

NEW YORK PRODUCTS PROGRAM

Final Revised Logic Model Report

Prepared for

**The New York State
Energy Research and Development Authority**

Todd French
Project Manager

Prepared by

Research Into Action, Inc.

P.O. Box 12312
Portland, Oregon 97212
503 / 287-9136

Principal Investigator:
Jane S. Peters
Research Into Action

Project Staff:
Robert Scholl
Research Into Action

Project Number 9835

NOTICE

This report was prepared by Research Into Action, Inc. in the course of performing work contracted for and sponsored by the New York State Energy Research and Development Authority (hereinafter the “Sponsor”). The opinions expressed in this report do not necessarily reflect those of the Sponsor or the State of New York, and reference to any specific product, service, process, or method does not constitute an implied or expressed recommendation or endorsement of it. Further, the Sponsor and the State of New York make no warranties or representations, expressed or implied, as to the fitness for particular purpose or merchantability of any product, apparatus, or service, or the usefulness, completeness, or accuracy of any processes, methods, or other information contained, described, disclosed, or referred to in this report. The Sponsor, the State of New York, and the contractor make no representation that the use of any product, apparatus, process, method, or other information will not infringe privately owned rights and will assume no liability for any loss, injury, or damage resulting from, or occurring in connection with, the use of information contained, described, disclosed, or referred to in this report.

**The New York State
Energy Research and Development Authority**

NEW YORK PRODUCTS PROGRAM

Final Revised Logic Model Report¹

(November 21, 2013)

INTRODUCTION

This document provides:

1. A table showing a list of documents relating to New York State Energy Research and Development Authority's (NYSERDA's) New York Products Program (Products Program) used to provide insight during development of this program logic model report;²
2. A high level summary of the context of the markets within which this program operates, the other NYSERDA programs it works with to accomplish the Products Program goals, other potential complementary and/or competing programs, and a brief program description. Available market characterization information is also presented in this section, including a description of baseline conditions, technical energy and demand potential reductions, and the portion of that potential that the Products Program is expected to achieve;
3. Key program-specific elements, including the ultimate goals of the program, market barriers, targeted market actors, program inputs, activities, anticipated outputs and outcomes, and potential external influences. A description of ways program activities are expected to change the behavior of market actors is also presented in this section;
4. A program logic model diagram showing the linkages between program activities, outputs and outcomes;
5. Tables listing the key outputs and outcomes, including identification of relevant measurement indicators and potential data collection approaches to guide prioritization and development of a monitoring and evaluation plan; and
6. A list of potential researchable issues for consideration during evaluation planning.

¹ This document is an update of the GDS Associates logic model report dated February 2010.

² Previously known as the ENERGY STAR Products Program, and later as the *New York Energy SmartSM* Products Program.

TABLE OF CONTENTS

NOTICE	II
Introduction	iii
TABLE OF CONTENTS	V
SECTION 1: RELEVANT DOCUMENTS AND WEBSITES	1-1
SECTION 2: CONTEXT AND PROGRAM DESCRIPTION	2-1
2.1 Program Context	2-1
2.2 Description and Current Program.....	2-2
2.3 Market Assessment	2-4
2.3.1 Awareness and Perceived Value	2-4
2.3.2 Cost and Pricing.....	2-5
2.3.3 Market Size and Distribution Channels	2-5
2.3.4 Estimated Technical Potential.....	2-6
2.4 Overlapping Utility and NYSERDA Programs.....	2-6
2.4.1 New York State Utility, Residential, Electric and Gas, Rebate Programs	2-7
2.4.2 NYSERDA Programs	2-8
SECTION 3: KEY ELEMENTS SUMMARY	3-1
3.1 Targeted Market Actors	3-1
3.2 Ultimate Goals	3-1
3.3 Market Barriers the Program Attempts to Address	3-3
3.4 New York Products Program Implementation Approach (“Activities”)	3-5
3.5 Program Inputs and External Influences	3-7
SECTION 4: NEW YORK PRODUCTS PROGRAM LOGIC MODEL DIAGRAM	4-1
SECTION 5: OUTPUTS, OUTCOMES, AND ASSOCIATED METRICS	5-1
SECTION 6: TESTABLE HYPOTHESES (RESEARCHABLE ISSUES) FOR EVALUATION EFFORTS	6-1

LIST OF TABLES

Table 1-1.	Documents Reviewed	1-1
Table 1-2.	Websites Reviewed	1-2
Table 2-1.	Achievable Potential Savings, 2009-2015 (GWh and MW).....	2-6
Table 3-1.	Market Support Program – Goals and Achievements.....	3-1
Table 3-2.	Goals for NYSERDA’s Residential Programs	3-2
Table 3-3.	Residential Sector Upstream Market Barriers	3-3
Table 3-4.	Residential Sector Midstream Market Barriers	3-4
Table 3-5.	Residential Sector Downstream Market Barriers	3-5
Table 3-6.	Activity: Marketing and Outreach	3-6
Table 3-7.	Activity - Recruit Partners	3-6
Table 3-8.	Activity - Financial Support	3-6
Table 3-9.	Activity - Collaboration and Coordination	3-6
Table 3-10.	Activity - Training and Technical Assistance.....	3-7
Table 3-11.	Activity - Quality Assurance	3-7
Table 3-12.	New York Products Program Inputs.....	3-7
Table 3-13.	New York Products Program External Influences	3-8
Table 5-1.	Outputs from Marketing and Outreach.....	5-1
Table 5-2.	Outputs from Partner Recruiting Activities	5-1
Table 5-3.	Outputs from Financial Incentives and Assistance.....	5-1
Table 5-4.	Outputs from Collaboration and Coordination with Other Programs	5-2
Table 5-5.	Outputs from Training and Technical Assistance.....	5-2
Table 5-6.	Outputs from Quality Assurance Reviews	5-2
Table 5-7.	Short-Term Program Outcomes, Associated Indicators, and Data Sources.....	5-3
Table 5-8.	Intermediate-Term Program Outcomes, Associated Indicators, and Data Sources	5-4
Table 5-9.	Long-Term Program Outcomes, Associated Indicators, and Data Sources	5-5

LIST OF FIGURES

Figure 2-1.	NYSERDA’s Technology and Market Development Portfolio.....	2-1
Figure 2-2.	NYSERDA’S Market Development Initiative	2-2
Figure 4-1.	New York Products Program Logic Model Diagram	4-2

Section 1:

RELEVANT DOCUMENTS AND WEBSITES

The following tables identify documents and websites that were reviewed for this report:

Table 1-1. Documents Reviewed

Document
NYSERDA, Technology and Market Development Operating Plan for 2012-2016, 2 nd Revision. February 15, 2013.
<i>NYSERDA Technology & Market Development Program Semi-Annual Report through June 30, 2012, Final Report.</i> August 29, 2012.
GDS Associates, Inc. <i>New York Energy \$martSM Products Program Logic Model Report.</i> February 2010.
The Cadmus Group, <i>New York Energy \$martSM Products Program Market Characterization and Assessment Evaluation. Final Report.</i> February 2012.
<i>New York's System Benefits Charge Programs Evaluation and Status Report, Quarter Ending September 30, 2009, Final Report.</i> November 2009.
<i>NYSERDA New York Energy \$martSM Products Program. DRAFT Evaluation, Measurement and Verification Plan.</i> August 18, 2009.
ENERGY STAR [®] Products Program Implementation Strategy Overview. April 2009 Revision.
<i>New York Energy \$martSM Products Program Incentive Offering for Lighting Manufacturer Partners. Wave 18 (Effective January 1, 2009 – December 31, 2009).</i>
<i>New York Energy \$martSM Products Program Manufacturer Partnership Incentives, Guidelines & Agreement. Wave 19, Effective January 1, 2010.</i>
<i>New York Energy \$martSM Products Program Retailer Partnership Incentives, Guidelines & Agreement. Wave 19, Effective January 1, 2010.</i>
<i>New York Energy \$martSM Products Program Gold & Platinum Retailer Partnership Incentives, Guidelines & Agreement. Wave 19, Effective January 1, 2010.</i>
<i>New York Energy \$martSM Products Program, Incentives for Retail Partners, Wave 19 (Effective January 1, 2010 – December 31, 2010).</i>
<i>New York Energy \$martSM Products Program, Incentives for Gold Retail Partners, Wave 19 (Effective January 1, 2010 – December 31, 2010).</i>
<i>New York Energy \$martSM Products Program, Incentives for Platinum Retail Partners, Wave 19 (Effective January 1, 2010 – December 31, 2010).</i>
System Benefits Charge Supplemental Revision for <i>New York Energy \$martSM Programs 2008-2011 (As amended August 22, 2008 and revised March 12, 2009).</i>
<i>ENERGY STAR Products and Marketing and Stay Cool Market Characterization, Market Assessment and Causality Evaluation Update. Final Report.</i> May 2005.
<i>New York Energy \$martSM Products Program Market Characterization, Market Assessment and Causality Evaluation. Final Report.</i> June 2007.
<i>New York Energy \$martSM Products Program 2008 Annual Report.</i> April 29, 2009.
<i>New York Energy \$martSM Upstream HVAC Program. Focus Group Final Report.</i> October 7, 2009.

Document (Continued)
<i>New York Energy \$martSM</i> Products Program Display-Area Survey for Appliances Draft. Wave 11. June 10, 2008.
<i>New York Energy \$martSM</i> Products Program 2008 Participant Practices Report. Draft. February 27, 2009.
Optimal Energy, Achievable Electric Energy Efficiency in New York State. DRAFT. November 2008.

Table 1-2. Websites Reviewed

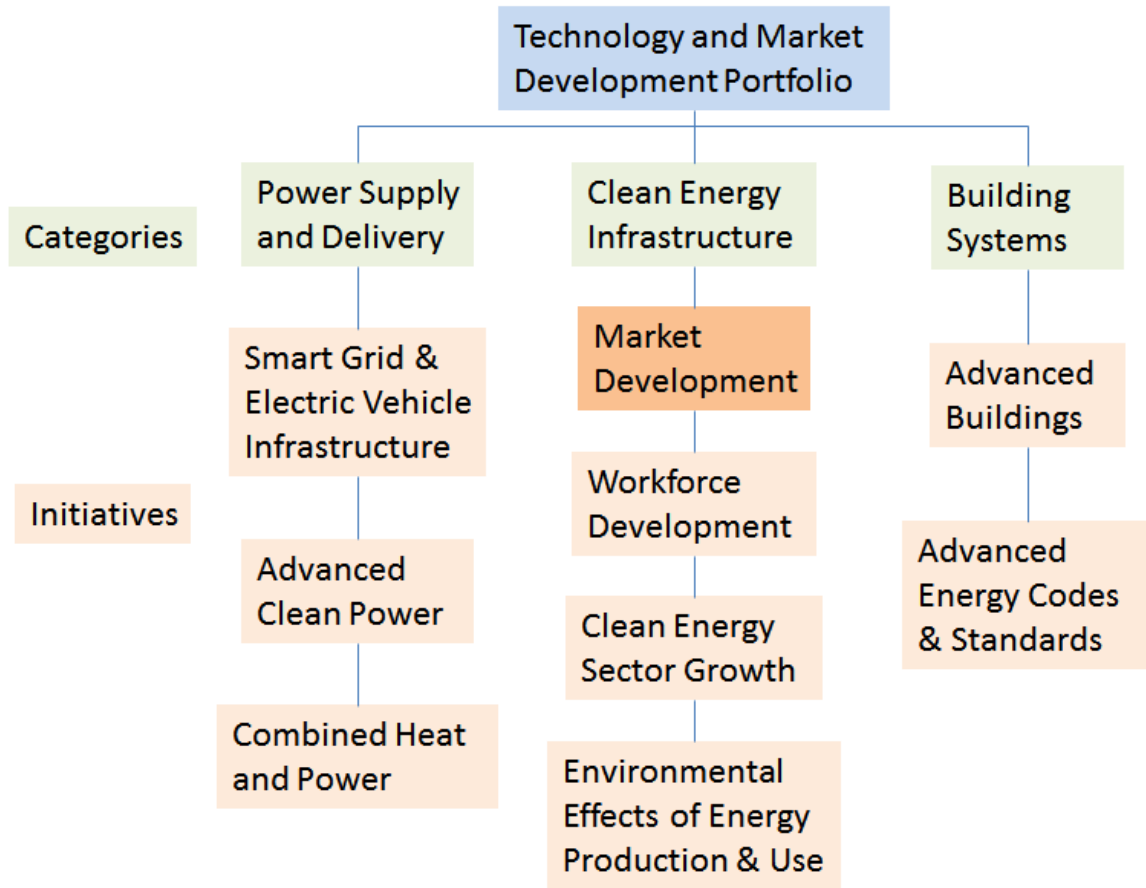
Website
Central Hudson Gas & Electric website: http://www.savingscentral.com/residential.html
Con Edison website: http://www.coned.com/energyefficiency/residential_HVAC_program.asp
DSIRE™ website, New York Incentives/Policies for Energy Efficiency http://www.dsireusa.org/incentives/index.cfm?re=0&ee=1&spv=0&st=0&srp=1&state=NY
National Fuel website: http://www.nationalfuelforthought.com/rebate-conditions3.html
New York State Electric & Gas and Rochester Gas & Electric website: http://www.nyseg.com/UsageAndSafety/usingenergywisely/eeps/default.html
NYSERDA Energy Efficient and ENERGY STAR Products website: http://www.nyserda.ny.gov/Energy-Efficiency-and-Renewable-Programs/Residential/Energy-Efficient-and-ENERGY-STAR-Products.aspx
NYSERDA New York Products Program manufacturers’ website: http://www.nyserda.ny.gov/Energy-Efficiency-and-Renewable-Programs/Residential/Retailer-Manufacturer/Manufacturer/Become-a-Manufacturing-Partner.aspx
NYSERDA New York Products Program retailers’ website: http://www.nyserda.ny.gov/Energy-Efficiency-and-Renewable-Programs/Residential/Retailer-Manufacturer/Retailer/Become-Participating-Retailer.aspx

CONTEXT AND PROGRAM DESCRIPTION

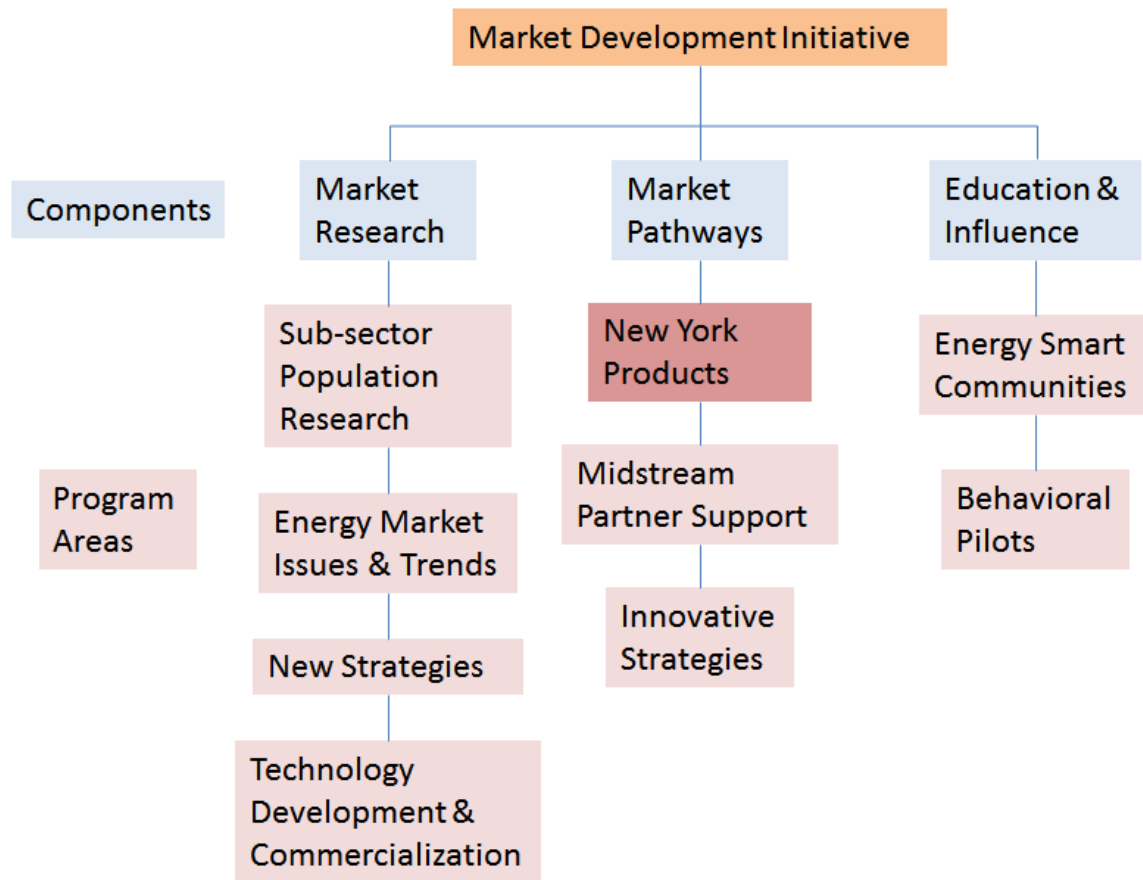
2.1 PROGRAM CONTEXT

The Products Program is part of NYSERDA’s Technology and Market Development Portfolio. That portfolio contains nine initiatives in the following three categories: Power Supply and Delivery, Building Systems, and Clean Energy Infrastructure. The Clean Energy Infrastructure category includes four of the portfolio’s nine initiatives. One of the three Clean Energy Infrastructure initiatives is Market Development (Figure 2-1).

Figure 2-1. NYSERDA’s Technology and Market Development Portfolio



Market Pathways is one of three components of the Market Development initiative. The Products Program is part of the Market Pathways component (Figure 2-2).

Figure 2-2. NYSERDA'S Market Development Initiative

2.2 DESCRIPTION AND CURRENT PROGRAM

As noted, the Products Program is an element of the Market Pathways component of NYSERDA's Market Development initiative. The two other components of the Market Development initiative are Market Research and Education to Change Behavior and Influence Choices. The Market Development initiative is intended to "help to create the foundation for long-term changes in the market for the delivery of products and services that address energy efficiency and the adoption of renewable energy technologies."³

NYSERDA launched its Products Program in August 1999.⁴ The Products Program seeks to increase the sale of energy efficient appliances; lighting; power-management strips; home electronics; and heating, ventilation, and air conditioning (HVAC) equipment. By working with manufacturers, distributors, retailers, and the public to position ENERGY STAR[®] certified and "Most Efficient" products, and higher efficiency tier Consortium for Energy Efficiency (CEE) rated products as value-added, this initiative works in the supply, midstream, and demand sides of the market.

³ NYSERDA Technology & Market Development Program Semi-Annual Report through June 30, 2012, August 29, 2012, p. 3-14.

⁴ The Program was formerly known as the *New York Energy \$martSM* Products Program, and as the ENERGY STAR Products Program.

On the supply and midstream sides, the Products Program offers product price reduction incentives to manufacturers, distributors, and retailers to increase the supply of ENERGY STAR certified and “Most Efficient” products, and higher efficiency tier CEE rated products. These incentives are ultimately passed down to the consumer through a discounted purchase price. To serve the program’s market transformation goal, the incentive and discounted purchase price are not advertised to the consumer. The Program also financially supports manufacturers’ and retailers’ efforts to advertise the benefits of those products. On the demand side, the Products Program is supported by a statewide consumer awareness campaign that promotes the benefits of ENERGY STAR certified and “Most Efficient” products, and higher efficiency tier CEE rated products.

Through written agreements, the Program establishes partnerships with retailers located in System Benefits Charge (SBC) territory, and with distributors and manufacturers located anywhere who sell products in New York State’s SBC territory. Retail partners receive sales training about ENERGY STAR certified and “Most Efficient” products, and higher efficiency tier CEE rated products, point-of-purchase (POP) and other marketing collateral, promotional opportunities, as well as co-op advertising incentives. Partners also benefit from cross marketing that occurs through other NYSERDA ENERGY STAR Programs. To participate, partners are required to provide their sales data for qualifying products to the Program. Qualifying products include both ENERGY STAR certified products and CEE rated products in tiers that are higher efficiency than ENERGY STAR certified products.⁵

A focus of the Products Program for the past few years has been to increase the availability of ENERGY STAR certified lighting products. Program financial support for lighting products, such as compact fluorescent lamps (CFLs) and light emitting diodes (LEDs), is provided by Energy Efficiency Portfolio Standard (EEPS) funding. Financial support for lighting fixtures, appliances, and household electronics comes from SBC funding. These separate funding streams reflect a difference in the fundamental purposes for supporting these products. The portion of the Program that supports CFLs, LEDs, and other energy efficient lamps is seen as resource acquisition, while the light fixture, appliance, and home electronics portion of the program is aimed at market transformation. The scope of this logic model report is limited to the SBC-funded, market-transformation portion of the Program.

Products Program account representatives provide training, deliver promotional materials and program information to retail partners, and facilitate relationships between manufacturers, distributors, and retail partners. As of 2013, there were approximately 1,350 retail storefront and 43 manufacturer partners promoting energy efficient lighting, power management, appliances and electronics. In the commercial/industrial sector, over 1,600 lighting business partners have been trained.⁶

⁵ Qualifying products include specialty CFLs (including 3-way, dimmable, A-lamp, globes and reflectors), LED lighting (including omni-directional A-Lamps, reflectors, globes, and recessed down light replacement fixtures), LED light fixtures, lighting control devices if combined with compatible LED or specialty CFL lamp promotions, advanced power strips, televisions, clothes washers, refrigerators, freezers, water heaters, high efficiency natural gas storage water heaters, room air conditioners, central air conditioning, swimming pool pumps, natural gas furnaces and boilers, geothermal heat pumps, air-source heat pumps, ductless mini-split heat pumps, and ductless mini-split air conditioners, New York Products Program Addendum A (Version 2.0), effective January 1, 2013 – December 31, 2013.

⁶ *NYSERDA Technology & Market Development Program Operating Plan for 2012-2016, Second Revision, February 15, 2013, p. 9-67.*

The Products Program customizes its customer-education delivery mechanisms for the program's different distribution channels. For example, for refrigerators, clothes washers, or televisions, which are sold in retail stores, customers can be educated at retail stores through POP displays; but for HVAC systems and pool pumps, which are typically sold by installers, installation contractors conduct consumer education. In these examples, development and strategic placement of POP materials for appliances such as refrigerators and clothes washers has been a valuable delivery mechanism, while use of POP materials is not effective for the HVAC and pool-pump markets.

NYSERDA provides ongoing promotion of ENERGY STAR certified and "Most Efficient" products, and higher efficiency tier CEE rated residential products to improve the availability and sales of energy efficient products, to increase understanding and awareness of the benefits of energy efficient products by upstream and midstream market participants (retailers, dealers, vendors, distributors, lighting designers and manufacturers), and to enhance the delivery infrastructure to respond to consumer demand for energy efficient products and services.

Ultimately, the goal of the SBC4-supported portion of the Products Program is to implement effective market transformation strategies that result in measurable improvements in the availability, promotion, and sales of ENERGY STAR certified and "Most Efficient" products, and higher efficiency tier CEE rated products to New York State households in the Program Service Territory.

2.3 MARKET ASSESSMENT

The most recent Market Characterization and Assessment (MCA) for the Products Program was completed in 2012 for the period ending December 31, 2009.⁷ During the period of that assessment, the Program was known as the *New York Energy \$martSM* Program. The MCA focused on estimating sales and corresponding energy savings for lighting, appliances, and home electronics. All data in this section, unless otherwise noted, are from that 2012 report, and describe the state of energy efficiency in New York State at that time.

According to the 2012 MCA report, the Products Program's cumulative annual energy and peak demand savings from the Program's beginning through 2009 were 770,016 MWh/year, 145.9 MW on-peak, and 427,794 MMBtu.⁸

2.3.1 Awareness and Perceived Value

Residential end-use customer awareness of the ENERGY STAR label appears to be increasing over time. In the 2007 MCA Residential End-Use Survey, 75 % of the respondents reported unaided awareness of the

⁷ The Cadmus Group Inc. and Navigant Consulting, Inc., *New York Energy \$martSM Products Program Market Characterization and Assessment Evaluation, Final Report*, February 2012.

⁸ *New York's System Benefits Charge Programs Evaluation and Status Report, Quarter Ending June 30, 2009, Final Report* August 2009. Savings for the *New York Energy \$martSM* Products Program were estimated based on market data, survey research, and deemed savings values.

label.⁹ This awareness rose to 80 % when a description was provided. In the 2012 survey, 85% of respondents were aware of the label unaided, and 89 % were aware with an aided description.¹⁰

According to the 2012 MCA, 47% of the respondents who purchased an ENERGY STAR labeled product in 2009 were influenced to do so by prior experience with ENERGY STAR products. This was a significant increase compared to the 2007 MCA, which found 34% of the respondents of that evaluation had previous experience with ENERGY STAR products.¹¹

Respondents to the residential end-use customer telephone survey also indicated the ENERGY STAR label was an influential factor in their purchase decisions. For example, 56 % of the respondents who reported purchasing an ENERGY STAR refrigerator said the ENERGY STAR label was influential in their purchase decisions.¹² In addition, 74 % of respondents who purchased an ENERGY STAR product said they would definitely (54 %) or probably (20 %) purchase an ENERGY STAR labeled product in the future.¹³

2.3.2 Cost and Pricing

Over time, the incremental cost attributable to the ENERGY STAR certification has dropped for refrigerators (from 33% in 2004 to 19% in 2006) and for clothes washers (from 93% in 2004 to 69% in 2006), although not for the other products examined. Although the incremental cost attributable to the ENERGY STAR certification may be decreasing for these products, ENERGY STAR certified units remain substantially more expensive due to the additional features they include.

In terms of rebates, 11 NYSERDA households surveyed reported purchasing an ENERGY STAR certified product with an incentive, but nearly all of the respondents (10 of 11) reported being “very, somewhat, or slightly likely” to have bought the product without an incentive. Like the 2004 findings, these results continue to indicate people are willing to purchase ENERGY STAR certified products without a rebate or incentive.

2.3.3 Market Size and Distribution Channels

Market shares for all ENERGY STAR certified appliances show a general upward trend since 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%).¹⁴

⁹ Summit Blue Consulting, LLC, *New York Energy \$martSM Products Program Market Characterization, Market Assessment and Causality Evaluation. Final Report.* June 2007.

¹⁰ The Cadmus Group Inc. and Navigant Consulting, Inc., *New York Energy \$martSM Products Program Market Characterization and Assessment Evaluation, Final Report,* February 2012. p. 4-2

¹¹ *Ibid.* pp. 4-10.

¹² *Ibid.* pp. 4-11.

¹³ *Ibid.* pp. 4-10. A note about terminology: the reports cited in this section used the phrase “ENERGY STAR labeled” when describing higher efficiency products; to be consistent with those reports and their underlying data, that phrase is retained in this section. NYSERDA and the New York Products Program now refer to analogous products as “ENERGY STAR certified,” and that phrase is used throughout the remainder of this document.

¹⁴ *Ibid.* p. ES-3.

The market share increases may be credited to the continuing efforts to encourage partners to increase their stocking and selling of ENERGY STAR certified models. Nearly all sales of ENERGY STAR certified appliances occurred through partner storefronts. The percentages of these sales by partners ranged from 95% for through-the-wall air conditioners, up to 99% for room air conditioners and clothes washers. For refrigerators, clothes washers, and dishwashers, approximately two-thirds of all units sold (64% to 66%) were sold through the national partner stores, one-quarter (22 to 25%) through the NYSERDA partners, and the remaining units through non-partner stores. For room air conditioners, however, national partner stores represented 78% of all sales, followed by non-partner (15%) and NYSERDA partner (7%) retailers. In 2009, full-scale collection of sales data was implemented involving five HVAC retail partners who had multiple locations in 2008. Sales data were collected for HVAC equipment, including furnaces, boilers, water heaters, and programmable thermostats, and show monthly market share for each of these products ranged between 40% and 51% during that year.¹⁵

2.3.4 Estimated Technical Potential

Table 2-1 shows the achievable potential energy savings estimated within New York State's residential Retail Products sector (excluding Long Island). These numbers come from Optimal Energy's assessment of technical potential savings in the state from 2009-2015.¹⁶

Table 2-1. Achievable Potential Savings, 2009-2015 (GWh and MW)

Sector	2009	2010	2011	2012	2013	2014	2015
Residential Retail Products (GWh)	459	1,065	1,827	2,312	2,795	3,315	3,675
Retail Products (MW)	63	145	246	314	380	450	500

2.4 OVERLAPPING UTILITY AND NYSERDA PROGRAMS

In addition to NYSERDA's Products Program, there are a number of related programs being implemented in New York State. These programs are summarized below. They are included as External Influences in Section 4.5 of this report and are identified in the program logic diagram as factors with the potential to assist or to hinder achievement of NYSERDA's program goals.

New York State utility programs typically offer rebates directly to customers and, therefore, most directly influence the demand side of the market. Before approving an incentive promotion with a partner, the Products Program Team confirms that no utility rebates are being offered on that product to avoid cases of double-dipping. A Products Program incentive would not be allowed if there were an incentive available from another source for that product. The issues of double-dipping, attribution of savings, and determination of the Program's market effects are complicated by the ongoing evolution of overlapping utility programs. As utilities in New York State continue to add measures to their programs, and to change efficiency and incentive levels for the products their programs support, separating Products Program market effects and other outcomes from outcomes generated by utility programs becomes increasingly complex.

¹⁵ *New York Energy \$martSM Products Program 2008 Annual Report*, April 29, 2009.

¹⁶ Optimal Energy, *Achievable Electric Energy Efficiency in New York State DRAFT*, November 2008.

2.4.1 New York State Utility, Residential, Electric and Gas, Rebate Programs¹⁷

Central Hudson Gas and Electric¹⁸

The Home Energy Savings Central Program offers rebates between \$25 and \$600 to residential electric customers who upgrade their HVAC systems with specific types of energy efficient equipment. Rebated measures include efficient central air conditioners, central air-source heat pumps, electric heat-pump water heaters, furnace blower fans, programmable thermostats, and duct and air sealing (with blower door and duct blaster testing). Rebates for the following types of natural gas equipment are available as well: natural gas furnaces, natural gas boilers, boiler reset controls, steam boilers, and indirect water heaters.

Consolidated Edison¹⁹

Con Edison offers the Residential HVAC Electric Rebate Program. Through this program, incentives are available for energy efficient heating and cooling equipment. Service addresses that have one to four residential dwelling units may participate in the program. Eligible measures and equipment include central air conditioning units, heat pumps, water heaters, weatherization measures, and thermostats. All equipment must be installed by a participating contractor and installations may be inspected before incentive payments. The program also offers free, remotely controlled, smart thermostats and \$50 “rewards” to remove old freezers and second refrigerators.

National Fuel²⁰

National Fuel offers rebates to its residential customers in western New York State for the installation of certain gas-fueled energy efficiency measures. Incentives from \$25 to \$400 are available for furnaces, steam and hot water boilers, storage and tankless water heaters, and programmable thermostats that meet the program's minimum efficiency requirements. To be eligible for a rebate, equipment must be installed on or after January 1, 2013, in a western New York residence served by National Fuel.

National Grid²¹

National Grid offers a number of programs to encourage residential energy efficiency. National Grid's High Efficiency Heating Rebates are offered to residential gas-heating customers in the New York City metro area. Eligible technologies include high efficiency heating equipment (furnaces and boilers), indirect water heaters, seven-day programmable thermostats, air-sealing measures, heating-duct insulation, windows, and building insulation. Rebates of up to \$3,000 are available depending on equipment type. National Grid residential electric and gas customers in upstate New York are eligible for a variety of equipment rebates to help them save energy in their homes as well.

¹⁷ DSIRE website, New York Incentives/Policies for Energy Efficiency
<http://www.dsireusa.org/incentives/index.cfm?re=0&ee=1&spv=0&st=0&srp=1&state=NY>

¹⁸ Central Hudson gas and Electric website: <http://www.savingscentral.com>

¹⁹ Con Edison website: <http://www.coned.com/energyefficiency/default.asp>

²⁰ National Fuel website: <http://www.nationalfuelgas.com/>

²¹ National Grid website: <https://www1.nationalgridus.com/MyEnergyEfficiencyServices>

New York State Electric & Gas (NYSEG)²² and Rochester Gas & Electric (RG&E)²³

NYSEG and RG&E offer identical programs to their residential customers. For electric customers they offer rebates for recycling refrigerators. To their residential natural-gas customers, the two utilities offer rebates for installing energy efficient natural gas equipment. Qualifying gas equipment includes furnaces, boilers, boiler reset controls, indirect water heaters, and programmable thermostats.

Orange and Rockland Utilities²⁴

Orange and Rockland offers a program that is similar to that of the two preceding utilities, with the addition of rebates for duct and air sealing measures available to the Orange and Rockland's gas customers.

2.4.2 NYSERDA Programs

In addition to programs offered by utilities, some of NYSERDA's own programs can interact with the Products Program as well. These other NYSERDA programs include Home Performance with ENERGY STAR, New York ENERGY STAR Homes, EmPower New York, and renewable energy opportunities, such as those available with solar thermal or geothermal heating and cooling technologies. Since these interactions are within the control of NYSERDA, they are listed as Inputs in Section 4.5 of this report.

²² New York State Electric & Gas and Rochester Gas & Electric website:
<http://www.nyseg.com/UsageAndSafety/usingenergywisely/eeps/default.html>

²³ Rochester Gas & Electric website:
<http://www.nyseg.com/UsageAndSafety/usingenergywisely/eeps/default.html>

²⁴ Orange and Rockland Utilities, Inc. website <http://www.oru.com/index.html>

Section 3:

KEY ELEMENTS SUMMARY

The following summary of key elements of the Products Program is based on staff interviews and a review of relevant NYSERDA documents.

3.1 TARGETED MARKET ACTORS

The Products Program specifically targets retailers, distributors, and manufacturers as program partners, and develops marketing materials addressed to the residential end-users who may purchase the high efficiency equipment. Electric utilities are among the market actors who are not targeted by the Program.

3.2 ULTIMATE GOALS

Fundamentally, the goal of NYSERDA's Products Program is market transformation. More specifically, the Program has three primary goals as steps to achieve that fundamental goal:

1. Increase the supply of products through partnerships with retailers, manufacturers, and distributors,
2. Create demand for ENERGY STAR certified and "Most Efficient" products, and higher efficiency tier CEE rated products through increased consumer awareness and understanding of the ENERGY STAR certification, and
3. Support other NYSERDA residential-sector programs through increased coordination and leveraging opportunities

The Products Program budget for January 1, 2009, through June 30, 2011, comprised approximately \$10.0 million in SBC funding. Table 3-1 shows NYSERDA's broader Market Support Program's four long-term, non-energy related goals and progress. This broader program exceeded all four of its goals.

Table 3-1. Market Support Program – Goals and Achievements²⁵

Activity	Program Goals (July 1, 2006 through June 30, 2011)	Achieved July 1, 2006, through December 31, 2009	% of Goal Achieved
New manufacturing partners signed up	20	27	>100%
New retail partners (independent) signed up	100	241	>100%
New retail partners (big box, mass merchandisers) signed up	6	7	>100%
ENERGY STAR market share increase on targeted products (on average, across products)	25%	28%	>100%

Additional non-energy goals specific to the Products Program were also achieved in 2008, including 281 training sessions held (reflecting 140% of the year-end goal of 200 training sessions), and 316 solicitations conducted (reflecting 105% of the internal goal of 300 solicitations). These substantially intensified recruiting efforts reflect a strong emphasis on signing new lighting partners, resulting in an increase of 299 new storefronts with ENERGY STAR certified lighting products in the New York State market in 2008. In

²⁵ *New York's System Benefits Charge Programs Evaluation and Status Report, Quarter Ending June 30, 2009, Final Report, August 2009. Section 4.5 - Market Support Program, p. 4-21.*

the same year, more than \$2.6 million in incentives were awarded to support both standard and special promotions for all partner types to help further the Products Program’s goals.²⁶

In addition, NYSERDA conducted a topical focus group on September 15, 2009, with 30 experts and industry stakeholders to discuss market conditions, growth opportunities, sales barriers, and suggestions for initiatives to accomplish the goal of enhancing the highly efficient HVAC equipment market.²⁷

As of June 30, 2012, the Products Program had 859 retail and 47 manufacturer partners.²⁸ Through the partner network, NYSERDA has approved more than 55 special promotions for a total of \$564,484 in product buy-downs. These promotions are expected to save more than 6.9 million kWh and 23,810 MMBtus annually.²⁹

The Products Program is an important part of NYSERDA’s Market Pathways component, which works across the supply chain to promote stocking, specification, sales, installation, maintenance, and use of energy efficient products and strategies. Through Market Pathways, NYSERDA provides tools, business strategies, and business and marketing materials to manufacturers, suppliers, distributors, retailers, service providers, designers, specifiers, contractors, and builders. The market infrastructure and demand-side goals for the broader residential portfolio are listed in Table 3-2.³⁰

Table 3-2. Goals for NYSERDA’s Residential Programs

Supply-Side and Market Infrastructure/Policy	Demand-Side
<p>Increased awareness, knowledge, willingness, and ability to make technically proven and economically viable residential energy efficiency, renewable energy, and demand response products and services available.</p> <p>Increased number of firms (contractors, homebuilders, equipment suppliers, etc.) with experience and confidence in delivering residential energy efficiency, renewable energy, and demand response products and services.</p> <p>Improved energy and environmental performance of existing and new homes that incorporate green design practices, energy efficiency, and alternative energy technologies and operations</p> <p>Larger, more robust, and sustainable market for residential energy efficiency, renewable energy, and demand response products and services.</p> <p>More efficient residential building stock and greater availability of new efficient homes and multifamily buildings.</p>	<p>Projects demonstrate persistent energy savings, reduced energy costs, and other benefits to end-users.</p> <p>Customers have reliable information on which to base their energy-related decisions.</p> <p>Consumers have Increased awareness of the benefits of energy efficiency and alternative energy options, and increased understanding of the environmental impacts of energy choices and emerging energy options.</p> <p>Customers have confidence in energy-savings estimates and value the energy efficiency and green building features of their homes and associated purchases.</p> <p>Customers have improved access to residential energy efficiency, renewable energy, and demand response (including real time pricing/load management) products and service options.</p>

²⁶ *New York Energy \$martSM Products Program 2008 Annual Report*. April 29, 2009.

²⁷ *New York Energy \$martSM Upstream HVAC Program, Focus Group Final Report*, October 7, 2009.

²⁸ *NYSERDA Technology & Market Development Program, Semi-Annual Report through June 30, 2012*, August 29, 2012, pp. 3-16.

²⁹ *Ibid.* pp. 2-3.

³⁰ GDS Associates, *New York Energy \$martSM Residential Energy Affordability Programs Sector-Level Logic Program Logic - 2007 Update*. September 28, 2007.

3.3 MARKET BARRIERS THE PROGRAM ATTEMPTS TO ADDRESS

The Products Program aims to address barriers that exist throughout the residential energy-using equipment markets. The Program operates within the larger NYSERDA residential programs portfolio, which is designed to create market opportunities and maximize benefits for participants and the broader New York State marketplace. To facilitate participation, the Products Program works to overcome a variety of market barriers and issues, including:

- High incremental or first costs
- Lack of awareness, knowledge, and understanding of energy efficiency features
- Uncertainty about savings from the products or measures
- Volatility and risk related to energy prices and business environment
- Lack of time and competing priorities

Barriers to adopting residential energy efficient equipment can be broken down into three general, market-sector categories: (1) barriers affecting the supply side, (2) barriers affecting the mid-market/infrastructure, and (3) barriers affecting the demand-side. Supply-side barriers are defined as obstacles that delay or impede the delivery and availability of energy efficient products or services into the marketplace. Mid-market/infrastructure barriers are defined as obstacles that impede the willingness or ability to provide or deliver available products or services. Demand-side barriers are defined as barriers that deter customer demand for a product or service, such as lack of awareness of energy efficiency options and benefits.

Table 3-3 lists barriers to the overarching residential sector for supply-side and policymaking market actors. The order in which the barriers are presented does not reflect significance or priority; the numbers are for reference purposes only. Specific barriers targeted by NYSERDA’s Products Program are noted with an asterisk. Table 3-4 presents the same information for midstream market actors, and Table 3-5 does the same for downstream market actors, that is, for end-users in the demand-side of the market.

Table 3-3. Residential Sector Upstream Market Barriers

Barriers	Market Actors
*S1 – Lack of availability of some products and lack of availability of high efficiency products at reasonable prices	Manufacturers, distributors, and suppliers of residential energy-using equipment Codes and standards and policy makers Utilities and load serving entities, New York Independent System Operator
*S2 – Lack of information and awareness among upstream market actors regarding the benefits of energy efficient homes, efficient equipment, renewable energy, and load management products and services	
*S3 – Perceptions of lack of demand for energy efficiency and renewable options	
*S4 – Concern regarding inferior or inconsistent product quality	
*S5 – Lack of replacement equipment and new energy technologies	
*S6 – Confusion from increased availability of efficiency and demand response assistance and resources	

* Indicates a barrier directly addressed by the Products Program.

Table 3-4. Residential Sector Midstream Market Barriers

Barriers	Market Actors
*M1 – Perception of risk with stocking or installing efficient appliances when customer demand or product quality has yet to be proven (uncertainty about product performance and profit potential)	Retailers and contractors
M2 – Limited experience with energy efficient homes and equipment, renewable energy products, load management equipment, and energy monitoring equipment	Builders
M3 – Limited availability of subcontractors with training and experience of efficient equipment and building techniques and their optimization	Distributors
*M4 – Inadequate marketing and promotional materials for efficient products	Home Energy Rating System (HERS) providers
*M5 – Undervaluing energy efficiency and sustainability and their impact on economic development, denial of climate change, and low sense of urgency regarding adoption of energy efficient technologies	HERS raters
M6 – Contractors unwilling to learn and conduct services outside of their specific trade	Subcontractors and building trades
M7 – Lack of available real-time pricing and other load management options	Teachers and teacher unions
*M8 – Lack of energy efficiency training opportunities	School districts
M9 – Lack of time and income to attend training and certification courses, lack of school time and teacher time to incorporate into lesson plans, curriculum, and classroom activities	Community leadership
*M10 – Lack of effective informational, educational, and promotional energy efficiency and renewable energy material, tools, and curricula	Multifamily property managers and building owners
*M11 – Split incentives for rental units	Lenders and financial institutions
M12 – Concern from lenders and owners regarding ability to obtain a return on their investment	
M13 – Rules and procedures by housing regulators (<i>e.g.</i> , U.S. Department of Housing and Urban Development, New York State Homes and Community Renewal) that hinder design and installation of improvements	
*M14 – Diverse efficiency programs and organizations with which market actors can partner	
*M15 – Market lacks experience in determining the best way to create a profitable long-term business model	

* Indicates barrier directly addressed by the Products Program.

Table 3-5. Residential Sector Downstream Market Barriers

Barriers	Market Actors
*D1 – Lack of awareness and understanding of energy efficiency, renewable energy, and load management features, products, and services, including how to obtain healthy air quality in a new home and energy conservation	Residential customers, including existing and potential new home owners
D2 – Energy supply, siting of new power generation facilities and transmission lines, and life-cycle costing	Multifamily building owners
*D3 – Information costs associated with understanding these features, benefits, and concepts	
*D4 – Higher incremental or first costs and competing needs for capital	Students
*D5 – Lack of reliable information on energy efficient practices in existing homes	
*D6 – Resistance to new and/or innovative technologies	Communities
*D7 – Performance uncertainties	
*D8 – Split incentives for rental units	Building owners
D9 – Lack of available real-time pricing and other load management options	
D10 – Language barriers (English not primary language)	Tenants
D11 – Lack of knowledge and experience in managing varying prices	
D12 – Lack of policies amenable to energy efficiency and renewables	
D13 – Resistance to changing contractors or making new demands on contractors	
*D14 – Confusion regarding how to qualify or take advantage of opportunities associated with state and federal tax incentives	
D15 – Lack of trust in residential contractors and salespersons	
*D16 – Confusion, information costs, and lack of trust due to increased efficiency promotional efforts from multiple sources, arising in particular from information about the same or similar products provided by overlapping utility and NYSERDA programs	

* Indicates barrier directly addressed by the Products Program.

Barriers to the adoption of specific technologies can vary by technology. For example, ENERGY STAR certified clothes washers clean as well as, or better than, standard clothes washers while being less harsh on fabrics. In such situations, consumers’ needs are completely met. In contrast, appearance and noise are often primary considerations for dishwashers and refrigerators. Obtaining an ENERGY STAR certified product to meet all consumers’ needs can be more difficult for those products.

3.4 NEW YORK PRODUCTS PROGRAM IMPLEMENTATION APPROACH (“ACTIVITIES”)

NYSERDA’s Products Program includes a number of activities that produce outputs intended to lead to short- and longer-term outcomes, which are the Program’s goals. These activities can be grouped into six main areas as follows:

1. Marketing and outreach;
2. Recruiting partners;
3. Financial assistance;
4. Collaboration and coordination;

- 5. Training and technical assistance; and
- 6. Quality assurance.

An overview of the effort envisioned for each of these activity areas is provided in Table 3-6 through Table 3-11.

Table 3-6. Activity: Marketing and Outreach

Market Target: Demand-Side
<p>Develop and implement promotional campaigns for ENERGY STAR certified household appliances, including use of television, print, social media, and internet ads, along with an appropriate public relations campaign</p> <p>Develop brochures and advertising</p> <p>Conduct periodic special on-line promotional efforts for specific product types and sales channels, or to initiate activity and interest in a product</p> <p>Develop and implement campaigns that may leverage national and regional campaigns</p> <p>Maintain and Redesign the nyscrda.ny.gov/residential website to be all-inclusive, including CFL education</p> <p>Provide consumers with an on-line inventory of home products and of recommendations about improving home energy efficiency</p> <p>Provide program and partner information to consumers</p> <p>Provide participation information to potential partners</p> <p>Develop and implement on-line marketing campaigns to drive consumers to the nyscrda.ny.gov/residential website</p>

Table 3-7. Activity - Recruit Partners

Market Target: Supply-side and Market Infrastructure/Midstream
<p>Recruit retailers, manufacturers, and distributors through written agreements</p> <p>Partner with retailers to promote ENERGY STAR certified and other high efficiency products</p> <p>Work with manufacturers and distributors to increase availability of energy efficient products throughout New York State</p>

Table 3-8. Activity - Financial Support

Market Target: Market Infrastructure
<p>Provide incentives for co-operative advertising and promotions</p> <p>Develop price-reduction incentives for manufacturer, distributor, and retail partners</p>

Table 3-9. Activity - Collaboration and Coordination

Market Target: Market Infrastructure
<p>Collaborate with other NYSERDA programs, such as New York ENERGY STAR Homes, Home Performance with ENERGY STAR, and the Point of Sale Lighting Program to cross-promote ENERGY STAR certified and high efficiency products</p> <p>Coordinate with the National ENERGY STAR Programs to leverage materials and promotional events</p> <p>Perform market research, and leverage regional and national initiatives</p> <p>Coordinate with New York State utility and other nearby and regional programs, such as Northeast Energy Efficiency Partnerships, Consortium for Energy Efficiency, Efficiency Vermont, Cape Light Compact, and New Jersey Clean Energy</p> <p>Collaborate with other programs for promotions of specific product types and sales channels, or to initiate activity and interest in a product</p>

Table 3-10. Activity - Training and Technical Assistance

Market Target: Market Infrastructure
<p>Work with field representatives to provide training, program updates, and POP materials, and to label products in stores</p> <p>Develop on-line and in-store sales training for distributors and retailers on high efficiency up-sell opportunities and for upstream partners to encourage comprehensive heating and cooling load calculations for proper sizing of new equipment</p>

Table 3-11. Activity - Quality Assurance

Market Target: Market Infrastructure
<p>Review partner’s monthly sales data and documentation of sales-staff training, receipt and use of POP displays, and use of ENERGY STAR certification</p> <p>Work with field representatives to asses training, use of POP materials, and product labeling</p> <p>Maintain these program data for use in program monitoring, evaluation, and reporting</p> <p>Conduct market research, including focus groups, to meet program needs and understand the market for high efficiency products</p>

3.5 PROGRAM INPUTS AND EXTERNAL INFLUENCES

The ability of NYSERDA’s Products Program to produce the desired outputs and to achieve its expected outcomes (Section 5) is related to the level and effectiveness of NYSERDA’s inputs to the Program. The Program’s effectiveness is also shaped by external influences that can help or hinder the development of the outcomes. NYSERDA’s inputs to the Program are shown in Table 3-12.

Table 3-12. New York Products Program Inputs

Program Inputs
<p>SBC Funding</p> <p>NYSERDA’s program staff resources and experience implementing programs</p> <ul style="list-style-type: none"> • Staff experience and expertise managing the <i>New York Products Program</i> and similar predecessor programs • NYSERDA’s and program staff’s market knowledge <p>Expertise of Program implementation contractor and Program partners</p> <p>NYSERDA’s credibility and relationships with stakeholders, including partners, policymakers, and other market actors</p>

External influences that can aid or hinder the development of anticipated Program outcomes are shown in Table 3-13.

Table 3-13. New York Products Program External Influences

External Influences
<p>Changes in political priorities:</p> <ul style="list-style-type: none"> • Perceptions of energy and global climate change issues • Codes and standards • Federal energy policies, including energy related tax credits and the Federal Energy Policy Act of 2005 • State and local actions and requirements <p>Weather and associated impacts on customer actions and energy bills</p> <p>Broad economic conditions that affect capital investment and energy costs:</p> <ul style="list-style-type: none"> • Energy prices (changes in fuel and energy prices) • Utility rate structures • Perceptions of the value of “green” buildings and Leadership in Energy and Environmental Design (LEED) • Demand-side customers’ competing priorities • Activities of public and institutional purchasers and projects <p>Cost, performance, and availability of efficient technologies:</p> <ul style="list-style-type: none"> • Emerging technologies • Production economies of scale <p>Non-NYSERDA energy efficiency programs and funding:</p> <ul style="list-style-type: none"> • National and State ENERGY STAR and Appliance Rebate Programs • New York area utilities’ programs • Federal and state tax credits

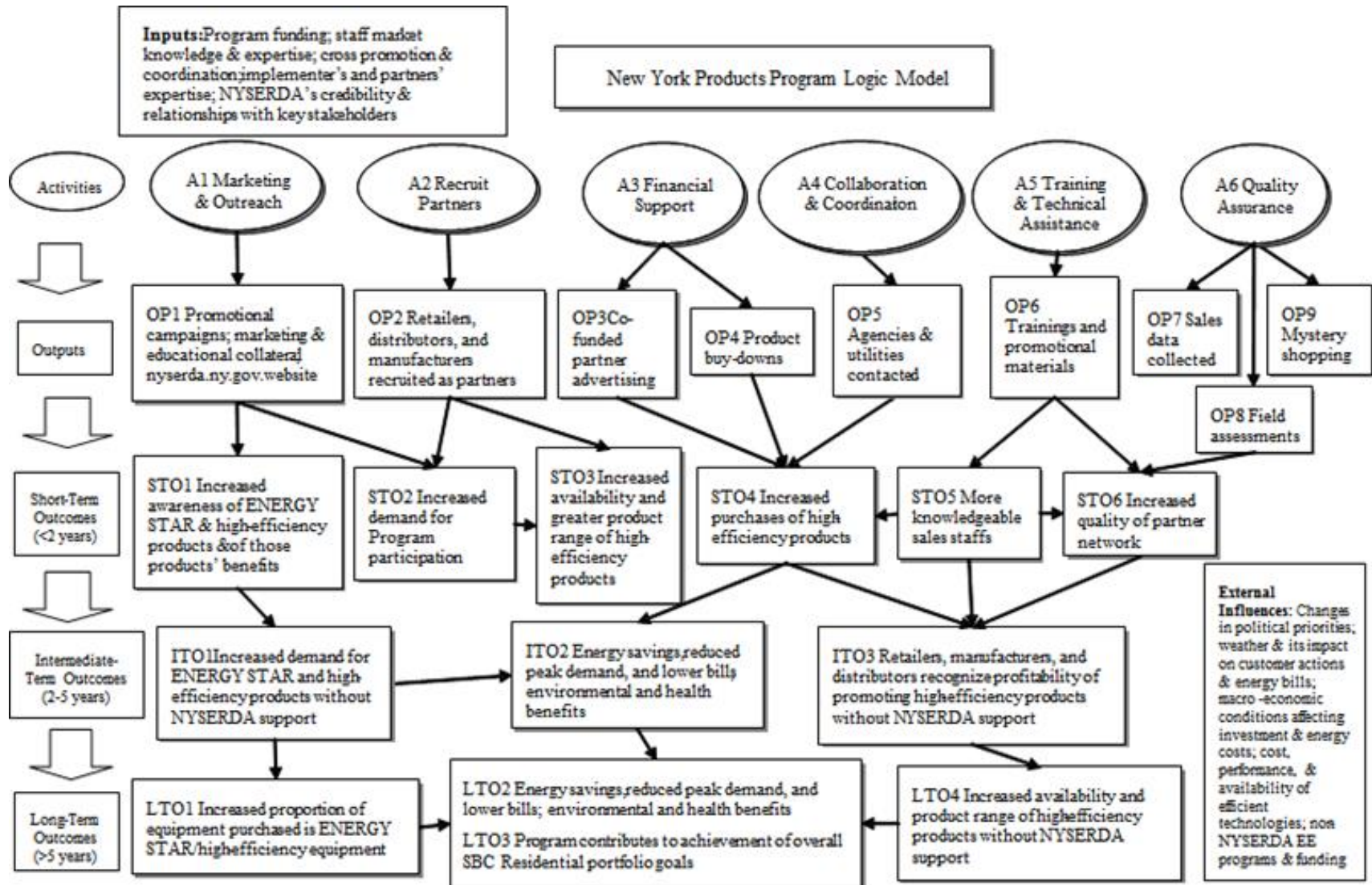
Specific outputs of Program activities and anticipated outcomes for the Products Program are shown in the logic model diagram in Section 4 below. More information on these outputs, outcomes, and associated measurement indicators can be found in tables in Section 5 following the diagram.

Section 4:

NEW YORK PRODUCTS PROGRAM LOGIC MODEL DIAGRAM

The following page contains a diagrammatic representation of the Products Program logic model. The diagram identifies Program inputs and external influences, and shows the linkages between activities, outputs, and outcomes. The logic-model diagram presented here is at a higher level than the tables in this report, aggregating some of the outcomes for easier readability. Evaluation research should use the more detailed tables in the following pages, in addition to the diagram, to examine the theoretical linkages and the Program's effectiveness in achieving the anticipated outcomes.

Figure 4-1. New York Products Program Logic Model Diagram



OUTPUTS, OUTCOMES, AND ASSOCIATED METRICS

It is important to distinguish between outputs and outcomes. For the purposes of this document, outputs are defined as direct, measurable results of specific program activities. These results are typically easily identified and quantified, often by reviewing program records.

Table 5-1 through Table 5-4 list outputs from the Program’s logic model activities, and show measurement indicators, or metrics, associated with each output. To obtain these metrics for the purpose of analysis, proposed data sources or collection approaches are also presented. When required, the need for baseline data is also noted.

Table 5-1. Outputs from Marketing and Outreach

Outputs	Indicators	Data Sources& Collection Methods
OP1 Promotional campaigns; marketing and educational collateral; nyscrda.ny.gov/residential website	Number and types of promotional activities Number and types marketing and educational collateral developed Number of end-user impressions from marketing collateral by type Number of website hits, downloads, and video views; time spent on site	Review of Program website, files, documents, and website monitoring information Interviews with Program and implementation staff Review of media buys

Table 5-2. Outputs from Partner Recruiting Activities

Outputs	Indicators	Data Sources& Collection Methods
OP2 Retailers, manufacturers, and distributors recruited as partners	Numbers and types of partners	Review of Program files and documents Interviews with Program and implementation staff

Table 5-3. Outputs from Financial Incentives and Assistance

Outputs	Indicators	Data Sources& Collection Methods
OP3 Co-funded partner advertising	Dollar value and number of co-op advertising efforts	Review of Program files and documents
OP4 Product price reduction incentives	Dollar value and number of price reduction incentives	Interviews with Program and implementation staff Surveys of partners

Table 5-4. Outputs from Collaboration and Coordination with Other Programs

Outputs	Indicators	Data Sources& Collection Methods
OP5 Public agencies and utilities contacted	Number and types of agencies and utilities contacted Number of collaborative marketing and outreach efforts with other programs	Review of Program files and documents Interviews with Program and implementation staff

Table 5-5. Outputs from Training and Technical Assistance

Outputs	Indicators	Data Sources& Collection Methods
OP6 On-line and in-store training and promotional/POP materials	Numbers and types of training Number of partner employees trained Number and types of partners given marketing collateral Number and types of other assistance provided	Review of Program files and documents Interviews with Program and implementation staff Surveys of partners Mystery shopping

Table 5-6. Outputs from Quality Assurance Reviews

Outputs	Indicators	Data Sources& Collection Methods
OP7 Sales data collected	Number of stores providing sales data	Review of Program files and documents
OP8 Field assessments of store training, POP use, and marketing efforts	Number of field assessments of store training, POP use, and marketing efforts	Interviews with Program and implementation staff Surveys of distributor and retail partners
OP9 Mystery shopping	Numbers of mystery shoppers and mystery shopping events	

Outcomes are the expected market effects of a program, and are the less certain, theoretical results of program activities. Outcomes result from the enumerated outputs that are produced by program activities, and vary depending on the time period being assessed. On a continuum, program activities lead to immediate outputs that, if successful, collectively effectuate short-term, intermediate-term, and long-term program outcomes. The amount of time for the occurrence of outcomes varies by program. For the Products Program, short-term outcomes (Table 5-7) are those that will appear within two years, while intermediate-term outcomes (Table 5-8) are expected to occur in two years to five years, and long-term outcomes (Table 5-9) are program effects that will occur beyond five years. Program spillover can occur at any point, but is typically most evident in the long term.

Items in these tables should be prioritized and considered as potential areas for investigation as part of formal program evaluation plans. A focus on the Program’s fundamental goal of market transformation will facilitate that prioritization. To that end, outcomes that are market effects reflecting market transformation are shaded in the following tables.

Table 5-7. Short-Term Program Outcomes, Associated Indicators, and Data Sources

Outcomes	Indicators	Data Sources & Collection Methods
<p>STO1 Increased awareness of ENERGY STAR certification, ENERGY STAR “Most Efficient” designation, and higher efficiency tier CEE rated products, and greater understanding of the benefits of those products</p>	<p>Awareness, understanding, attitudes, and intentions regarding ENERGY STAR certification, ENERGY STAR “Most Efficient” designation, and higher efficiency tier CEE rated products</p>	<p>Market actor surveys Store intercept surveys</p>
<p>STO2 Increased demand for Program participation</p>	<p>Number and types of partners Number and types of products supported</p>	<p>Review of Program files and documents Interviews with Program and implementation staff Surveys of distributors and retailers</p>
<p>STO3 Increased availability, and greater product range, of high efficiency products</p>	<p>Number and types of partners Number and types of products supported Number and types of efficient products in all retail stores</p>	<p>Review of Program files and documents Interviews with Program and implementation staff Surveys of manufacturers, distributors, and retailers</p>
<p>STO4 Increased purchases of high efficiency products</p>	<p>Number and types of efficient products sold by all retail stores</p>	<p>Review of Home Performance with ENERGY STAR and Products Program files and documents Sales data Surveys of distributors, retailers, and customers Market transformation evaluation for market penetration and program-induced changes</p>
<p>STO5 More knowledgeable sales staffs</p>	<p>Sales staff’s awareness and understanding of the benefits of high efficiency products, and of effective sales techniques</p>	<p>Surveys of retail partners Mystery shopping Store intercept surveys</p>
<p>STO6 Increased quality of partner network</p>	<p>Partners more aware of, and able to articulate the benefits of, high efficiency products Partners mount more effective product promotions</p>	<p>Review of Program files and documents Interviews with Program and implementation staff Sales data Surveys of partners Mystery shopping Store intercept surveys</p>

Table 5-8. Intermediate-Term Program Outcomes, Associated Indicators, and Data Sources

Outcomes	Indicators	Data Sources & Collection Methods
<p>ITO1 Increased demand for ENERGY STAR certified and “Most Efficient” products, and higher efficiency tier CEE rated products without NYSERDA support</p>	<p>Consumers perceive value of ENERGY STAR certified and “Most Efficient” products, and higher efficiency tier CEE rated products</p> <p>Consumers’ intent to purchase ENERGY STAR certified and “Most Efficient” products, and higher efficiency tier CEE rated products</p> <p>“ENERGY STAR,” “Most Efficient,” and “high efficiency” are important search criteria for consumers seeking home products</p> <p>Retailers, manufacturers, distributors and contractors, supply, promote, and sell ENERGY STAR certified and “Most Efficient” products, and higher efficiency tier CEE rated products without NYSERDA support</p>	<p>Store intercept surveys</p> <p>Surveys of distributors, retailers, installers, and customers</p> <p>Market transformation evaluation for market penetration and program-induced changes</p>
<p>ITO2 Energy savings, reduced peak demand, and lower bills; environmental and health benefits</p>	<p>Numbers and types of ENERGY STAR certified and “Most Efficient” products, and higher efficiency tier CEE rated products purchased and installed</p> <p>Amount and dollar value of kW, kWh, and fossil fuel savings, and subsequent emission reductions</p> <p>Calculated bill reductions</p>	<p>Non-energy impact evaluation for health effects (customer surveys)</p> <p>Impact evaluation for reliable estimates of kW, kWh savings</p> <p>Billing analyses</p>
<p>ITO3 Retailers, manufacturers, and distributors recognize profitability of promoting ENERGY STAR certified and “Most Efficient” products, and higher efficiency tier CEE rated products without NYSERDA support</p>	<p>Number of retailers, manufacturers, and distributors supplying, promoting, and selling ENERGY STAR certified and “Most Efficient” products, and higher efficiency tier CEE rated products without NYSERDA support</p>	<p>Surveys of manufacturers, distributors, retailers, and customers</p> <p>Mystery shopping</p> <p>Market transformation evaluation for market penetration and program-induced changes</p>

Table 5-9. Long-Term Program Outcomes, Associated Indicators, and Data Sources

Outcomes	Indicators	Data Sources & Collection Methods
<p>LTO1 Increased proportion of equipment purchased is ENERGY STAR certified and “Most Efficient” products, and higher efficiency tier CEE rated products</p>	<p>Number and types of ENERGY STAR certified and “Most Efficient” products, and higher efficiency tier CEE rated products sold by retail stores</p>	<p>Review of Home Performance with ENERGY STAR and Products Program files and documents</p> <p>Sales data</p> <p>Surveys of distributors, retailers, and customers</p> <p>Market transformation evaluation for market penetration and program-induced changes</p>
<p>LTO2 Energy savings, reduced peak demand, and lower bills; environmental and health benefits</p>	<p>Numbers and types of ENERGY STAR certified and “Most Efficient” products, and higher efficiency tier CEE rated products purchased and installed</p> <p>Amount and dollar value of kW, kWh, fossil fuel savings, and subsequent emission reductions</p> <p>Calculated bill reductions</p>	<p>Non-energy impact evaluation for health effects (customer surveys)</p> <p>Impact evaluation for reliable estimates of kW, kWh savings</p> <p>Billing analyses</p>
<p>LTO3 Program contributes to achievement of overall SBC Residential portfolio goals</p>	<p>Amount and dollar value of kW and kWh savings</p>	<p>Impact evaluation for reliable estimates of kW, kWh savings</p> <p>Billing analyses</p>
<p>LTO4 Increased availability and product range of ENERGY STAR certified and “Most Efficient” products, and higher efficiency tier CEE rated products without NYSERDA support</p>	<p>Number and proportion of stores offering ENERGY STAR certified and “Most Efficient” products, and higher efficiency tier CEE rated products</p> <p>Number and types of partners</p> <p>Number and types of ENERGY STAR certified and “Most Efficient” products, and higher efficiency tier CEE rated products offered</p>	<p>Program records</p> <p>Mystery shopping</p> <p>Market analysis, product sales for specialty products</p> <p>Surveys of manufacturers, distributors, and retailers</p>

Section 6:

TESTABLE HYPOTHESES (RESEARCHABLE ISSUES) FOR EVALUATION EFFORTS

Based on this logic model, a number of researchable issues have been identified for evaluation and are noted below. Some of these issues have been investigated and continue to be investigated through NYSERDA evaluation activities.

- Are the advertising campaigns, outreach efforts, and promotional materials effective? How effective/cost-efficient? What is the effectiveness of the messages for each of the target audiences? How well do campaigns work together to increase consumer awareness, knowledge, intent and ability to act on those intentions? What is their impact on sales of ENERGY STAR certified and “Most Efficient” products, and higher efficiency tier CEE rated products?
- Is the supply-side market development moving forward as anticipated? Is the program contributing to increased availability and product ranges of ENERGY STAR certified and “Most Efficient” products, and higher efficiency tier CEE rated products? Is quality supply available to meet demand? Is the program resulting in increased ENERGY STAR certified and “Most Efficient” products, and higher efficiency tier CEE product sales?
- Are participating retailers, manufacturers, distributors and contractors pleased with the functioning and growth in the market for ENERGY STAR certified and “Most Efficient” products, and higher efficiency tier CEE rated products?
- Are NYSERDA-sponsored price reduction incentives and other supplier incentive programs contributing to increased ENERGY STAR certified and “Most Efficient” products, and higher efficiency tier CEE product sales? Are mechanisms in place to determine when market-share sales goals for these products have been met so a product no longer needs to be covered under the program?
- Are promotional activities leading to increase in demand for ENERGY STAR certified and “Most Efficient” products, and higher efficiency tier CEE rated products by end-use customers?
- Does ENERGY STAR advertising raise awareness for all residential ENERGY STAR certified and “Most Efficient” products and services?
- Do these advertising efforts increase knowledge and induce greater purchases of ENERGY STAR certified and “Most Efficient” products, and higher efficiency tier CEE rated products than otherwise would have occurred, both within and outside of the program?
- Are ENERGY STAR certified and “Most Efficient” products, and higher efficiency tier CEE rated products meeting consumer expectations? Does this support their continued and growing interest in having ENERGY STAR certified and “Most Efficient” products, and higher efficiency tier CEEs as purchasing criteria?
- Are the feedback mechanisms in the market positive and supportive of growth in demand? Of growth in supply?
- Are quality assurance activities producing useful and valid information and demand for ENERGY STAR certified and “Most Efficient” products, and higher efficiency tier CEE rated products?

- What level of supply/market infrastructure support is needed to maintain a sustainable market for ENERGY STAR certified and “Most Efficient” products, and higher efficiency tier CEE rated products?
- Are retailers and manufacturers recognizing the profitability of promoting ENERGY STAR certified and “Most Efficient” products, and higher efficiency tier CEE rated products without NYSERDA supply/midmarket assistance?
- Are end-users recognizing savings from using ENERGY STAR certified and “Most Efficient” products, and higher efficiency tier CEE rated products, and would demand be strong without NYSERDA supply/midmarket assistance?
- What are the future implications for ENERGY STAR certified and “Most Efficient” products, and higher efficiency tier CEE rated products? What future technologies will prompt their consideration of further purchases?
- How much continued consumer advertising is needed to maintain a sustainable market for ENERGY STAR certified and “Most Efficient” products, and higher efficiency tier CEE rated products?

Evaluation research addressing these questions will help to validate the program theory and will inform NYSERDA Program staff of Program progress and potential areas for Program refinement.