “very reliable” information sources about protecting the environment.

Motivations for Saving Energy. Thirty-two percent of NYSERDA over-sample respondents said that saving money is the most important reason for making changes to reduce household energy use, a statistically-significant difference from 53% of respondents in the national survey. Twenty-four percent of NYSERDA over-sample respondents said that protecting the environment is their most important reason for saving energy, compared with 19% in the national survey.

With respect to the second most important reason for saving energy in the home, the top mentions by NYSERDA over-sample respondents were to protect the environment (27%) and to save money (21%), both insignificant differences from the national survey. Still, 16% of NYSERDA over-sample respondents said that reducing the nation’s dependence on foreign oil is their second most important reason for making changes to save energy, a significant difference from 25% in the national survey.

Energy-Saving Behavior. NYSERDA over-sample respondents have undertaken a variety of efforts to save energy in their homes, with several of the differences between NYSERDA and national respondents, with respect to specific actions they have taken, being statistically-significant.

The most-commonly undertaken low- or no-cost actions to save energy reported by NYSERDA over-sample respondents were turning off lights (97%) and using full loads in the dishwasher and clothes washer (83%). Seventy-six percent use a power strip to manage electronics. Upstate and Long Island respondents are more likely than those in New York City to use full loads for dishes and laundry and to use a power strip to manage their electronics.

Seventy-four percent of NYSERDA over-sample respondents (and 74% of U.S. respondents) have replaced incandescent or halogen bulbs with fluorescent bulbs, and 66% (compared to 70% of U.S. respondents) replaced incandescent or halogen fixtures with fluorescent fixtures in their homes. Long Island respondents are more likely than upstate and New York City respondents to have installed lighting

dimmers and timers, while both Long Island and upstate residents are more likely than New York City respondents to have replaced incandescent or halogen fixtures with fluorescent ones.

Home Energy Audits. Eighteen percent of NYSERDA over-sample respondents have had a home energy audit or assessment, compared with 16% nationally. Eighty-eight percent of the audits were conducted onsite, 81% of respondents implemented recommendations from the audit of their homes, and 62% of respondents were satisfied with the audit. Twenty-six percent of Long Island respondents and 22 of upstate respondents have had an audit, compared with 11% in New York City.

Interest in New Products and Services. Among several energy-related products and services, interest was highest in rebates for the purchase of new energy-efficient equipment, such as furnaces, water heaters, or air-conditioners (26% of respondents are “very interested”). Sixteen percent are very interested in a program that would pay for the removal of older, extra refrigerators or freezers. Interest in this latter service ranges from 22% among New York City residents to 2% among Long Island consumers. Thirteen percent of NYSERDA over-sample respondents are very interested in a residential heat pump water heater program, an inspection of newly installed HVAC equipment, a monthly credit for air-conditioning cycling, and an online tool to compare their energy use with that of similar homes. Upstate respondents are significantly more interested in an HVAC inspection program than respondents on Long Island (18% compared with 2%).

Financing for Energy-efficiency Purchases. On average, NYSERDA over-sample respondents said they would pay a maximum interest rate of 6.1% to finance energy-efficiency improvements. New York City respondents say they would pay an average of 7.3%, a statistically-significant difference from 3.1% for Long Island residents.

When asked about the attractiveness of various financing options, 73% of respondents said that they do not finance energy-efficiency improvements, although 10% would prefer a home equity loan, 7% on-bill financing, and 5% a personal loan. Twenty percent agreed that financing is their only option for buying needed items.

Customer Satisfaction. Eleven percent of NYSERDA over-sample respondents are “very satisfied” with their electric utility, and 71% are satisfied, for a total of 82%. Sixteen percent were extremely dissatisfied. Seventeen percent of upstate respondents are “very satisfied” with their electric utility, compared with 7% in New York City and on Long Island.

System Benefits Charge. Twenty-six percent of NYSERDA over-sample respondents are aware of the System Benefits Charge (asked only of New York City and upstate respondents). Overall, 22% of NYSERDA over-sample respondents are “very supportive” and 45% are “somewhat supportive” of a charge on their energy bill to fund clean and efficient energy programs in the state.

Climate Change. A majority (51%) of NYSERDA over-sample respondents are completely or mostly convinced that climate change is occurring, while 25% are somewhat convinced. This compares with 49% and 21%, respectively, in the national survey. Long Island residents were significantly less likely than those in New York City and upstate to cite human lifestyles and activities as a cause of global warming (14% compared with 24% and 23%, respectively). Upstate respondents were less likely than either New York City or Long Island respondents to mention people using too much energy as a reason (7% compared with 17% and 19%).

Seriousness of the Energy Situation. Sixty-three percent of NYSERDA over-sample respondents agree that the current energy situation is very serious, a statistically-significant difference from 53% in the national survey. Thirty-five percent of Long Island respondents believe that the energy situation is “fairly serious”, a significant difference from 24% of New York City respondents, who are more likely to characterize the energy situation as “very serious”.

4.4 Home Performance Program

4.4.1 Program Description

This program, which addresses one- to four-unit homes and multifamily buildings three-stories or less, includes the Home Performance with ENERGY STAR Initiative (HPwES) for existing homes, and the New York ENERGY STAR Homes Initiative (NYESH) for newly constructed homes. On the supply side, these initiatives support market development through recruitment, training and incentives for contractors and builders, in order to encourage them to offer energy-efficient options. On the demand side, these initiatives market the benefits of energy efficiency, in addition to health and safety, to residential consumers and reduce the barriers of participation to increase demand for efficient products and services. Both HPwES and NYESH have low-income components providing additional incentives for households earning between 60 and 80% of New York State or area median income.

4.4.2 Program Accomplishments

Table 4-10 shows the New York Energy \$martSM Program's five-year goals and performance since July 1, 2006. The program is making good or excellent progress on most goals, but is falling somewhat behind expectations in terms of goals specific to the low-income residential new construction segment.

Table 4-10. New York Energy \$martSM Home Performance Program – Goals and Achievements

Activity	Program Goals (July 1, 2006 through June 30, 2011)	Achieved July 1, 2006 through June 30, 2011	% of Goal Achieved
New York ENERGY STAR Homes Initiative			
New ENERGY STAR Homes built (market rate only)	11,184	10,852a	98%
New low-income ENERGY STAR Homes built	4,075	641	16%
Home Performance with ENERGY STAR Initiative			
Existing homes served (receiving treatment) (market rate only)	16,582	19,367	>100%
Existing low-income homes served (receiving treatment)	10,851	9,082	84%

a During the first quarter there was a reclassification of projects from Market Rate to Assisted resulting in a reduction in achievements for the market rate program between year-end 2010 and first quarter 2011.

4.4.3 Follow-Up on Evaluation Recommendations

Home Performance with ENERGY STAR

Table 4-11 presents a summary of Home Performance with ENERGY STAR recommendations resulting from program evaluations. This table also provides the status of each recommendation (*i.e.*, if a recommendation already has been adopted, if it will be adopted in the future, or if it will not be adopted) as well as a response from program staff to each recommendation. Per DPS quarterly and annual reporting guidelines, these program recommendations will be revisited with program staff and updated, as applicable, on a quarterly basis.

Table 4-11. Home Performance with ENERGY STAR Evaluation Recommendations and Status

Source of Recommendation (Contractor, Report Title, Date)	Recommendation	Status (Adopted, Plan to Adopt, or Not Adopting)	Program Implementer Response to Recommendation and Adoption Decision Rationale
Nexant, HPwES M&V, June 2007	The program database should maintain the utility account information for all homes in the program. Information for both electric and fossil fuel accounts are unique identifiers for a home. Additionally, for multi-family units, all utility account information should be included so that homes with multiple meters can be easily identified.	Plan to Adopt	Staff acknowledges the need for meter information on the multifamily side and is looking into implementing this recommendation. Note the volume of 2-4 family homes in Home Performance is minimal.
Summit Blue Consulting, HPwES MCA, February 2009	Recognize that homeowners are installing energy efficiency measures outside of the program. Reasons for homeowners' measure installation actions taken outside of the program were not directly assessed within this study, but could provide valuable insights for future program design and effectiveness improvement purposes. As part of such additional assessment, how these installation actions may have varied if the customer had not received a CHA would also be important to capture.	Plan to Adopt	NYSERDA will attempt to investigate this issue in future program evaluations.

New York ENERGY STAR Homes

Table 4-12 presents a summary of Home Performance with ENERGY STAR recommendations resulting from program evaluations. This table also provides the status of each recommendation (*i.e.*, if a recommendation already has been adopted, if it will be adopted in the future, or if it will not be adopted) as well as a response from program staff to each recommendation. Per DPS quarterly and annual reporting guidelines, these program recommendations will be revisited with program staff and updated, as applicable, on a quarterly basis.

Table 4-12. New York ENERGY STAR Homes Evaluation Recommendations and Status

Source of Recommendation (Contractor, Report Title, Date)	Recommendation	Status (Adopted, Plan to Adopt, or Not Adopting)	Program Implementer Response to Recommendation and Adoption Decision Rationale
Nexant, NYESH M&V, June 2007	Data from REM/Rate files should be included in CSG’s database for all homes, including detailed equipment and appliance information and square footage of each home. CSG indicated that this recommendation will be incorporated into a future version of the program database. In addition, NYSERDA should periodically conduct quality control checks to verify that the information in the database is correct.	Plan to Adopt	NYESH Program staff have been assessing ways to facilitate the export of data from the REM/Rate software in a meaningful way into the implementation database. Some success has been made in the LIPA ENERGY STAR Homes Program to accomplish this, and NYSERDA staff has been using its experience to accomplish the task.

4.5 Multifamily Performance Program

4.5.1 Program Description

The Multifamily Performance Program provides a single point of entry for multifamily building owners and developers interested in improving the energy efficiency of new and existing buildings. The ENERGY STAR Multifamily Building Initiative – the track for new buildings (and complete gut-rehabilitation projects) – concentrates on providing technical assistance to mid-stream market participants and incorporates renewable technologies, advanced metering technologies, real-time pricing strategies, and combined heat and power systems, especially for electrically-heated buildings with base domestic hot water loads. The Multifamily Building Performance Initiative – the track for existing buildings – develops market-based business opportunities for building auditors, financial packagers, designers, architects, and construction inspectors in order to enhance the energy services infrastructure. Both the new construction and existing buildings tracks provide incentives to the building owner and include a low-income component, providing increased incentives. The program results in reduced energy bills and health and safety benefits for occupants.

4.5.2 Program Accomplishments

As shown in Table 4-13, several long-term non-energy goals have been set for the **New York Energy \$martSM** Multifamily Performance Program. Achievements include ongoing activities completed during this time period for the Assisted Multifamily Program (AMP). Progress has been slow due to time initially devoted to program design, as well as lengthy timelines for individual projects.

Table 4-13. New York Energy \$martSM Multifamily Performance Program – Goals and Achievements

Activity	Program Goals (July 1, 2006 through June 30, 2011)	Achieved July 1, 2006 through June 30, 2011	% of Goal Achieved
Number of existing market rate multifamily units receiving energy efficiency services (completed projects)	53,900	10,261	19%
Number of new market-rate multifamily units receiving energy efficiency services (completed projects)	7,500	1,258	17%
Tenant energy savings per year – existing and new market rate (at \$250/unit)	\$15,350,000	\$2,879,750	19%
Number of existing low-income multifamily units receiving energy efficiency services (completed projects)	246,000	63,615	26%
Number of new low-income multifamily units receiving energy efficiency services (completed projects)	12,700	5,020	40%
Low-income tenant energy savings per year – existing and new (at \$195/unit)	\$50,446,500	\$13,383,825	27%

4.6 Market and Community Support Program

4.6.1 Program Description

The Market and Community Support Program provides support services to the building performance and low-income programs by increasing the availability of energy-efficient products and by increasing consumer demand. There are two major components to the Market and Community Support Program: 1) the **New York Energy \$martSM** Products Initiative, which seeks to increase the availability and sales of residential energy-efficient appliances, lighting and home electronics products; and 2) Residential Program Marketing Support, which, in partnership with NYSERDA’s Marketing and Economic Development Group, implements marketing initiatives for all the residential programs, as well as workforce development and training, Energy Smart Students, marketing campaigns in coordination with DPS campaigns, and mid-stream partners.

4.6.2 Program Accomplishments

Table 4-14 shows the Program's five-year goals and performance since July 1, 2006. The program has made excellent progress, exceeding all four of its goals.

Table 4-14. New York Energy \$martSM Market and Community Support Program – Goals and Achievements

Activity	Program Goals (July 1, 2006 through June 30, 2011)	Achieved July 1, 2006 through June 30, 2011	% of Goal Achieved
New manufacturing partners signed up	20	59	>100%
New retail partners (independent) signed up	100	278	>100%
New retail partners (big box, mass merchandisers) signed up	6	25	>100%
ENERGY STAR market share increase on targeted products (on average, across products)	25%	49%	>100%

4.6.3 Market Characterization and Assessment Evaluation

During the second quarter of 2011, a Market Characterization and Assessment (MCA) evaluation was completed by Navigant Consulting, Inc on the **New York Energy \$martSM Products** component of the Market and Community Support Program. Results were derived from surveys of participating retailers and manufacturers, retailers in other areas not promoting ENERGY STAR or other high-efficiency products, and end-use customers. Secondary data from the U.S. Census Bureau, the Association of Home Appliance Manufacturers, D&R International, and other sources were also used in this evaluation.

The goals of the **New York Energy \$martSM Products** (NYE\$P) Program MCA evaluation effort were to:

1. Establish defensible estimates of product sales and corresponding energy savings that can be attributed to the NYE\$P Program.
2. Develop a comprehensive understanding of product markets, including the market for consumer electronics.
3. Track changes in markets over time with a specific focus on market indicators that are likely to be impacted by the NYE\$P Program (*e.g.*, increased ENERGY STAR sales and market share).

The market characterization findings included information on the market eligible to participate in the NYESP Program as well as Program accomplishments to date. The market assessment findings included information regarding key market indicators, such as customer awareness and knowledge, measure availability, market penetration, consumer demand, and incremental cost. This evaluation also assessed the net energy savings due to the NYESP Program after accounting for freeridership and spillover or market effects.

Key, high-level market characterization findings from the study include:

- The results of a comprehensive distribution channel analysis highlight the increasing importance – and dominance – of five retailers. More than half of the combined telephone survey respondent purchases for every product category came from the top five retailers; the dominance of these retailers was most pronounced in the clothes washers category, for which 69% of purchases came from the top five retailers.
- ENERGY STAR market shares for all of the appliances show a general upward trend from 2001 with a slight dip in 2007 followed by a rebound through 2009. For 2009, the highest NYSERDA area market share was obtained by dishwashers (75%), followed by clothes washers (56%), room air conditioners (49%), and refrigerators (47%).
- Despite concern that the 2010 ARRA Appliance Rebate Program would cause customers to delay purchases from 2009 to 2010 in order to qualify for a rebate, the net change to sales in fourth quarter 2009 was 0%, or no impact overall, according to retail respondents.

Key, high-level market assessment findings from the study include:

- Promotional activities appear to be effective as 63% of survey respondents reported that they had seen or heard an advertisement or information about ENERGY STAR in the last year.
- As reported through surveys, appliance sales floors in both NYSERDA partner retailers and in non-Program comparison areas are made up of over 50% ENERGY STAR models (as high as 79% for dishwashers) and have increased over time; however, ENERGY STAR stocking of lighting fixtures is lower.
- Manufacturers report that NYSERDA-sponsored buy-downs have increased sales by as much as 20 to 30%. Partner retailers indicated NYSERDA-sponsored cooperative advertising results in average sales lift ranging from 19% for dishwashers to 45% for lighting fixtures.
- Market share analysis indicates that the ENERGY STAR market share of most appliances has increased since 2007 and significantly increased since 2001. Retailer surveys confirm the trend, indicating that consumer demand for ENERGY STAR products is increasing. Market shares in NYSERDA territory continue to be higher than shares in non-Program areas. Figures 4-2 through 4-6 detail the changes in market share for the major products supported by the program.
- Savings from product sales and installations were estimated and combined with those from the previous MCA analysis to yield combined estimates of net savings since Program inception.

Through year end 2009, the **New York Energy \$martSM** Products Program has achieved 734,050 MWh in electricity savings, 143.4 MW in peak demand reduction and 427,794 MMBtu savings.

Figure 4-2. Market Penetration of ENERGY STAR Refrigerators by Year and Partnership

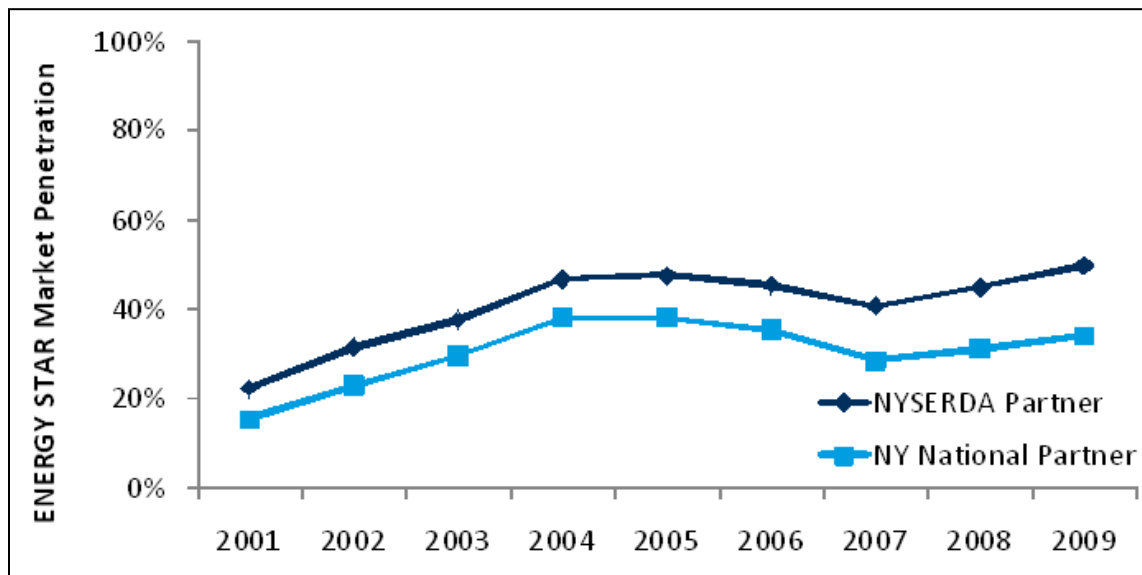


Figure 4-3. Market Penetration of ENERGY STAR Clothes Washers by Year and Partnership

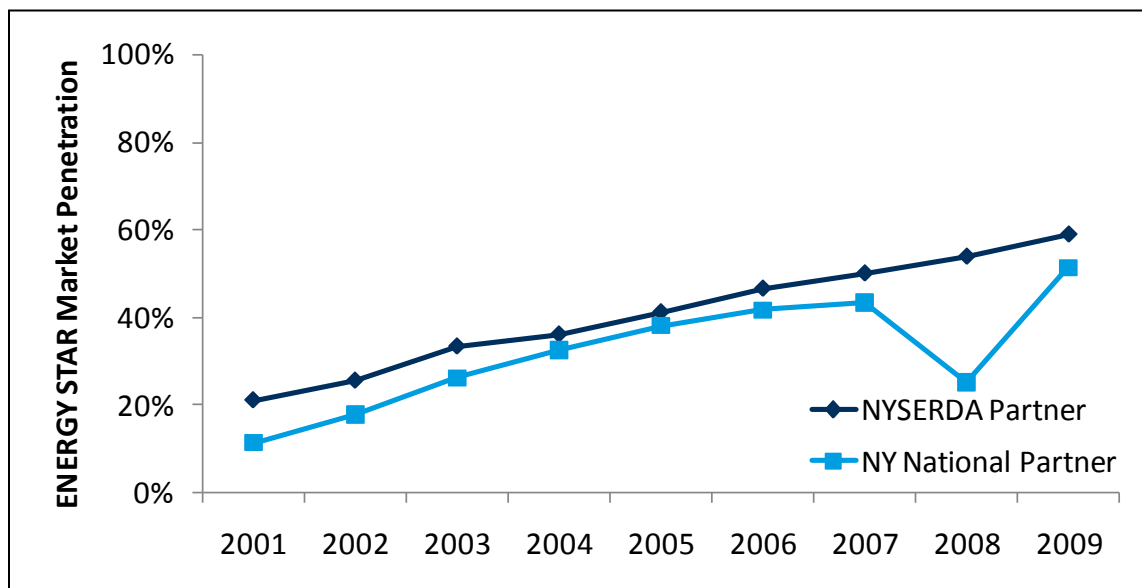


Figure 4-4. Market Penetration of ENERGY STAR Dishwashers by Year and Partnership

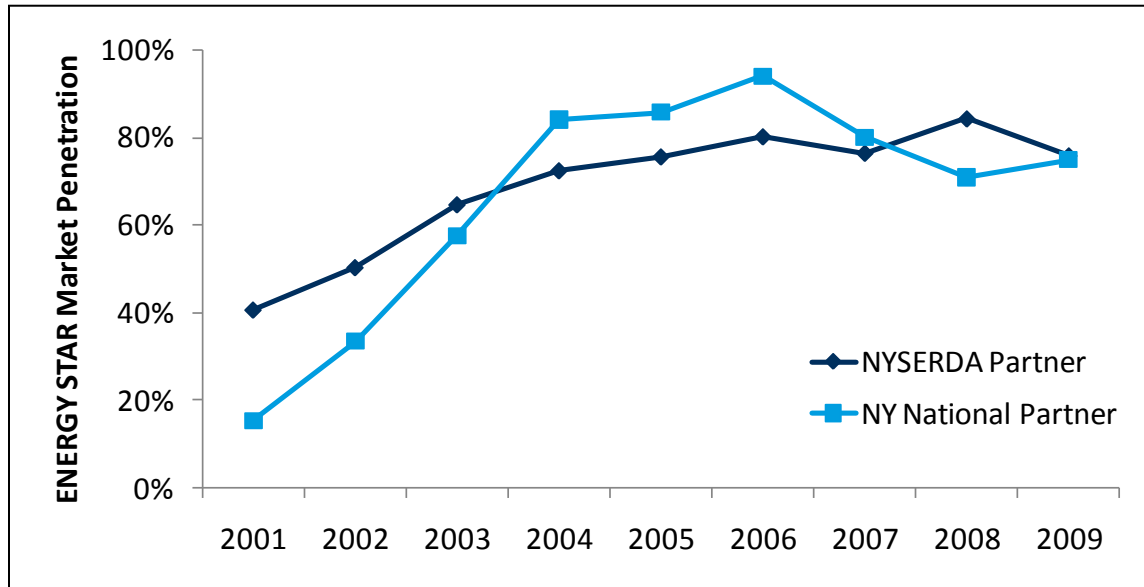


Figure 4-5. Market Penetration of ENERGY STAR Room ACs by Year and Partnership

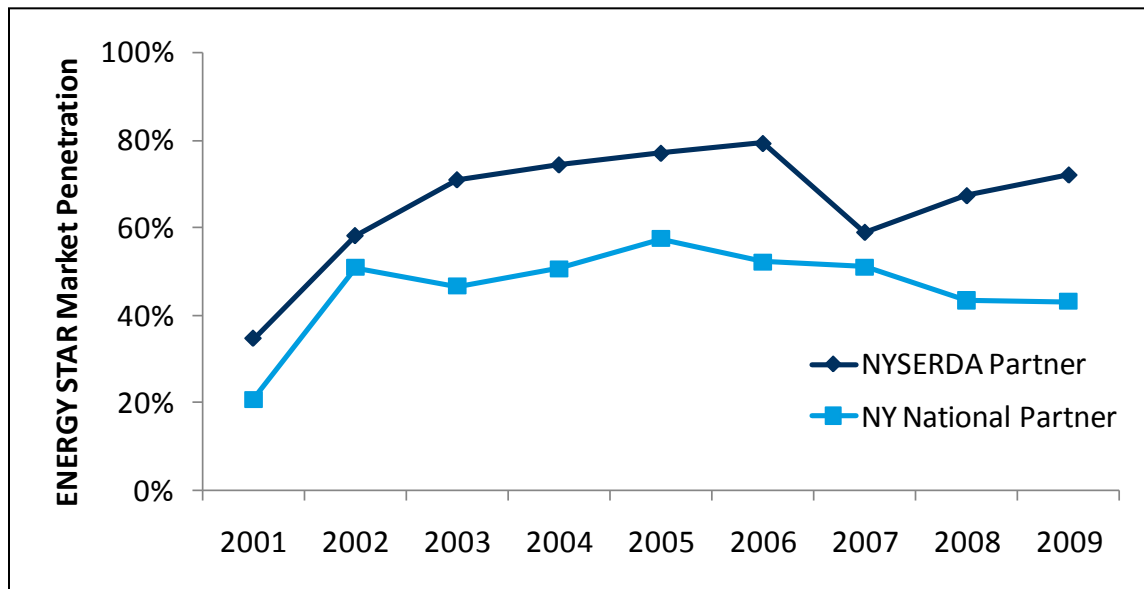
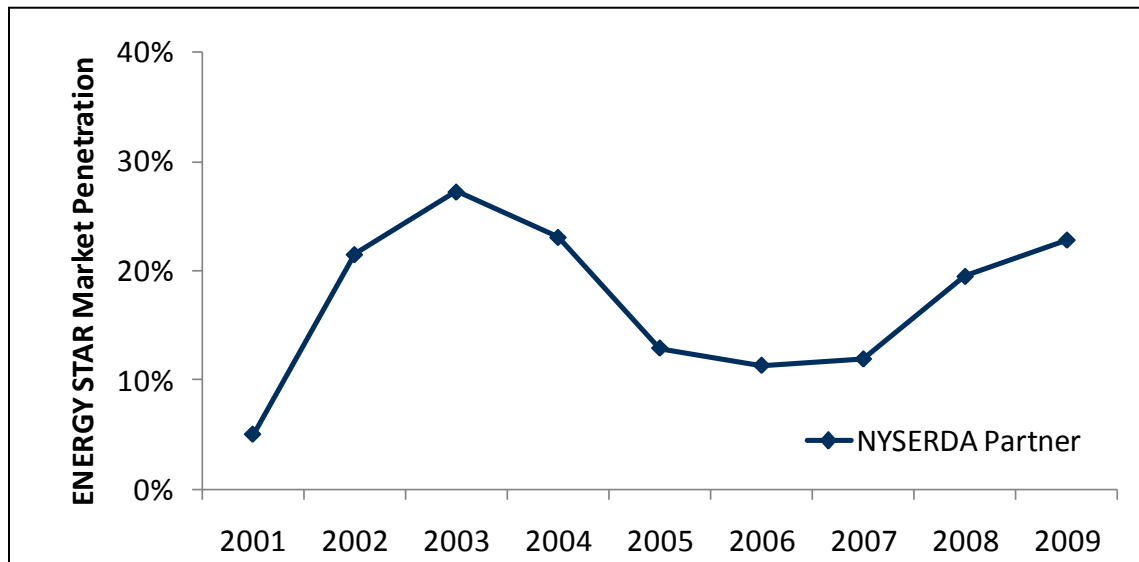


Figure 4-6. Market Penetration of ENERGY STAR Light Fixtures by Year

Recommendations developed by Navigant from this MCA study are detailed below. The data and research conclusions upon which these recommendations are based are detailed in the full report by Navigant, which will be available on NYSERDA's website.

- Survey results indicated that nearly all purchases were conducted in-person at the retail store. Although 98% of retailers reportedly train salespeople about energy efficiency, the majority of consumers do not recollect active promotion of ENERGY STAR products by salespeople. The MCA team recommends NYSERDA emphasize to retail partners the importance of salespeople recommending ENERGY STAR when discussing appliance options with consumers.
- Only about 9% of fixtures sold in the NYSERDA territory are sold at NYESP Program partner stores, while national partners in the NYSERDA territory make up 73%. The MCA team recommends NYSERDA promote the benefits of the Program to a wider array and volume of lighting sellers in New York.
- While prices could take a while to come down as demand continues to increase, the MCA team recommends that the Program target some of its marketing efforts on conveying the message that ENERGY STAR rated products save money in the long run.
- Another issue that the MCA team recommends addressing is the small but increasing minority of customers who definitely would not purchase ENERGY STAR again and definitely would not recommend ENERGY STAR. A follow up study to understand the concerns of this group could lead to more effective target marketing that could dispel some of the perceptions that act as barriers to the adoption of ENERGY STAR products.
- Survey data show that TV commercials are the most effective means of advertising to create awareness of ENERGY STAR, which could be problematic for NYSERDA partners, which tend to consist of small, non-chain stores with limited budgets. The MCA team recommends

NYSERDA consider how it might provide television advertising on behalf of these smaller retailers.

Overall, the NYE\$P Program has been highly effective in raising awareness and the adoption of ENERGY STAR products in New York. A majority of consumers are aware of the ENERGY STAR label and participating stores believe that the Program has been a contributor to this awareness. The MCA team believes that the potential for growth in the ENERGY STAR market is real and that the Program can influence this growth in New York.

4.7 CFL Expansion Program

The CFL Expansion Program is an Energy Efficiency Portfolio Standard (EEPS)-funded program designed to increase the sales of CFLs in New York State. The program, a component of the Market and Community Support Program, is designed to increase marketing and cooperative advertising promotions with retail stores and lighting manufacturers; continue to increase the network of retail partners and manufacturers; increase consumer accessibility to a wider variety of CFLs by providing incentives to retailers to increase the number of CFLs sold and increase permanent shelf space for these products; increase in-store promotions and point-of-purchase information to educate consumers; increase participation in the CFL Collection Center Program; and promote the manufacture, sale, and usage of high power factor CFLs.

4.7.1 Follow-Up on Evaluation Recommendations

In March 2010, Navigant completed a random-digit-dial study and multistate modeling analysis on the CFL Expansion Program. All of the recommendations from those studies have been addressed by NYSERDA in its prior reporting. The full studies can be found on NYSERDA's website at the following links:

http://www.nysERDA.org/Energy_Information/ContractorReports/Navigant/2010/NYSERDA_CFL_RDD_and_Onsite%20Study_MCA_2009_FINAL.pdf

http://www.nysERDA.org/Energy_Information/ContractorReports/Navigant/2010/NYSERDA_CFL_Modeling_Report_MCA_2009_FINAL.pdf

In addition, in April 2010, Research Into Action completed a process evaluation on the CFL Expansion Program. All of the recommendations from that study have been addressed by NYSERDA in its prior reporting. The full study can be found on NYSERDA's website at the following link:

http://www.nyserda.org/Energy_Information/ContractorReports/Research%20Into%20Action/2010/nyserda_cfl_process_report_final.pdf

4.8 Communities and Education Program

4.8.1 Program Description

The Communities and Education Program offers market infrastructure development for both short-term program support and long-term market development for residential energy efficiency, with the aim of helping to develop an energy-conscious society. The two major components are the Energy Smart Students (ESS) Initiative and **New York Energy \$mart** Communities (NYE\$C). ESS provides energy efficiency curricula for teachers of students in grades K-12. ESS is part of NYSERDA's effort to offer comprehensive services to K-12 schools, including educational curriculum support, facilities improvements, and transportation efficiency improvements. ESS offers teacher workshops to introduce hands-on, project-based lessons aligned with the New York State teaching standards. NYE\$C facilitates bringing organizations and agencies together to develop and support local projects that serve as demonstrations of energy efficiency and renewable technologies, and show how these projects create economic, social, and environmental benefits. NYE\$C also provides face-to-face education to the community on various energy topics and **New York Energy SmartSM** programs. Finally, NYE\$C has primary responsibility for recruiting mid-stream partners for **New York Energy SmartSM** residential programs.

4.8.2 Program Accomplishments

As shown in Table 4-15, seven long-term non-energy goals have been set for the Communities and Education Program. The Program has exceeded all its goals.

Table 4-15. New York Energy \$martSM Communities and Education Program – Goals and Achievements

Activity	Program Goals (July 1, 2006 through June 30, 2011)	Achieved July 1, 2006 through June 30, 2011	% of Goal Achieved
Teachers trained	5,000	8,280	>100%
Total students reached	150,000	1,010,515	>100%
Portion of total estimated to be low-income students	100,000	404,206	>100%
Community events held statewide	1,000	2,390	>100%
Recruiting seminars held statewide	500	689	>100%
Home performance contractors, technicians, builders and raters recruited for the Home Performance Program ¹	800	1,591	>100%
Building analysts, designers, energy consultants, equipment installers, etc. recruited for Multifamily Building Performance Program ¹	100	515	>100%

¹ Refers to number of individuals attending recruiting seminars or meetings

4.9 EmPower New YorkSM

4.9.1 Program Description

The EmPower New YorkSM program provides energy efficiency services to utility customers earning at or below 60% of the New York State median income and households enrolled in utility low-income payment assistance programs, targeting both owners and tenants of one- to four-family homes and multifamily buildings with fewer than 100 units. The program coordinates with the delivery of federal weatherization services through New York State Division of Housing and Community Renewal (DHCR). In early 2009, as a result of the Commission’s EEPS proceeding, NYSERDA expanded the EmPower Program to provide more widespread energy efficiency services to low-income customers.

4.9.2 Program Accomplishments

The EmPower Program continues to monitor a key non-energy metric to assess its growth as a proxy for program expansion. Table 4-16 shows these metrics and progress over time.

Table 4-16. EmPower New YorkSM Program – Goals and Achievements

Activity	Time Frame for Goal	Goal	Achieved through June 30, 2011a	% of Goal Achieved
Households served (New York Energy \$mart SM)	July 1, 2006 – June 30 2011	34,111	33,240	97%
Households served (EEPS electric)	April 1, 2009 – December 31, 2011	22,782	12,589	55%
Households served (EEPS natural gas)	April 1, 2010 – December 31, 2011	2,115	279	13%

a Rows are not additive because households could be served by more than one funding source.

4.9.3 Follow-up on Evaluation Recommendations

Table 4-17 presents a summary of EmPower recommendations resulting from program evaluations. This table also provides the status of each recommendation (*i.e.*, if a recommendation has already been adopted, if it will be adopted in the future, or if it will not be adopted) as well as a response from program staff to each recommendation. The most current recommendations come from a recently completed process evaluation report issued in August 2010. Per DPS quarterly and annual reporting guidelines, these program recommendations will be revisited with program staff and updated, as applicable, on a quarterly basis.

Table 4-17. EmPower Evaluation Recommendations and Status

Source of Recommendation (Contractor, Report Title, Date)	Recommendation	Status	Program Implementer Response to Recommendation and Adoption Decision Rationale
Nexant, EmPower M&V, April 2007	Devise a methodology to automate the electronic transfer of results from the EmPower New York SM Calculator to the EmPower New York SM database.	Plan to Adopt	Staff are currently reviewing the EmPCalc tool, NY State Technical Manual, and the Quick Audit Tool recently developed for the Home Performance Program. Changes related to this recommendation are on hold pending outcome of this review and completion of current program evaluations. This recommendation is still pending.

Source of Recommendation (Contractor, Report Title, Date)	Recommendation	Status	Program Implementer Response to Recommendation and Adoption Decision Rationale
Nexant, EmPower M&V, April 2007	Devise a methodology to incorporate the AHAM baseline energy usage data, adjusted for degradation for refrigerators and freezers in to the EmPower New York SM Calculator to avoid the manual data entry errors while transferring results from REFRIGERATION [®] software to the EmPower New York SM Calculator.	Plan to Adopt	These revisions are on hold pending the process described for the above recommendation.

4.10 Buying Strategies and Energy Awareness Program

4.10.1 Program Description

The Buying Strategies and Energy Awareness Program consists of four initiatives: 1) the Buying Strategies Initiative, which assists the Office of Temporary and Disability Assistance (OTDA) to negotiate discounts on purchases of home heating oil by the Low-Income Home Energy Assistance Program (HEAP), and also includes a preventive maintenance component for oil-fired heating systems;¹ 2) the Targeted Marketing and Outreach Initiative, which seeks to increase participation in all NYSERDA, New York State, federal, utility, and community-based low-income energy efficiency and energy assistance programs, by targeting hard-to-reach (HTR) customers such as the elderly, the low-income population, and the non-English speaking population; 3) Low-Income Forum on Energy (LIFE), which provides a forum – large statewide conferences, smaller regional meetings, and steering committee meetings – where energy industry professionals, policy makers, agencies serving the low-income population, and energy program implementers can discuss energy issues relevant to the low-income sector; and 4) contributions of funding to the Energy Smart Students Initiative (described in Section 4.8.1).

¹ Administration and funding of the Buying Strategies Program was transitioned to the OTDA on July 1, 2010. All SBC funds represented in the table below were spent on the program prior to that date.

4.10.2 Program Accomplishments

Table 4-18 shows the Program’s five-year goals and performance. The program is showing excellent performance, having already exceeded all of its four goals.

Table 4-18. New York Energy \$martSM Buying Strategies and Energy Awareness Program – Goals and Achievements¹

Activity	Program Goals (July 1, 2006 through June 30, 2011)	Achieved July 1, 2006 through June 30, 2011	% of Goal Achieved
Funds leveraged through Buying Strategies initiative	\$20 million	\$22.5-24 million	>100%
Additional low-income individuals reached via newsletters, weekly newspapers, etc. (readership)	5 million	21.4 million	>100%
Additional low-income individuals reached via seminars and workshops (attendees)	15,000	328,873	>100%
Additional contractors and other partners recruited in low-income districts	50	1,702	>100%

¹ The first row shows Buying Strategies as financed by SBC funds through July 1, 2010. The remaining rows show the continuing progress of the remaining program elements as they continue under SBC funding

5 *Research and Development Programs*

5.1 Overview of the Research and Development Programs

New York Energy \$martSM Research and Development (R&D) activities target the following areas: (1) transmission and distribution, (2) clean energy infrastructure, (3) power systems, (4) combined heat and power, (5) demand response, (6) electric transportation, (7) environmental monitoring, (8) industrial process, (9) water and wastewater, and (10) emerging technologies. Projects funded by the programs generally fall under one of four project types: demonstrations, business development, product development, and information dissemination/research study. These types are defined as follows:

- **Demonstrations:** Demonstration of a new product in its intended environment. The goal is to increase sales/usage of that particular product in the market. Results are used for product commercialization or to generate objective performance information for policy makers or end-users. This category includes demonstrations of on-site power generation.
- **Business Development:** Business development involves evaluating a business and then helping them realize full potential using such tools as marketing, information management and customer service. Activities include but are not limited to: assessment of market opportunities; intelligence gathering on customers and competitors; and advising on, drafting and enforcing sales policies and processes.
- **Product Development:** The process of bringing new products or services to the market or the improvement of existing products. This category ranges from proof of concept, product design, to detailed engineering.
- **Information Dissemination/Research Study:** A paper study or outreach activity, including environmental research studies, feasibility studies to examine technical gaps, feasibility studies to example installation of equipment at a specific site, a market potential studies for a specific technology, or activities to disseminate information.

5.2 R&D Program Evaluation Activities

The **New York Energy \$martSM** R&D program evaluation consists of an integrated, multi-faceted approach to assess the processes used by NYSERDA to conduct the work, determine the impacts of the product development and demonstration projects, conduct macro-level impact analyses of the projects on the New York State economy, and design and construct a database for collecting and storing project-by-project data and information necessary for further conduct of the impact and process evaluations.

Evaluation activities completed this quarter include:

- an updated macroeconomic impact analysis of job creation and economic benefits of NYSERDA's product development R&D programs, and
- a case study of the AWS Truepower product development R&D activities.

Evaluation activities underway for the R&D programs include:

- R&D Program Metrics Database (Phase 2), including work to populate the database, and
- process and market characterization/assessment evaluations for the DG/CHP Demonstration Program.

The case study results are expected to be featured in NYSERDA's second quarter report. The process and market characterization/assessment study of DG/CHP is just underway and results will be reported when they become available.

5.3 Summary of R&D Program Budget and Spending Status

Table 5-1 presents detailed budget and funding information for the Research, Development, and Demonstration (RD&D or R&D) programs.

Table 5-1. Research & Development Programs – New York Energy SmartSM Financial Status through June 30, 2011 (\$ million)

Program	Budget ¹			Funds Spent			Encumbered Funds ⁴ % of Budget Encumbered	Committed Funds ⁵ % of Budget Committed
	SBC I & SBC II ²	SBC III ³	Total Budget	SBC I & SBC II ²	SBC III ³	Total Funds Spent % Funds Spent		
Public Benefit Power Transmission and Distribution Research	0.0	13.0	13.0	0.0	4.3	4.3 33.4%	9.5 72.8%	13.0 100.0%
End Use Renewable Energy Market ⁶	19.0	24.9	43.8	19.0	23.4	42.4 96.8%	43.8 100.0%	43.8 100.0%
Clean Energy Infrastructure	0.0	49.5	49.5	0.0	20.7	20.7 41.8%	40.6 81.9%	49.2 99.3%
Distributed Energy Resources: Products and Demonstrations ⁷	34.0	115.3	149.2	34.0	50.5	84.5 56.6%	119.4 80.0%	148.6 99.6%
Demand Response and Innovative Rate Research	0.0	6.0	6.0	0.0	0.4	0.4 7.4%	1.6 26.3%	6.0 100.0%
Electric Transportation	0.0	5.0	5.0	0.0	2.4	2.4 47.5%	4.3 85.6%	5.0 100.0%
Environmental, Monitoring, Evaluation, and Protection	17.7	23.8	41.5	17.7	14.9	32.6 78.6%	38.6 92.9%	40.2 96.9%
Industrial and Municipal Process Efficiency ⁸	0.0	13.0	13.0	0.0	8.2	8.2 63.4%	10.5 80.8%	13.0 100.0%
Next Generation and Emerging Technologies	18.3	24.5	42.7	18.3	17.0	35.3 82.6%	41.2 96.3%	42.7 100.0%
Wholesale Renewable Energy Market	16.5	3.6	20.0	16.5	2.9	19.4 96.6%	20.0 100.0%	20.0 100.0%
Other ⁹	0.4	-	0.4	0.4	<0.1	0.4 100.0%	0.4 100.0%	0.4 100.0%

Program	Budget ¹			Funds Spent			Encumbered Funds ⁴ % of Budget Encumbered	Committed Funds ⁵ % of Budget Committed
	SBC I & SBC II ²	SBC III ³	Total Budget	SBC I & SBC II ²	SBC III ³	Total Funds Spent % Funds Spent		
TOTAL Research & Development	\$105.9	\$278.4	\$384.3	\$105.9	\$144.9	\$250.8 65.2%	\$329.9 85.8%	\$382.0 99.4%

¹ Reflects carryover in funds and reallocation as approved by the PSC in 2007.

² SBC I: July 1, 1998 through June 30, 2001; SBC II: July 1, 2001 through June 30, 2006.

³ SBC III: July 1, 2006 through June 30, 2011.

⁴ Encumbered funds associated with signed contracts and purchase orders.

⁵ Committed funds associated with encumbered funds and pending contracts.

⁶ Over committed amounts will be reclassified to the approved Renewable Portfolio Standard (RPS) Customer Sited Tier budget.

⁷ This includes the DG/CHP Demonstration Program and Power Systems Product Development.

⁸ This includes the Industrial Process and Product Innovation Program and Municipal Water and Wastewater Program.

⁹ Other: Projects transferred from the Empire State Electric Energy Research Corp. (ESEERCO) Program closed.

Totals may not sum due to rounding.

Source: NYSERDA

5.4 Program Results Summary

Significant progress is being made by the R&D portfolio. This section summarizes key evaluation findings from the latest set of evaluation activities, and from the cumulative body of work conducted by NYSERDA and its evaluation contractors over the past several years.

5.4.1 Energy, Peak Demand and Fuel Savings and Clean Generation

Through NYSERDA's Impact Evaluation activities, independent third-party contractor teams assessed the energy and peak demand savings and clean generation reported for the DG-CHP Demonstration, Clean Energy Infrastructure, and Demand Response and Innovative Rate Research programs. Methods used in this assessment included on-site verification of equipment installation and functionality, and review of NYSERDA's files for reasonableness and accuracy. Based on this review, the contractors adjusted the savings reported by NYSERDA. In turn, the contractors further adjusted these figures, based on primary research, to account for freeridership and spillover. Table 5-2 summarizes the estimated net electricity savings and clean generation for each of the two applicable R&D programs. Table 5-3 summarizes peak demand reductions. Table 5-4 shows natural gas impacts for the R&D programs.

Table 5-2. New York Energy \$martSM R&D Program Electricity Savings and Clean Generation through June 30, 2011

Program	Energy Savings (GWh)	
	Savings Achieved through	
	June 30, 2006	June 30, 2011
DG-CHP Demonstration Program ¹	82.7	542.4
Renewable Energy Production	103.8	107.9
Statewide R&D Total	186.5	650.3

¹Savings shown in this row are inclusive of overlap with the FlexTech Technical Assistance Program. This cross-sector overlap is subtracted out of the portfolio level results presented in Section 2 of this report.

Table 5-3. New York Energy \$martSM R&D Program Cumulative Peak Demand Savings through June 30, 2011

Program	Demand Savings (MW) ¹	
	Savings Achieved through	
	June 30, 2006	June 30, 2011
DG-CHP Demonstration Program ²	18.1	98.3
Demand Response and Innovative Rate Research	137.2	99.0
Renewable Energy Production	8.1	11.7
Statewide R&D Total	163.4	209.0

¹MWs enabled under the SBC2 program Enabling Technologies for Price Responsive Load were not required to persist beyond the period of the contract. As such, the available MWs have steadily declined since the program's close.

²Savings shown in this row are inclusive of overlap with the FlexTech Technical Assistance Program. This cross-sector overlap is subtracted out of the portfolio level results presented in Section 2 of this report.

Table 5-4. New York Energy \$martSM R&D Program Natural Gas Impacts through June 30, 2011

Program	Fuel Savings (MMBtu)	
	Savings Achieved through	
	June 30, 2006	June 30, 2011
DG-CHP Demonstration Program ¹	-571,310	-3,667,164
Statewide R&D Total	-571,310	-3,667,164

¹This table shows the negative natural gas impacts from DG-CHP demonstration projects due to an increase in on-site gas use resulting from project operations. Although other R&D programs result in positive natural gas impacts, these impacts are not verified and therefore are not reported here. Because the electricity saved by the DG-CHP projects replaces electricity formerly purchased from the grid, the program has reduced fuel used at central generating stations, for a net decrease statewide due to greater efficiency of the DG-CHP systems at sites where imported fuel is used. The fuel avoided at the central generating plant is determined from the electricity generated by the DG-CHP installations. Furthermore, at additional projects such as wastewater treatment plants, electricity generation is powered fully or partially by digester gas produced on site. Such fuel switching achieves natural gas conservation above and beyond what is achieved through efficiency alone. Impacts shown in this row are inclusive of overlap with the FlexTech Technical Assistance Program. This cross-sector overlap is removed from the portfolio level results presented in Section 2 of this report.

5.4.2 Follow up on R&D Program Portfolio Level Evaluation Recommendations

Table 5-5 presents a summary of R&D Program recommendations resulting from program evaluations. This table also provides the status of each recommendation (*i.e.*, if a recommendation has already been adopted, if it will be adopted in the future, or if it will not be adopted) as well as a response from program staff to each recommendation. These recommendations come from a recently completed process evaluation on R&D Program funding opportunities issued in August 2010. The full report is available on NYSERDA's website at http://www.nysERDA.org/Energy_Information/ContractorReports/nysERDA_rd_process_report.pdf and is summarized in the Q3 2010 report. Per DPS quarterly and annual reporting guidelines, these program recommendations will be revisited with program staff and updated, as applicable, on a quarterly basis. Recommendations that have already been addressed and discussed in prior reports are not included here.

Table 5-5. R&D Program Portfolio Level Evaluation Recommendations and Status

Source of Recommendation (Contractor, Report Title, Date)	Recommendation	Status	Program Implementer Response to Recommendation and Adoption Decision Rationale
RIA, Research and Development Program Funding Opportunities, Process Evaluation, August 2010	Continue to explore ways to make requirements clear and easy to follow; <i>e.g.</i> , conduct research on what of the commercialization requirements need clarification.	In Process	R&D program staff are researching ways to define and guide proposers through the solicitation process, in particular stage gates that will direct proposers to apply for funding appropriate to their stage of commercialization.
	Consider waiving or lowering cost-share requirements for not-for-profits.	Under consideration	R&D program staff are considering this as an option for future solicitations.
	Continue to allow direct contact with program staff members but encourage proposers to attend public information sessions, teleconferences, and webinars.	Adopted	R&D program staff offer webinars, teleconferences and in-person meetings to answer questions.
	Annually review procedures for requesting and scheduling debriefings and for communicating those procedures to proposers, and subsequently review those procedures with all R&D staff to ensure that the procedures are understood and followed.	Plan to Adopt	R&D program staff intends to implement this recommendation.
	Carry out the ORDB update as planned, and as possible incorporate features and conventions to ensure consistent data entry and include fields to record technical and non-technical contacts, entity type, and type of interest in funding opportunities and to mark records that should be excluded from surveys. Revise existing records to comply with convention.	In Process	Marketing staff are in the process of implementing a Customer Relationship Management System. R&D has representation on the implementation team.
	Develop ways to update existing records after adding new fields, such as by sending email requests or allowing individuals to update their database records on line.	In Process	Marketing staff are in the process of implementing a Customer relationship Management System. R&D has representation on the implementation team.
	Generate an individualized email to each recipient of a broadcast email announcement.	Plan to Adopt	R&D program staff intends to implement applicable parts of this recommendation.

5.4.3 Macroeconomic Impact Evaluation of Product Development Activities: 2011 Update

Background and Analytic Approach

A primary goal of NYSERDA's R&D programs is to improve the economic environment in New York. R&D projects categorized as product development are designed to increase the manufacturing and sale of new products. Sales of new products set off a ripple effect that impacts many sectors of the New York economy. NYSERDA staff, working with the Impact Evaluation Team, is developing a multi-faceted approach to quantify these effects.

NYSERDA modeled the economic impact of new product sales using a macroeconomic modeling program called *Policy Insight+*, developed by Regional Economic Models, Inc. (REMI) of Amherst, Massachusetts. *Policy Insight+* generates year-by-year estimates of the total regional effects of specific policy initiatives. A wide range of input variables is available to predict economic and demographic effects.

The product development impact evaluation survey conducted in 2008¹ was used as the basis for certain assumptions in this year's analysis. For example, sales impacts were reduced to account for products manufactured out-of-state.

The following input variables were entered into *Policy Insight+*:

- Collection of ratepayer funds, segregated by residential, commercial, and industrial ratepayers.
- NYSERDA spending on program evaluation, measurement, and verification.
- NYSERDA spending on product development activities.
- Private monies spent on product development activities associated with the NYSERDA spending.
- Product sales as a result of program activities.

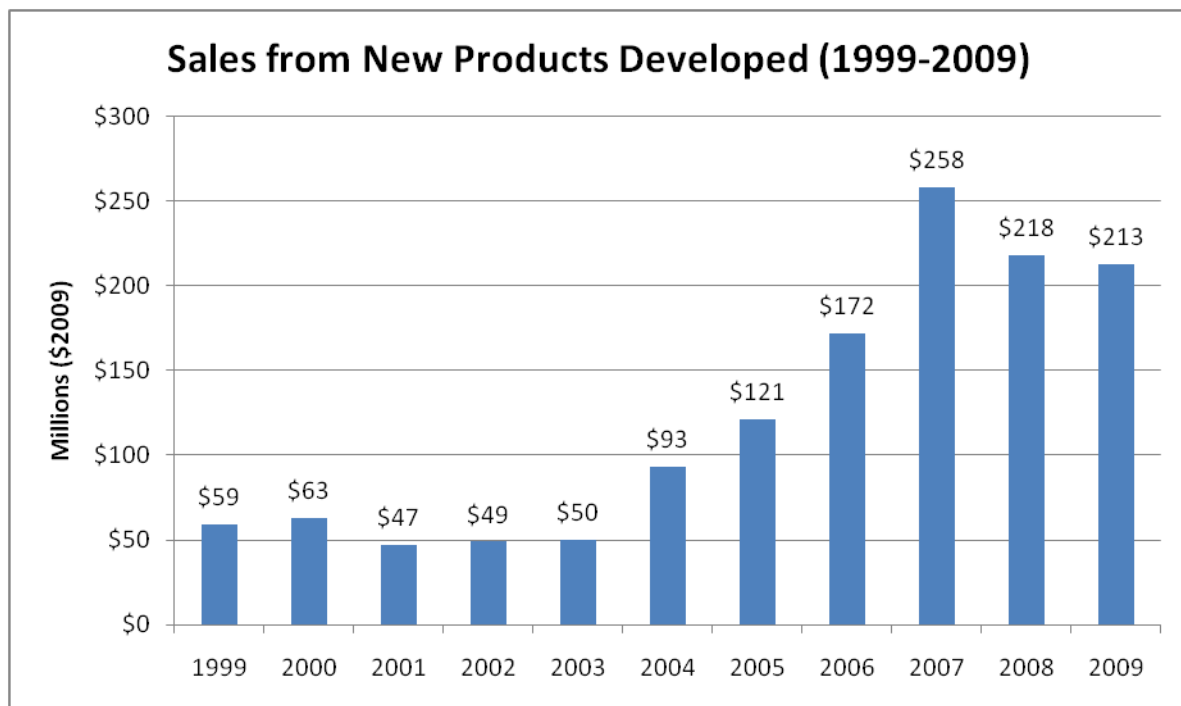
The above variables were mapped to the *Policy Insight+* sector that most closely resembled the associated activity. The analysis used estimated sales for the period 1999 through 2009. Sales were estimated based

¹NYSERDA, R&D Product Development Impact Evaluation, December 2010.

on recoupment payments received by companies that were awarded NYSERDA funding.² In general, recoupment agreements state that companies must repay NYSERDA at a rate of 1.5% of sales revenues until the funding amount is repaid. The repayment amounts by year were obtained from NYSERDA’s financial records. Since the repayment amount is capped³ and because sales were estimated using the repayments, most of the sales used in the analyses represent the lower limits on sales. For 2007, 2008, and 2009 estimates, additional sales data were obtained from four companies that had met their recoupment obligations. These sales that occurred beyond the recoupment period were added to the model.

The estimate of new product sales in the years 1999 to 2009 are shown in Figure 5-1. Sales in 2009 were approximately \$213 million (in 2009 dollars), slightly lower than in 2008.

Figure 5-1. Sales from New Products



²Although the bulk of the sales originated from projects approved with statutory funding, rather than SBC funding, the relative magnitude of benefits to spending is assumed to be the same for both funding sources.

³The repayment is capped at the amount of funds the company received from NYSERDA.

Results

Shown in Table 5-6 are the estimated sales for the 11-year period from 1999 through 2009 and the NYSERDA spending on product development activities for the 11-year period from 1996 through 2006. The four-year lag between sales and NYSERDA spending represent the lag between NYSERDA funding and start of sales activities.⁴ Also shown in Table 5-6 are the resulting macroeconomic impacts measured as change in net employment and change in gross state product⁵ (GSP). For the 14-year period from 1996 through 2009, GSP rose by a total of \$689 million (2009\$). The ratio between NYSERDA funding and the change in GSP is 5.4⁶. Also, in 2009, approximately 800 net jobs were created and from 1996 through 2009, 5,100 jobs were created. Most of these jobs were in the "Manufacturing" and "Professional and Technical Services" sectors.

Table 5-6. Change in Employment and GSP as a result of NYSERDA Product Development Funding Activities

	Input Variables		Macroeconomic Impacts	
	Product Sales (Millions of 2009\$)	NYSERDA Spending on Product Development (Millions of 2009\$)	Jobs	Net Change in Gross State Product (Millions of 2009\$)
1996	--	\$9.6	85	\$7.6
1997	--	\$8.7	60	\$4.4
1998	--	\$9.1	51	\$4.4
1999	\$59.3	\$15.4	396	\$39.3
2000	\$62.7	\$12.3	359	\$37.1
2001	\$46.7	\$12.9	244	\$24.0
2002	\$49.3	\$9.9	224	\$22.9
2003	\$50.1	\$12.2	220	\$22.9

⁴The results of the product development impact survey, conducted in 2008, indicated that the lag between NYSERDA funding and product launch was four years.

⁵Gross state product, also known as value added, includes the components of labor income (employee compensation and proprietor income) plus property income (interest, rental income, royalties, dividends, and profits) and indirect business taxes (primarily sales and excise taxes).

⁶The ratio was calculated as the net present value (NPV) of the change in GSP from 1996 to 2009 divided by the NPV of NYSERDA collections from 1996 to 2006.

	Input Variables		Macroeconomic Impacts	
	Product Sales (Millions of 2009\$)	NYSERDA Spending on Product Development (Millions of 2009\$)	Jobs	Net Change in Gross State Product (Millions of 2009\$)
2004	\$93.1	\$8.8	350	\$40.4
2005	\$121.3	\$6.0	406	\$51.3
2006	\$171.9	\$5.5	520	\$85.2
2007	\$257.7	--	754	\$133.2
2008	\$217.6	--	629	\$101.5
2009	\$212.9	--	810	\$114.6
Total	\$1,342	\$110	5,100	\$689

Shown in Figure 5-2 are the differential impacts of the various model inputs on GSP for the time period 1996 through 2009. The chart shows that funds collected from ratepayers to pay for NYSERDA's product development efforts impacts the GSP negatively, but that these are more than offset by the positive impact of the product sales. A similar chart is shown for net jobs in Figure 5-3.

Addition of other inputs, if included, could have resulted in greater net positive impacts on the New York State economy. For example, the following items were not included because reliable data were not available:

- Impact of future sales of products caused by program spending from 1996 to 2006.
- Impact of sales generated beyond what was measured by NYSERDA's "recoupment" monies.
- Impact of energy saving products sold to New York State consumers.

Figure 5-2. Impacts of Various Input Variables on GSP

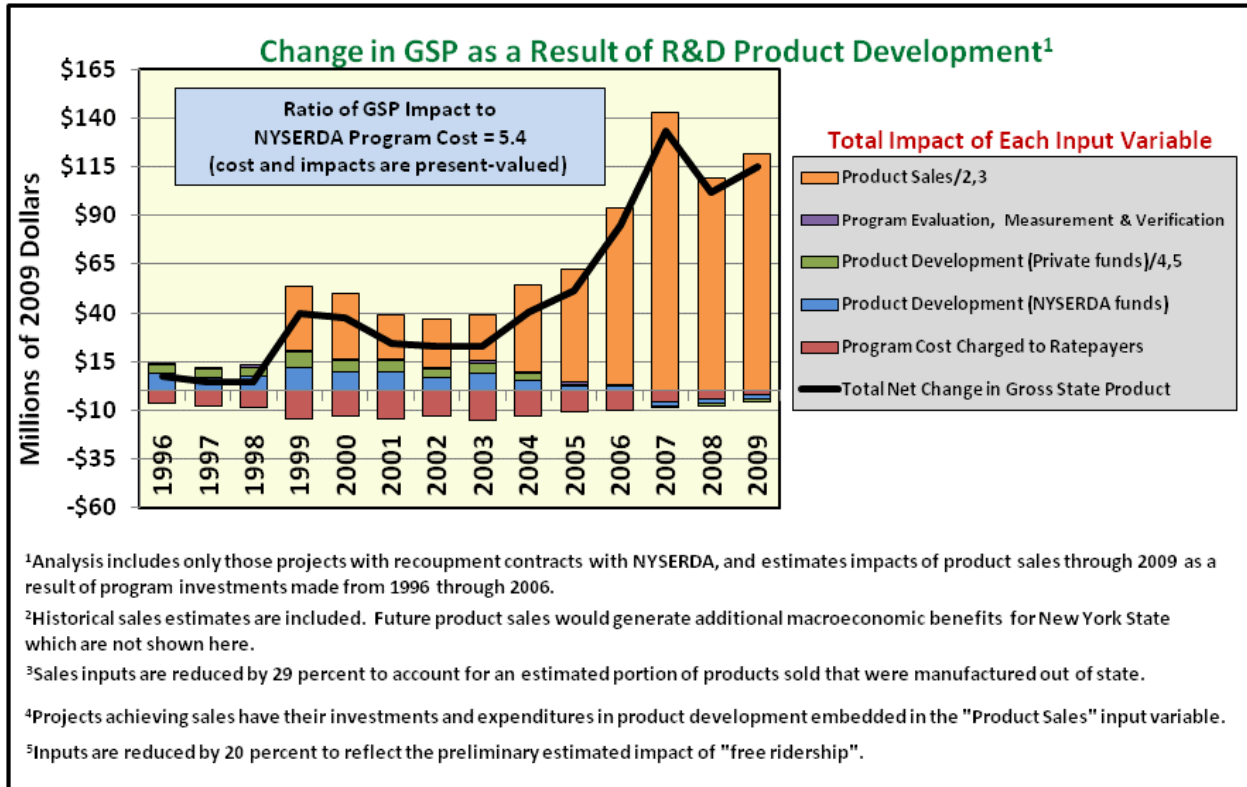
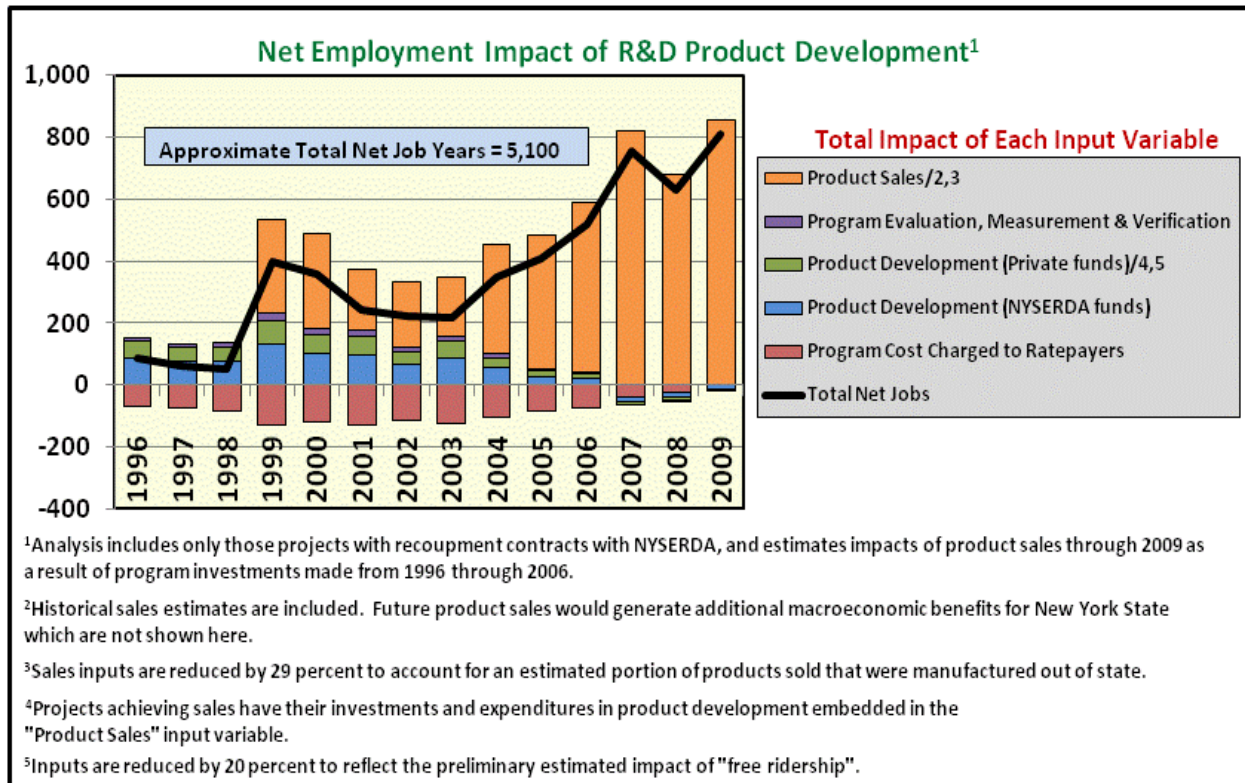


Figure 5-3. Impacts of Various Input Variables on Net Jobs



5.4.4 AWS Truepower’s Wind Forecasting and Wind Mapping Products and Services Case Study

NYSERDA's project with AWS Truepower, LLC was to support the development of Wind Forecasting and Wind Mapping Products and Services for wind energy applications. When deciding where to build a wind project, even small differences in wind speed make a big difference in the amount and cost of electricity produced. For example, a site with an average wind speed of 16 miles per hour (mph) can produce 30% more electricity than a site with 14 mph winds, and 50 to 60% more than a site with 13 mph winds. The AWS Truepower’s wind mapping and wind forecasting products and services offer significant economic benefits by identifying the best sites and by reducing the uncertainty associated with wind-power plant production.

In partnership with NYSERDA, AWS Truepower has developed a computer program to generate wind maps (MesoMap[®]) and the state-of-the-art wind forecasting service (eWind[®]).⁷ MesoMap[®] provides accurate, reliable, and affordable wind maps. The eWind[®] forecasting service provides accurate, dependable and convenient short-term wind forecasts for wind plants.

The wind mapping capabilities MesoMap[®] create accurate, reliable, and affordable wind maps that allow industry to evaluate the wind energy potential over a large area and identify attractive sites for wind projects. Accurate wind forecasts created by eWind[®] are essential because they reduce imbalance charges, minimize incremental reserve costs, facilitate plant dispatch scheduling, inform spot-market trading, increase capacity payments, and optimize plant maintenance. Wind maps and atlases have been produced for Southeast Asia, Brazil, China, Canada, India, all 50 U.S. states, Great Britain, Ireland, Poland, and many other countries and regions. The MesoMap[®] system was employed by the National Renewable Energy Laboratory over the course of a 10-year period to produce maps for the majority of the United States for public release.

AWS Truepower's eWind[®] is a state-of-the-art automated forecasting service developed specifically to meet the wind energy industry's need for accurate plant output forecasts anywhere from 10 minutes to seven days in advance. The eWind[®] system, which is composed of both physics-based and statistical models, takes advantage of a wide range of local and regional meteorological and power production data to typically yield a Mean Absolute Error for hourly power production forecasts of about 2% to 5% of installed capacity for a one-hour ahead forecast, about 9 to 14% for a four-hour ahead prediction, and about 13 to 19% for a day-ahead forecast. The eWind[®] has become the North American wind forecasting market leader with thousands of megawatts of installed capacity in its portfolio. There are currently 10 ISOs and RTOs operating in North America; the eWind[®] system currently supports 40% of this market.

5.4.5 Summary of Other Key Results

Across the **New York Energy \$martSM** R&D programs, five-year goals, encompassing the period July 1, 2006 to June 30, 2011, were established in the SBC III Operating Plan.⁸ Overall, the programs are also

⁷Both MesoMap[®] and eWind[®] are based on MASS (Mesoscale Atmospheric Simulation System), a numerical weather model, customized to increase resolution and account for important meteorological phenomena

⁸System Benefits Charge Proposed Plan for New York Energy \$mart Programs (2006-2011), As amended, March 2, 2006.

performing well with respect to these goals. Results of each program's progress toward its goals are shown in table format in the subsequent sections.

An overview of progress is presented below and is related to each program's five-year goals in the following sections:

- Under the Public Benefit Power Transmission and Distribution Research Program, 35 projects have been selected to pursue development of advanced technologies that will improve the efficiency and delivery of power for electric customers across the state. The Program has succeeded in collaborating with major stakeholders. The program has funded projects in several of the utility companies, is working with the NYISO's newly formed R&D group to prioritize critical technology needs, and is partnering with the U.S. Department of Energy (DOE) on smart grid projects and technology evaluation.
- The Clean Energy Infrastructure Program has helped develop four accredited training institutions, offered 27 training workshops, supported 146 companies in their efforts to expand renewable business networks, and helped 10 manufacturing companies expand their operations.
- The Power Systems Program has funded 71 projects, launched nine new products and completed nine field demonstrations.
- The DG-CHP Demonstration Program has funded 64 projects representing 140 MW of anticipated installed capacity.
- Demand Response and Innovative Rate Research Program has enlisted the participation of 5,330 apartments for time-sensitive electric rate pilot programs.
- The Electric Transportation Program has issued 11 solicitations and selected 32 projects for funding.
- The Environmental Monitoring, Evaluation, and Protection Program has issued 11 solicitations, resulting in 61 contracts and \$12 million in co-funding. Twenty-eight research reports, five summary communications, and 93 journal articles have been published.
- The IPPI Program has issued seven solicitations resulting in 59 projects.
- The Municipal Water and Wastewater Efficiency Program has selected six projects for funding. The program goal of providing information to 1,000 individuals serving the municipal wastewater and water treatment sectors was achieved in 2008.
- Under the Next Generation and Emerging Technologies Program, 26 advanced building projects, 11 daylighting design assistance, two solar thermal projects, and 33 emerging technologies projects have commenced.

5.5 Public Benefit Power Transmission and Distribution Research

5.5.1 Program Description

The Public Benefit Power Transmission and Distribution Research Program supports transmission and distribution (T&D) research that has broad statewide benefits. Projects provide improvements in energy efficiency, power reliability, quality and security, and reduce the cost of energy and energy delivery. NYSERDA is coordinating with all key stakeholders including the New York State Independent System Operator (NYISO), the New York State Department of Public Service (DPS) and the electric utilities to implement a comprehensive R&D strategy to optimize performance of the electric power delivery system.

5.5.2 Progress Toward Goals

The program was initiated in 2007. Three solicitations have been issued seeking projects to:

1. Demonstrate and develop technologies that improve the performance of the electric power delivery system in New York.
2. Develop strategies that support sustainable investment, equitable and efficient electric energy markets, and continued improvement of the electric power delivery system in New York.

Program goals and progress are described in Table 5-7 . Shown in Table 5-8 is the status of projects approved for funding to date.

Table 5-7. Public Benefit Power Transmission and Distribution Research Program – Goals and Achievements

Activity	Program Goals (July 1, 2006 through June 30, 2011)	Achieved July 1, 2006 through June 30, 2011	% of Goal Achieved
Issue annual solicitations	Twelve or more projects resulting in progress toward program objectives	Three solicitations were completed (total of five rounds), resulting in 32 projects. The American Recovery & Reinvestment Act (ARRA) of 2009 provided a unique opportunity to leverage funding. Three (3) additional projects used ARRA funding for a variety of research activities. All projects are in various stages of development or have been completed.	100%
Technology transfer	Undertake knowledge transfer activities aimed at utilities	Knowledge transfer activities have begun as projects near completion. Results from one of the projects were shared with the NYS Smart Grid Consortium and will be presented at the 2010 CIGRE conference (International Council on Large Electric Systems). As projects are completed, their final reports are posted on the NYSERDA website for information dissemination.	N/A

Table 5-8. Status of Public Benefit Power T&D Research Program Projects

Number of SBC-funded Projects Approved	Number of Signed Active Contracts	Number of Unsigned Contracts	Number of Withdrawn or Terminated Contracts	Number of Completed Projects
32	23	8	1a	8

a Renegotiating contract for signature.

During the fourth quarter of 2010, Round One of PON 1913 “Smart Grid Program” received 17 proposals, requesting total funding of approximately \$14.5 million. Seven projects with funding of \$4.7 million were approved.

5.6 Clean Energy Infrastructure

5.6.1 Program Description

The previous End-Use Renewables Program (EUR) provided the foundation for the creation of the Clean Energy Infrastructure Program. Clean Energy Infrastructure efforts will be closely integrated with other SBC-funded efforts, such as Power Systems Program, to develop and commercialize clean energy technologies. The ultimate goal of these programs is to reach the point at which the value of the technology is worth the investment required by the consumer, and the market infrastructure is in a position to deliver and support the technology over the long term. This program is complementing efforts under the Renewable Portfolio Standard (RPS) by supporting training, education and market development for RPS-eligible technologies such as photovoltaics. The Clean Energy Infrastructure funds may also be used to reduce the installation and operating cost of systems not eligible for RPS funding.

5.6.2 Progress Toward Goals

The Clean Energy Technology Manufacturing and Business Development programs increased the number of companies developing and manufacturing clean energy technologies to ten. Business development support services serving the clean energy businesses in New York, increased from 22 in 2008 to 146 as of the end of the second quarter 2011. This includes the entrepreneurs in residence program (funded under PON 995) and the clean tech executives (funded under PON 1216).

In the Education, Consumer Awareness, and Market Development programs, there are currently 40 training partners around the state, including the four training institutions with accreditation: Bronx Community College for PV, Hudson Valley Community College for PV, SUNY Delhi for PV, and SUNY Farmingdale for PV.

As of this period, a total of 269 PV installers are eligible to participate in NYSERDA's PV incentive program, including 45 individuals NABCEP certified, 198 eligible, and 72 with provisional status.

Several non-energy goals have been set for the Clean Energy Infrastructure Program. These five-year goals, as well as cumulative performance through June 30, 2011 are shown in Table 5-9. The Program is performing well with respect to its goals.

Table 5-9. Clean Energy Infrastructure Program Goals achieved from July 1, 2006 through June 30, 2011

Activity	Program Goals (July 1, 2006 through June 30, 2011)		Achieved July 1, 2006 through June 30, 2011	% of Goal Achieved
Education, Consumer Awareness and Market Development				
New accredited training institutions	3	Self-sustaining accredited training and certification programs for clean energy technologies in addition to PV	4	>100%
New certification exams	5		3	60%
Training workshops	25		27a	>100%
Renewable Resource Applications				
Stakeholder workshops	7	Addressing knowledge and technical barriers currently impeding installation and operation of wholesale and end-use clean energy technologies	13	>100%
Competitive research solicitations	5		14	>100%
Clean Energy Technology Manufacturing and Business Development				
Companies receiving NYSERDA assistance directly, through supported incubators, or through other supported business services	25	Increase the number of companies developing and manufacturing clean energy technologies, and serving the clean energy businesses in New York	146	>100%
Companies expanding manufacturing	10		10	100%

a This program goal does not include the many clean energy renewable and efficiency training workshops throughout the state held by NYSERDA's training partners.

5.7 Power Systems

5.7.1 Program Description

The goal of this program is to work with New York technology companies to develop distributed generation and storage products, and to expand the number of marketable competitive products that reduce peak load, improve power quality, and provide improved cost-effective environmental performance. The Power Systems Program supports New York businesses in all aspects of product development necessary to create and commercialize power generating products that are clean, efficient, reliable, and cost effective, as well as other products that reduce peak demand or improve end user power quality. Additionally, the program focuses on New York specific issues such as economic development

and job creation in New York State; targets technologies and opportunities that are not being addressed by the market; addresses regulatory barriers to the adoption of superior new technologies; and, emphasizes the development of economically-competitive options for end users.

5.7.2 Progress Toward Goals

Several long-term non-energy goals have been set for the Power Systems Product Development Program. Goals and accomplishments are shown in Table 5-10. The program is performing well with respect to its goals.

Table 5-10. Power Systems Product Development Program Goals achieved from July 1, 2006 through June 30, 2011

Activity	Program Goals (July 1, 2006 through June 30, 2011)	Achieved July 1, 2006 through June 30, 2011	% of Goal Achieved
Number of contracts signed between July 1, 2006 through June 30, 2011	75	71	95%
New products launched between July 1, 2006 through June 30, 2011a	5	11	100%
Sales revenue from new products launched between July 1, 2006 through June 30, 2011a	\$50 million	TBD	TBD
Number of completed field demonstrations between July 1, 2006 through September 30, 2010a	15	9	60%
Number of technology assessment studies funded between July 1, 2006 through September 30, 2010	20	7	35%

a Includes results from projects funded prior to July 1, 2006.

5.8 DG-CHP Demonstration

5.8.1 Program Description

The DG-CHP Demonstration Program supports the growth of combined heat and power and other distributed generation applications in New York. The program provides funding for single and multi-site demonstrations, and seeks to improve awareness among end-users and project developers of DG-CHP. The program also seeks to address DG-related issues such as DG permitting; Standard Interconnection Requirements (SIR); utility standby service; tariffs; technology risk; renewable fuel options such as anaerobic digesters and landfill gas; and the impact of fluctuating prices of natural gas. The program uses financial incentives to encourage customer-sited DG using commercially available DG technologies such as reciprocating engines, steam turbines, gas turbines and microturbines. The program is coordinated with similar offerings from RPS Customer-Sited Tier and other System Benefits Charge programs such as the Multifamily Performance and the Existing Facilities Programs.

5.8.2 Progress Toward Goals

Two important non-energy goals have been set for the DG-CHP Program. These five-year goals and progress are shown in Table 5-11. The program is making good progress toward achieving its long-term goals.

Table 5-11. DG-CHP Demonstration Program Near-Term Goals

Activity	Program Goals (July 1, 2006 through June 30, 2011)	Achieved July 1, 2006 through June 30, 2011	% of Goal Achieved
Issue annual solicitations and incentive offers	Fund 50 or more CHP demonstrations with a cumulative capacity of 100 MW and associated efficiency and environmental benefits, and with 50 MW downstate.	Six solicitations, since 2006, have resulted in 64 funded projects with a total of 140 MW (36 are active projects, representing 47 MW). Within the active projects, 24 are in the Consolidated Edison service area, representing 7.7 MW.	>100% (Number of projects funded) >100% (MW goal) 15% (downstate MW goal)
Technology transfer	Conduct technology transfer and outreach activities to broaden acceptance of DG and CHP. Hold annual workshops and publish at least 10 final reports per year.	Currently, site-specific performance data is posted on http://chp.nyserda.org for 51 projects. A U.S. Environmental Protection Agency (EPA) CHP Partnership meeting was held in October 2009 and NYSERDA sponsored a CHP Roundtable. A CHP Programs Brochure has been developed and is distributed at appropriate conferences.	N/A

This past quarter, two contracts were executed and four projects became operational.

5.9 Demand Response and Innovative Rate Research (DR and IRR)

5.9.1 Program Description

This program addresses technology and market barriers that hinder retail customers from being active participants in a smart grid by: 1) participating in energy markets as demand response resources (*i.e.*, load curtailment, demand response generation, etc.), 2) managing and responding to market-based electric rates, and 3) having access to real-time, direct and in-home feedback on energy consumption. Novel load control technologies and techniques can enable more retail electric loads to participate as demand response resources and also respond to dynamic rates. Load controls often yield substantial energy efficiency and can be self-financed from the market-based DR revenues and cost avoidance. The new In-Home Energy Feedback research seeks to quantify the effects of providing NYS households with direct real-time feedback on their electrical consumption and cost, as may be accomplished with smart metering.

5.9.2 Progress Toward Goals

Two long-term non-energy goals have been set for the Demand Response and Innovative Rate Research Program. These five-year goals and progress are shown in Table 5-12. Shown in Table 5-13 is the solicitation activity for the program.

Table 5-12. Demand Response and Innovative Rate Research Program – Goals and Achievements

Goal	Program Goals (July 1, 2006 through June 30, 2011)	Achieved (July 1, 2006 through June 30, 2011)	% of Goal Achieved
Increase small customer participation in wholesale and local demand response programs	100 MW	1 MW	1%
Increase the number of multifamily apartment units participating in real-time and other time-sensitive electric rate pilots	3,000 apartment units	5,330 units participating in the demonstration	>100%

Table 5-13. Demand Response and Innovative Rate Research Program Project Status

	Number of SBC-funded Projects Approved	Number of Signed Active Contracts	Number of Unsigned Contracts	Number of Withdrawn or Terminated Contracts	Number of Completed Projects
PON 1151 “Innovations in Demand Response, Load Management and Dynamic Rates” (four rounds)	12	4	7	1	0
*PON 1772 “ Next Generation Emerging Technologies for End-Use Efficiency” (three rounds)	5	3	2	0	0

*PON 1772 was issued under the Next Gen and Emerging Technologies Program; however, it used Demand Response and Innovative Rate Research funds for five of the funded projects, which is listed above.

In quarter two, NYSERDA contractors installed and commissioned 230 smart room air conditioners and a smart building load control system in a NYC cooperative multi-family building. The project entitled, “Automated Peak Load Reduction System for NYC Master-Metered Multifamily Building Using Room Air Conditioners” will automatically reduce the building’s peak load and provide centralized curtailment control to be used in demand response. Tests are planned for this summer.

5.10 Electric Transportation

5.10.1 Program Description

This program supports emerging technologies from inception through field testing and pre-commercial deployment. The benefits of the electric transportation program will include peak load reduction in the New York City load pocket and permanent energy use reductions. These reductions will further result in cost savings for the subway and commuter rail systems and reduced transmission congestion in the region. Additionally, many projects are expected to lower transportation costs and emissions from petroleum-fueled vehicles.

5.10.2 Progress Toward Goals

The ultimate goals of the Electric Transportation Program are to:

- improve the energy efficiency of the New York’s current electrically powered commuter rail and subway system in the New York City load pocket, and
- reduce costs of power transmission by allowing unused off-peak capacity to generate revenue and reduce transportation petroleum use, greenhouse gases, and air emissions.

As shown in Table 5-14, five metrics are being monitored for the Electric Transportation Program.

Table 5-14. Electric Transportation Program Goals achieved from July 1, 2006 through June 30, 2011

Activity	Achievements from July 1, 2006 through June 30, 2011
Solicitations released	11
Proposals reviewed	71
Projects funded	32 awarded, 31 contracted
Funding for contracted projects	\$4.34 million ¹
Customer co-funding of contracted projects	\$11.5 million

¹Lower compared to last quarter due to disencumbered project.

5.11 Environmental Monitoring, Evaluation, and Protection (EMEP) Program

5.11.1 Program Description

This program commenced in the late 1990s as an effort to increase understanding of the environmental impacts of electricity production. EMEP initiatives are building on past efforts and evolving to support policy-relevant research in five primary areas: ecosystem response to sulfur, mercury, and nitrogen deposition; health- and energy-related research on air quality, particulate matter (PM), ozone, and co-pollutants; climate change; environmental impacts of alternative energy; and crosscutting environmental science and technology projects. The Program is guided by a steering committee comprised of major stakeholder groups. In addition, a separate science advisory committee continues to provide technical review. The Program has maintained a robust science and policy communication component to deliver program findings to policy-makers, scientists, and the public. The EMEP closely collaborates with regional and national entities to leverage funds for pertinent research projects.

5.11.2 Progress Towards Goals

Table 5-15 shows the EMEP Program accomplishments toward its five-year goals.

Table 5-15. Environmental Monitoring, Evaluation, and Protection Program Goals achieved from July 1, 2006 through June 30, 2011

Activity	Program Goals (July 1, 2006 through June 30, 2011)	Achieved July 1, 2006 through June 30, 2011	% of Goal Achieved
Develop detailed multi-year EMEP research plan with input from policymakers, scientists, and stakeholders	Complete EMEP research plan and update research plan as needed to ensure relevancy	EMEP’s research plan, developed with assistance from the New York Academy of Sciences, was released in September 2007. The Alternative Energy section was updated in 2008 with impacts of wind power development on wildlife in the state.	N/A
Develop, contract, and manage research projects aimed at priority energy-related environmental research areas	<ul style="list-style-type: none"> ▪ Issue six to 10 solicitations ▪ Contract 40 projects ▪ Leverage \$20 million into New York, help build a knowledge-based research infrastructure in New York 	Eleven solicitations have been issued. Sixty-one projects have been contracted, leveraging more than \$12 million in outside co-funding.	>100% of solicitation goal >100% of projects goal 60% of leveraged funds goal
Sponsor workshops, conferences, and seminars	Five to 10	EMEP has co-sponsored or hosted: 5 workshops 2 seminars 9 conferences 1 collaborative meeting	>100%
Provide web-based EMEP data and information	200,000 total customer visits, inquiries, and downloads to the EMEP website	EMEP websites had 170,000 hits during this period, totalling 327,000 hits and more than 63,000 downloads since inception.	>100%
Publish NYSERDA research reports	40	Twenty-eight research reports and five summaries were published, including one on RGGI emission allowance auction.	70%
Publish peer-reviewed journal articles	100	Articles published include: 41 on Air Quality/Health Effects, 45 on Ecosystems, two on Climate Change, and five crosscutting research articles.	93%
Provide briefings to decision makers	15	25 briefings were held with various regulators, policymakers, and other decision-makers relevant to EMEP research.	>100%

5.11.3 Follow-Up on Evaluation Recommendations

The process evaluation completed by Research into Action in 2010 focused on the information transfer component of NYSERDA's EMEP, which has been part of the **New York Energy \$martSM** Program since 1999.⁹ The process evaluation specifically sought to understand how EMEP information products are perceived and how they are used by several key contact populations. As part of this effort, the research team also sought to identify areas where EMEP could improve the access, usability, and/or relevance of the information products that flow from the program-sponsored research. The process evaluation report is now posted on NYSERDA's website.

Based on the report's findings and conclusions, the process evaluation made the following recommendations, which are presented in Table 5-16.

⁹ Research Into Action, Process Evaluation: Environmental Monitoring, Evaluation and Protection Program, June 2010.

Table 5-16. EMEP Evaluation Recommendations and Status

Source of Recommendation (Contractor, Report Title, Date)	Recommendations	Status	Program Implementer Response to Recommendation and Adoption Decision Rationale
<p>RIA, Process Evaluation of EMEP, June, 2010</p>	<p>Program staff members should focus on networking as an outreach activity and encourage others involved in the program to provide information about the program directly to their peers.</p>	<p>Under Review</p>	<p>These recommendations have been presented to the EMEP Program. Advisory Group and staff have received feedback from them. EMEP staff are in the process of reviewing proposals for an Outreach Contractor who will likely help implement some of the recommendations.</p>
	<p>Continue to require that EMEP researchers submit a final report that is appropriate for the project, the scope of which will vary on a case-by-case basis.</p>		
	<p>Consider strategies for simplifying the review process associated with finalizing reports when indicated by project characteristics.</p>		
	<p>Regardless of the level of technical review or the number of reviewers, project managers should continue to be alert for opportunities to collect and summarize comments; to minimize the number of document revisions; and ensure that each successive review is providing marginal improvement sufficient to justify the time required of the researcher and NYSERDA staff.</p>		
	<p>Define the purpose of quarterly reports and what NYSERDA expects these reports to contain, and consider ways to facilitate the quarterly reporting process for researchers, recognizing that they may not be accustomed to tracking budgets and research progress in this way.</p>		
	<p>Consider milestone reports and payments rather than quarterly reports if appropriate, given the anticipated workflow associated with individual research projects.</p>		
	<p>Consider a facilitated meeting with advisors to create a statement of focus or mission and otherwise clarify their role and what the program expects of them.</p>		
	<p>Clarify for advisors NYSERDA's expectations for dissemination of results, document review tasks, and promotion of EMEP efforts.</p>		
	<p>Improvements in constituent tracking would be valuable for implementing improvements to EMEP's overall outreach strategy.</p>		

5.12 Industrial Process & Product Innovation Program

5.12.1 Program Description

The Industrial Process & Product Innovation (IPPI) Program¹⁰ supports feasibility studies and technology demonstrations and commercialization that (1) improve energy productivity and competitiveness of New York manufacturers (minimize cost per unit of output), (2) encourage capital investment and employment growth in New York facilities, (3) introduce New York-manufactured goods into new markets, and (4) encourage adoption of process changes that minimize waste. Cost-shared demonstration projects reduce risk and encourage manufacturers to adopt innovative and underused product and process alternatives. IPPI addresses product development as well as industrial process improvements. Occasionally, in addition to the general-industry IPPI solicitation, the program also offers a sector-specific solicitation such as PON 1236, “Energy Productivity in Innovative Local Food Production Systems”.

5.12.2 Progress Toward Goals

Table 5-17 shows long-term goals and progress for the Program. The Program is making excellent progress with regard to the first goal. The second and third goals are being monitored over the longer-term.

¹⁰ This program was formerly known as the Industrial Research, Development and Demonstration Program.

Table 5-17. Industrial Process & Product Innovation Program – SBC III Goals and Achievements

Activity	Program Goals (July 1, 2006 through June 30, 2011)	Achieved from July 1, 2006 through June 30, 2011	% of Goal Achieved
Issue annual solicitations	Fund 30 to 40 cost-shared projects	Total of 59 projects approved for funding	>100%
Technology transfer	Conduct technology transfer and outreach activities to broaden the acceptance of successful technologies and technical approaches via participation in at least two workshops. Publish final reports as projects are completed.	Final reports: 8 Training sessions: 3 Conferences papers/presentations: 8 Site tours: 2 Open House: 1 Trade Journal articles: 2 Press release: 1 Excellence award: 1	N/A
Program metrics	Projects supported during the SBC III period are expected to result in cumulative annual energy savings of \$5 million, and project-related sales of \$10 million.	Seventeen projects completed: - Realized Energy savings: \$1.6 Million - Realized Non-energy savings: \$0.3 Million - Realized Project-related sales: \$3 Million - Anticipated energy savings: \$1.0 Million - Anticipated project-related sales: \$2.5 Million	Realized Energy: 24% Realized Sales: 30%

As shown in Table 5-18, 59 projects (from various NYSERDA solicitations) have been approved for funding. At this time, there are 26 signed contracts that are active and 17 projects have been completed. Shown in Table 5-19 is the distribution of active contracted projects by type.

Table 5-18. Status of IPPI Projects by Solicitation through June 30, 2011

	No. of SBC-funded Projects Approved	No. of Signed Active Contracts	No. of Terminated Contracts	No. of Completed Projects
PON 998: Industrial Process & Productivity Improvement	11	1	8	2
PON 1130: Industrial Research, Development and Demonstration	13	5	1	7
PON 1190: Industrial Process & Product Innovation	15	8	1	6
PON 1206: Data Center and Server Efficiency	2	1	1	0
PON 1236: Energy Productivity in Innovative Local Food Production Systems	3	2	1	0
PON 1276: Industrial Process and Product Innovation	14	9	4	1
PON 2250: Innovation in the Manufacturing of Clean Energy Technologies	N/A	N/A	N/A	N/A
Other – one purchase order for Agriculture Worksheets	1	0	0	1
All Solicitations	59	26	16	17

PON 998 was issued in 2006 with total funding of \$4 million.

PON 1130 was issued in 2007 with total funding exceeding \$5.7 million.

PON 1190 was issued in 2007 with total funding of \$5.5 million.

PON 1206 was issued in 2008 with total funding of \$3 million.

PON 1236 was issued in 2008 with total funding of \$1.5 million.

PON 1276 was issued in 2009 with total funding of \$2.75 million. PON 2250 was issued in 2011 (due dates in May and September) with total funding of \$2.5 million.

Table 5-19. Active IPPI projects by Project Type (July 1, 2006 to June 30, 2011)

	Number of Projects Encumbered	Funds Encumbered (\$Million)
Research Studies (feasibility studies, market assessments, etc.)	21 (50%)	\$1.48 (18%)
Process Improvement Demonstrations	11 (26%)	\$3.74 (45%)
Product Development	10 (24%)	\$3.03 (37%)
Total	42 (100%)	\$8.25 (100%)

This past quarter, the IPPI Program completed two projects, and terminated one project. Twenty-five applications for PON 2250 were received on May 26, 2011.

5.13 Municipal Water and Wastewater Efficiency

5.13.1 Program Description

The Municipal Water and Wastewater Efficiency Program supports the development and demonstration of new technologies for the water/wastewater treatment sector. Studies and technology transfer activities, designed to accelerate the adoption of energy efficiency technologies, are also supported. In New York, the water/wastewater treatment sector uses 2.5 to 3 billion kWh annually. On average, treatment of water and wastewater represents 35% of a municipality's energy budget.

This R&D program is closely coordinated with programs offered through NYSERDA's Energy Efficiency Services Group. The FlexTech Program (formerly known as the Technical Assistance Program) has served the municipal water/wastewater sector since 1997 and has provided funding for 92 site-specific feasibility analyses to date. Also, equipment incentives are available through NYSERDA's Existing Facilities Program. In addition, technology transfer and outreach, through the **Energy \$martSM** Focus Program, will continue to play a key role in encouraging the adoption of innovative and energy-efficient technologies and practices.

5.13.2 Recent Program Accomplishments

Several five-year goals have been set for the Municipal Water and Wastewater Efficiency Program. Since July 1, 2006, the Program has been making good progress toward all of its long-term goals as are shown in Table 5-20.

Table 5-20. Municipal Water and Wastewater Efficiency Program SBC III Goals and Achievements

Activity	Program Goals (July 1, 2006 through June 30, 2011)	Achievements from July 1, 2006 through June 30, 2011	% of Goal Achieved
Issue annual solicitation	Select and fund 25a or more projects. Provide assistance to a minimum of 25a municipal wastewater and water treatment facilities.	Six projects, directly affecting six facilities, have been funded. Ten projects, which will directly affect ten facilities, have been recommended for funding as a result of PON 2202; contract negotiations are currently underway for these projects.	64%
Technology transfer	Provide critical information to 1,000 individuals serving the municipal wastewater and water treatment sector in New York on ways to optimize energy use at municipal wastewater and water treatment facilities.	<ul style="list-style-type: none"> - 21 presentation with over 1300 participants - two webcasts with over 100 participants - one management training with 70 participants - one web-based report on submetering of wastewater plants - one publication - six conferences dedicated to wastewater - one meeting with policy makers <p><u>On-going:</u> The Energy Smart Focus program is providing customized services to support energy efficiency in the sector, offering outreach materials and training to individuals associated with the sector statewide.</p>	100%
Energy and cost savings	On average, these projects take five to seven years from conception to implementation.		

a This goal is based on the original budget of \$5 million, not the current budget of \$3 million.

PON 2202 was issued in February 2011 with \$1.6 million in total available funding. The PON specifically targeted the development or demonstration of innovative technologies associated with anaerobic wastewater treatment, energy-efficient nutrient removal from wastewater, and harnessing electric power from water and wastewater treatment systems.

5.14 Next Generation and Emerging Technologies

5.14.1 Program Description

This program emphasizes discrete and integrated end-use technologies for buildings, daylighting applications, solar thermal applications, and emerging technologies for industry and buildings not covered elsewhere in NYSERDA's **New York Energy \$martSM** portfolio of programs. The bulk of funds for this program is being administered through narrowly defined competitive solicitations focusing on advanced

building demonstrations, discrete building technologies, solar thermal applications, daylighting applications, and emerging technologies. The program emphasis is on funding developers of energy-efficient technologies that would be commercially available to end users. Demonstration solicitations are open to all end-use customers, particularly those with high electric loads.

5.14.2 Progress Toward Goals

Several long-term goals have been set for the Next Generation and Emerging Technologies Program. These five-year goals and progress are shown in Table 5-21. Overall, the Program is making good progress toward achieving its long-term goals.

Table 5-21. Next Generation and Emerging Technologies Program – Goals and Achievements

Activity	Program Goals (July 1, 2006 through June 30, 2011)	Achievements (July 1, 2006 through June 30, 2011)	% of Goal Achieved
Advanced Building Program	Two solicitations Two or more demonstration test beds	Seven solicitations completed. The advanced building solicitations have explored building systems such as whole-house ventilation, compression-less air conditioning, window improvements, and micro-CHP. Under PON 1096, Demonstration of High Performance Residential Homes, four teams were formed to design, build, and demonstrate high-performance residential homes to illustrate the importance of tight building envelopes and improved construction practices.	>100% of solicitations goal >100% of demo test beds goal
Daylighting Applications	50-100 design assistance projects Five daylighting implementations in buildings	Nineteen clients have received daylighting design assistance services. One daylighting implementation project is underway.	19-38 % of the design assistance goal 20% of the daylighting goal
Solar Thermal Applications	Two solicitations Five demonstrations	One solicitation (PON 1085) completed. Five out of six installations are complete from two demonstration projects.	50% of the solicitations goal >40% of the goal for demonstration projects

Activity	Program Goals (July 1, 2006 through June 30, 2011)	Achievements (July 1, 2006 through June 30, 2011)	% of Goal Achieved
Emerging Technologies	Five solicitations 25 product development projects	Five solicitations have been completed to date. Solicitations have funded a wide variety of product development and demonstrations of end-use technologies including thermo-photovoltaic applications, micro-CHP, solid copper rotor electric motors, high-efficiency billboard displays, and solar thermal air conditioning. Fourteen product development projects are underway.	>100% of the solicitations goal 56% of the projects goal

Shown in Table 5-22, by activity area, is the contract status of approved projects.

Table 5-22. Status of Next Gen Projects by Solicitation

	Number of Signed Active Contracts	Number of Unsigned Contracts	Number of Completed Projects
Advanced Building Program	17	0	9
Daylighting Applications	11	0	0
Solar Thermal Applications	2	0	0
Emerging Technologies	24a	6b	9
Total	54	6	18

a Three of these projects are funded with Demand Response funds

bTwo of these projects are funded with Demand Response funds

During this past quarter, PON 1772: Next Generation Emerging Technologies for End-Use Efficiency has six contracts currently in contract negotiation and one signed contract.

The Advanced Buildings Program released PON 2254, which was a result of the Deep Energy Retrofit Pilot work in Utica, NY, and the results that work generated. PON 2254 requests proposals that will develop, investigate and implement design strategies (materials and methods) that will provide deep energy retrofit solutions to existing residential building envelopes.

Appendix A: Evaluation Adjustment Factors

This appendix was created in lieu of tables previously presented in Sections 3, 4, and 5 of each quarterly report showing the adjustments applied to each program’s reported savings for measurement and verification (M&V) and attribution (net-to-gross) evaluation assessments. Only the final net program savings, with all adjustments applied, are presented within the main body of this quarterly report, but these adjustment factors are provided so the reader can understand the extent to which M&V realization rates and the attribution work on freeridership and spillover affect the overall program achievements.

Table A-1. Commercial/Industrial Program Evaluation Adjustment Factors

Program	Savings Metric	Realization Rate	Freeridership	Spillover	Net-to-Gross Ratio
Existing Facilities (New York Energy \$mart SM)	MWh	N/A ¹	N/A ¹	N/A ¹	N/A ¹
	MW	N/A ¹	N/A ¹	N/A ¹	N/A ¹
	Curtable MW	N/A ¹	N/A ¹	N/A ¹	N/A ¹
	MMBtu	N/A ¹	N/A ¹	N/A ¹	N/A ¹
Existing Facilities (EEPS electric and natural gas)	MWh	1.0	N/A	N/A	0.90a
	MW	1.0	N/A	N/A	0.90a
	MMBtu	1.0	N/A	N/A	0.90a
Business Partners: Small Commercial Lighting	MWh	0.94	39%	79%	1.10b
	MW	1.0	39%	79%	1.10b
Business Partners: Premium Efficiency Motors	MWh	1.0	67%	168%	0.88
	MW	1.0	67%	113%	0.70
Business Partners: Commercial HVAC	MWh	N/A	N/A	N/A	N/A
	MW	N/A	N/A	N/A	N/A
Business Partners: Hospitality Lighting	MWh	Not Evaluated	Not Evaluated	Not Evaluated	Not Evaluated
	MW	Not Evaluated	Not Evaluated	Not Evaluated	Not Evaluated

Appendix A: Evaluation Adjustment Factors

Program	Savings Metric	Realization Rate	Freeridership	Spillover	Net-to-Gross Ratio
Loan Fund	MWh	0.81c	27%	20%	0.93
	MW	1.73c	27%	20%	0.93
	MMBtu	1.59	27%	20%	0.93
New Construction (New York Energy \$mart SM)	MWh	1.03d	39%	89%	1.22d
	MW	0.97d	39%	89%	1.22d
	MMBtu	1.0d	39%	89%	1.22d
New Construction (EEPS electrical and natural gas)	MWh	1.03	39%	89%	1.22
	MW	0.97	39%	89%	1.22
	MMBtu	1.0	N/A	N/A	0.9a
Flex Tech (New York Energy \$mart SM)	MWh	1.0d	25%	48%	1.14d
	MW	1.0d	25%	48%	1.14d
	Curtable MW	1.0d	25%	48%	1.14d
	MMBtu	1.0	25%	48%	1.14
Flex Tech (EEPS electric and natural gas)	MWh	1.0	N/A	N/A	1.14
	MW	1.0	N/A	N/A	1.14
	MMBtu	1.0	N/A	N/A	0.9a
Industry and Process Efficiency (EEPS)	MWh	1.0	N/A	N/A	0.9a
	MW	1.0	N/A	N/A	0.9a
	MMBtu	1.0	N/A	N/A	0.9a

¹Realization rates and Net-to-Gross ratios are applied to the several individual predecessor components of this program and savings are reported at an aggregate level.

a DPS directed NTG ratio of 0.9 until evaluation of program is done.

b Net-to-Gross Ratio = (1-Freeridership) * (1+Spillover).

c The realization rates calculated only apply to the custom measure kWh and kW savings. Savings arising from pre-qualified measures have a realization rate of 1.0.

d Adjustment factors shown here do not include separate adjustments made to a subset of large energy saving projects that were separately evaluated.

Table A-2. Residential and Low-Income Program Evaluation Adjustment Factors

Program	Savings Metric	Realization Rate	Freeridership	Spillover	Net-to-Gross Ratio
New York ENERGY STAR Homes (New York Energy Smart SM)	MWh	1.10	28%	48%	1.17
	MW	2.32	28%	48%	1.17
	MMBtu	0.74	28%	48%	1.17
Home Performance with ENERGY STAR (New York Energy Smart SM)	MWh	1.00	26%	41%	1.12
	MW	1.04	26%	41%	1.12
	MMBtu	0.86	26%	41%	1.12
New York ENERGY STAR Homes (EEPS natural gas)	MMBtu	1.0	N/A	N/A	0.9a
Home Performance with ENERGY STAR (EEPS natural gas)	MMBtu	1.0	N/A	N/A	0.9a
Assisted Multifamily	MWh	0.97	27%	15%	0.84
	MW	1.26	27%	15%	0.84
	MMBtu	1.0	27%	15%	0.84
Comprehensive Energy Management	MWh	0.57	2%	18%	1.16
	MW	0.82	2%	18%	1.16
Low Income Direct Installation	MWh	1.0	N/A	N/A	0.9a
	MW	1.0	N/A	N/A	0.9a
Multifamily Performance Program (New York Energy Smart SM)	MWh	1.0	N/A	N/A	0.9a
	MW	1.0	N/A	N/A	0.9a
	MMBtu	1.0	N/A	N/A	0.9a
Market Rate Multifamily Performance (EEPS electric and natural gas)	MWh	1.0	N/A	N/A	0.9a
	MW	1.0	N/A	N/A	0.9a
	MMBtu	1.0	N/A	N/A	0.9a
Low Income Multifamily Performance (EEPS electric and natural gas)	MWh	1.0	N/A	N/A	0.9a
	MW	1.0	N/A	N/A	0.9a
	MMBtu	1.0	N/A	N/A	0.9a

Program	Savings Metric	Realization Rate	Freeridership	Spillover	Net-to-Gross Ratio
New York Energy \$mart SM Products and Marketing	MWh	N/A	N/A	N/A	N/A
	MW	N/A	N/A	N/A	N/A
	MMBtu	N/A	N/A	N/A	N/A
Keep Cool	MWh	1.0	18%	15%	0.94
	MW	1.0	18%	15%	0.94
Bulk Purchase	MWh	2.03	10%	5%	0.95
	MW	1.62	10%	5%	0.95
	MMBtu	0.71	10%	5%	0.95
CFL Expansion (EEPS electric)	MWh	Not Evaluated	N/A	N/A	1.6 b, c
	MW	Not Evaluated	N/A	N/A	1.6 b, c
Empower (New York Energy \$mart SM)	MWh	N/A d	N/A	N/A	Not Evaluated
	MW	1.0	N/A	N/A	Not Evaluated
	MMBtu	1.0	N/A	N/A	Not Evaluated
Empower (EEPS electric and natural gas)	MWh	0.81e	N/A	N/A	1.0e
	MW	1.0	N/A	N/A	1.0e
	MMBtu	1.0	N/A	N/A	0.9a

a DPS directed NTG ratio of 0.9 until evaluation of program is done.

b NTG estimation is based on sales from service territories compared with sales from one or more non-program comparison areas, sometimes selected to be demographically similar to the program area. The NTG equals the CFL sales in the program area minus CFL sales in the comparison area all divided by program-supported sales in the program area.

c The NTG estimate for the CFL Expansion Program is based on baseline conditions. As NYSERDA's current CFL Expansion Program evaluation is completed, this net-to-gross estimate will decrease.

d New York Energy \$martSM EmPower impacts include EmPower New York and Weatherization Network Initiative (WNI) programs, which have different realization rates for MWh/year.

e The last EmPower impact evaluation conducted for the New York Energy \$martSM program resulted in a 0.81 realization rate. Net-to-gross was not evaluated. Thus, the total adjustment being applied to EEPS reported savings, based on prior evaluation results, is currently a 0.81. An updated impact evaluation will be completed for the EmPower program in 2011, which is expected to result in new adjustment factors.

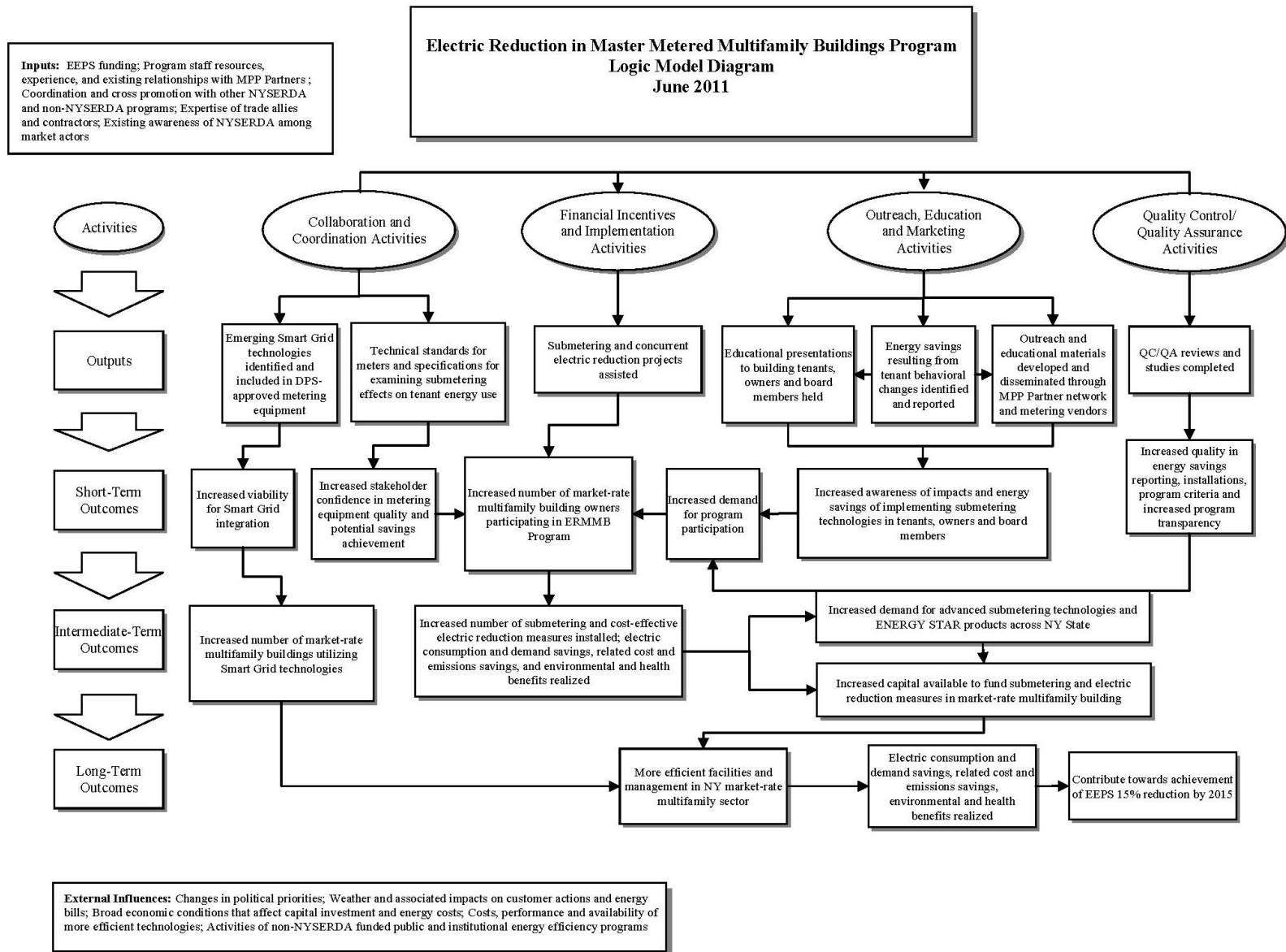
Table A-3. Research & Development Program Evaluation Adjustment Factors

Program	Savings Metric	Realization Rate	Freeridership	Spillover	Net-to-Gross Ratio
End Use Renewables	MWh	1.04	N/A	N/A	1.0
	MW	0.85	N/A	N/A	1.0
Wholesale Renewables	MWh	1.0	N/A	N/A	1.0
	MW	1.0	N/A	N/A	1.0
DG-CHP	MWh	0.9a	N/A	N/A	1.07a
	MW	0.98a	N/A	N/A	1.07a
	MMBtu	0.89a	N/A	N/A	1.07a
Demand Response and Innovative Rate Research	MW	0.50	N/A	N/A	0.95

a Adjustment factors shown here do not include separate adjustments made to a subset of large energy saving projects that were separately evaluated.

Appendix B: Logic Model

The following page contains a program theory and logic model diagram completed during the second quarter of 2011 for NYSERDA's Electric Reduction in Master Metered Buildings (ERMM) Program. The full program theory and logic model report will be available on NYSERDA's website.



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State of New York
Andrew M. Cuomo, Governor

New York's System Benefits Charge Programs Evaluation and Status Report

Quarterly Report to the Public Service Commission
Quarter Ending June 30, 2011

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