

EXECUTIVE SUMMARY

INTRODUCTION

New York's public benefits program was established by order of the New York State Public Service Commission (PSC) in January 1998.¹ The initial three-year program offered a complement of programs and services to improve the State's energy efficiency, reduce the energy burden of low-income users, and support research and development in energy efficiency, renewable energy technologies, and environmental monitoring and protection. The program began July 1, 1998, with funds collected from customers by the electric utilities through a non-bypassable system benefits charge (SBC). The PSC designated the New York State Energy Research and Development Authority (NYSERDA) as the Statewide administrator of most of the program funds. The PSC directed that the remaining funds be administered by utilities to complete or continue some of their existing energy efficiency and low-income programs. NYSEDA's public benefits programs are offered under the service mark name of **New York Energy \$martSM**. This report provides summary progress results of **New York Energy \$martSM** Program implementation, including information on program budgets, implementation status, results achieved to date, and current and planned evaluation activities.

The **New York Energy \$martSM** Program results contained in this report cover the period between July 1, 1998 and June 30, 2001. Of the \$234.3 million collected for public benefit programs during this three-year period, approximately \$175 million² was allocated to NYSEDA to administer the **New York Energy \$martSM** Program Statewide. The portfolio of energy efficiency, low-income, and research and development programs administered by NYSEDA during this three-year period has been evaluated and periodically reported on, first in the September 2000 Interim Report³ and subsequently in three *Quarterly Status Reports*.

In January 2001, the PSC issued an order⁴ extending the SBC Program for another five years and increasing the funding to \$150 million annually through June 30, 2006. Of this amount, each year NYSEDA is administering approximately \$139 million, and the electric utilities administer \$11 million.

¹ New York State Public Service Commission. In the Matter of Competitive Opportunities Regarding Electric Service., Opinion No. 98-3. *Opinion and Order Concerning System Benefits Charge Issues*. Issued and effective January 30, 1998. Cases 94-E-092 *et al.*

² This includes \$3.0 million for Environmental Disclosure.

³ New York State Energy Research and Development Authority. September 2000. *New York Energy \$martSM Program Evaluation and Status Report: Report to the System Benefits Charge Advisory Group*.

⁴ New York State Public Service Commission. January 26, 2001. *Order Continuing and Expanding the System Benefits Charge for Public Benefits Programs*.

Through June 30, 2006, New York's public benefits program will have been funded for a total of eight years at over \$1.0 billion.⁵

Improving energy efficiency remains a central focus of New York's energy policy. Effective energy efficiency programs reduce energy use and energy costs and improve the environment through reduced pollutant emissions that result from energy use. Through its public benefits program, the State has begun assisting development of an energy services industry that will help shift the impetus for providing energy efficiency to the private sector. These programs deliver: energy efficiency and related services to small customers and low-income households; support for development of markets for manufacturing, stocking, and sales of energy efficient products; and support for R&D activities in renewable energy development, new product development and applications, and environmental protection. Through a PSC directive, the State's public benefits program was recently expanded to include load management and emergency generation resources procurement to help meet the State's peak electricity needs until new generation resources become available. The results to date and progress made toward the State's public policy goals are summarized in the following section of this report.

PROGRESS TOWARD ACHIEVING PUBLIC POLICY GOALS

Summary of Progress Toward Key New York Energy \$martSM Goals

The initial policy goals of the **New York Energy \$martSM** Program were to:

- 1)–Promote competitive markets for energy efficiency services, and
- 2)–Provide direct benefits to electricity ratepayers or be of clear economic or environmental benefit to the people of New York.

The continuation of the **New York Energy \$martSM** Program, pursuant to the PSC January 2001 order extending the SBC Program through June 30, 2006, established four new policy goals by which to measure the Program's success. These goals, which encompass and expand the original SBC policy goals, include: (1) improving system-wide reliability and peak reduction through end-user efficiency actions; (2) improving energy efficiency and access to energy options for underserved customers; (3) reducing environmental impacts of energy production and use; and (4) facilitating competition to benefit end-use customers. Progress toward achieving these four new public policy goals will be measured and presented in all future **New York Energy \$martSM** Program Evaluation Status Reports. This current evaluation, however, concentrates on the two initial goals.

⁵ In addition to this funding, the New York Power Authority (NYPA) and the Long Island Power Authority (LIPA) together will spend another \$130 million each year on energy efficiency and related public benefits programs. Collectively, over the eight-year period of 1998 through 2006, the State will spend more than \$2.0 billion on public benefits energy-related programs.

Progress of **New York Energy \$martSM** toward achieving the two initial policy goals established by the PSC is highlighted below. A detailed examination of the progress, including expanded information on the bulleted items below, is presented in Section 6.

GOAL 1: Promote competitive markets for energy efficiency services.

- The **New York Energy \$martSM** Program is providing a strategically balanced portfolio of 38 programs that seek to overcome market barriers, to increase supply, and stimulate demand for energy efficiency products and services and renewable resource technologies.
- Programs are increasing consumer availability of and demand for energy-efficient products and services.

GOAL 2: Provide direct benefits to electricity ratepayers or be of clear economic or environmental benefit to the people of New York.

- New York's energy customers receive public and societal benefits from the implementation and administration of the **New York Energy \$martSM** Program.
- The **New York Energy \$martSM** Program has reduced energy costs for ratepayers in New York, most notably the low income population.
- Environmental protection, monitoring, and evaluation technologies are being demonstrated, developed, and deployed to enhance the quality of information available to policymakers, ratepayers, and other stakeholders for energy related decision making.
- New York consumers are offered a greater choice in energy efficient equipment and appliances.
- Higher costs associated with energy efficiency improvements are being reduced to allow greater consumer choice and affordability.
- The Renewable Energy Program has expanded the renewable energy market in New York.
- The Energy Efficiency and Strategic R&D Programs are finding niches in the marketplace and are positioned to develop and demonstrate new technologies to benefit New Yorkers.

SUMMARY OF PROGRAM PROGRESS AND EVALUATION FINDINGS TO DATE

Summary of New York Energy \$martSM Financial Status

As of June 30, 2001, all available funding provided for the initial three-year program was committed ⁶. The financial status of the major programs in aggregate are presented in Table S-1. When the PSC issued the January 2001 order to extend SBC, programs that were expected to continue beyond the initial three-year time frame were allowed to exceed the three-year budget, consequently the \$201 million in committed funds is higher than the \$182.2 million⁷ budget.

Table S-1: Financial Status for the Initial Three-Year SBC Program (\$ million)

Program Area	SBC Budget	Total Committed Activity
Energy Efficiency	\$123.6	\$143.6
Low Income	\$ 16.2	\$ 12.8
Research and Development	\$ 28.8	\$ 33.6
Environmental Disclosure	\$ 2.9	\$ 0.4
Evaluation	\$ 0.7	\$ 0.7
Administration	\$ 10.0	\$ 10.0
Total SBC Program	\$182.2*	\$201.0

*See footnote 7.

New York Energy \$martSM Program Process Evaluation Findings

As of June 2001, NYSERDA had issued 66 solicitations for **New York Energy \$martSM** Program implementation and incentives, including 18 Requests for Proposals (RFP),⁸ 20 Program Opportunity Notices (PON)⁹ for projects, and 28 PONs for incentives. All the RFPs and PONs for project design and implementation were closed as of June 2001. Overall, 483 proposals for implementation and design were

⁶ Committed funds include expended funds and funds associated with signed and pending purchase orders, contracts, and incentives.

⁷ This amount reflects: \$174.8 million collected from utilities (including \$3.0 million for Environmental Disclosure); \$1.6 million in unspent SBC funds transferred to NYSERDA from ESEERCO and O&R; and \$5.8 million in interest earnings from Year 1 and Year 2 of the **New York Energy \$martSM** Program.

⁸ Request for Proposal (RFP)—A solicitation for projects that describes with a high degree of specificity the work contemplated and the evaluation criteria to be used. A RFP usually results in one award.

⁹ Program Opportunity Notice (PON)—Outlines challenges and then publically requests proposals from any private or institutional entity to submit project plans addressing the issue. A PON usually results in multiple awards.

received and 175 (36%) have been approved for funding. More than 2,000 incentive applications were received and nearly 1,600 (77%) of these applications have been, or are expected to be, approved for funding.

During the period August through November 2001, NYSERDA, with assistance from its evaluation contractor team (GDS Associates, Inc., Megdal & Associates, and B&B Resources), conducted a targeted evaluation of the **New York Energy \$martSM** Program contracting process, including (1) solicitation process, (2) contracting process, and (3) project initialization process.

A process evaluation survey of 88 customers and 26 contractors was conducted by GDS to assess the effectiveness of the **New York Energy \$martSM** Program solicitations, contracting, and project start-up processes. Responses to a question of overall satisfaction showed 80% of survey participants were either satisfied or extremely satisfied with NYSERDA's solicitations while the process found to be most challenging was contracting. Details of the survey results are presented in Section 3 of this report.

New York Energy \$martSM Cost-Effectiveness Findings

NYSERDA and its evaluation assistance contractor GDS Associates, Inc., have evaluated the benefit-cost (B/C) ratios of various energy efficiency measures and programs, and the **New York Energy \$martSM** portfolio as a whole. Based on a preliminary cost-effectiveness analysis, the total **New York Energy \$martSM** Program portfolio-level B/C ratio is 1.4, showing that cumulative benefits are 40% greater than cumulative costs.¹⁰ To date, analyses of B/C ratios were determined for 13 of 35 individual programs grouped by sector and for 70 measure-level (specific items within a program) end-use categories.¹¹ This preliminary B/C ratio will be further refined as more programs are evaluated and the results are further scrutinized, including review by the SBC Advisory Group. Although the early data appears to confirm the cost-effectiveness of measures and services delivered through the **New York Energy \$martSM** Program, overall conclusions cannot be drawn based on this preliminary assessment.

¹⁰ Appendix C of this report contains the methodology that was used for conducting the cost-effectiveness analysis of the **New York Energy \$martSM** Program including the measures and individual projects offered. The B/C ratio reported here is generally thought to be conservative as market effects (and potential wholesale market effects that may be associated with load reduction measures) are not included for several of the market transformation programs.

¹¹ The B/C models developed for these analyses recognize avoided cost benefits associated with capacity savings from the load reduction elements of the **New York Energy \$martSM** Program initiatives. However, a recent study sponsored by PACE and NAESCO identified the potential for significant additional market effects from load reduction measures (JBS Energy Inc. *Mid-Atlantic States Cost Curve Analysis*. December 5, 2000). The benefit-cost calculations presented in this report do not consider these potential benefits.

New York Energy \$martSM Program Progress to Date

The New York Energy \$martSM Program has achieved broad public benefits such as improved environmental quality, increased energy affordability, and enhanced electric system reliability during its first three years and has positioned itself, based upon lessons learned in program design, administration, and evaluation, to continue such benefits into the future. Data compiled here are for programs that are operational and report energy savings as of June 30, 2001.¹² A detailed analysis of programs is presented in Section 4.

Table S-2 provides an overview of the progress of the New York Energy \$martSM Program. The table contains summary results of programs, either anticipated or from installed measures, for funds committed as of June 30, 2001. These include an anticipated electricity savings of over 927 million kWh¹³ per year and an anticipated energy bill savings for program participants of \$119.1 million per year – \$102 million from electricity savings¹⁴, \$13.8 million from natural gas savings, and \$3.3 million from oil savings.

Table S-2: Summary of Program Results from Funds Committed as of June 30, 2001

Evaluation Criteria		Results
Anticipated Electricity Savings (<i>kWh</i>) per Year from Funds Committed		927.7 million kWh
Anticipated Demand Savings (<i>MW</i>) from Funds Committed		521.3 MW
Anticipated Energy Bill Reductions per Year from Funds Committed		\$119.1 million
Anticipated Clean Generation per Year from Funds Committed		126.1 million kWh
Electricity Savings (<i>kWh</i>) per Year from Installed Measures		312.5 million kWh
Demand Savings (<i>MW</i>) from Installed Measures		216.9 MW
Average Program Cost per kWh		\$0.016
Average Program Cost per kW		\$902
Anticipated Annual Emission Reductions from Funds Committed (All Sources) (<i>Tons</i>)	NO _x	960
	SO ₂	1,680
	CO ₂	671,915
Anticipated Co-Funding and Leveraged Investment		\$617.7 million
Jobs Sustained and/or Created		2,311

¹² The results shown here are subject to changes as future reports are issued that reflect updated program status.

¹³ Methods and assumptions for selected programs used to determine kWh and KW are presented in Appendix B.

¹⁴ Estimated New York State electricity expenditures by sector for 2000 are: \$5.9 trillion for residential, \$8.4 trillion for commercial, and \$1.2 trillion for industrial. New York State Research and Development Authority. December 2001. *Patterns and Trends: New York State Energy Profiles: 1986-2000*. NYSERDA

Based on funds committed through June 30, 2001, in the ratio of anticipated co-funding and leverage investment (\$617.7 million) to NYSERDA's **New York Energy SmartSM** funds committed (\$201 million) is 3.1. Comparing the \$119.1 million anticipated bill savings to the total of \$201 million in committed spending by NYSERDA and \$617.7 million in external spending results in a 14.5% return on investment.

New York Energy SmartSM Causality Approach and Early Findings

Basically defined, causal attribution is the claim that a particular program strategy or intervention caused a particular outcome.¹⁵ An examination of causality is an important component of the **New York Energy SmartSM** evaluation effort because it can help to validate the legitimacy of program interventions, justify the expenditure of public benefits funds, and assist policy makers in decisions regarding energy efficiency, low-income, and research and development programs. Several examples exist where there is early evidence of causality attributable to a **New York Energy SmartSM** program. These examples are detailed in Section 5.

NEXT STEPS FOR PROGRAM EVALUATION

Evaluation should withstand scrutiny. A draft report¹⁶ by the New York State Office of the Comptroller reviewed advertising practices and evaluated marketing plans for six State entities. The report states that only NYSERDA had developed specific marketing plans for its advertising efforts and had contracted with a consultant to evaluate program performance to date. Based on identifiable goals and objectives, the consultant concluded that NYSERDA's marketing program for ENERGY STAR^{®17} was successful.

The evaluation of the **New York Energy SmartSM** Program, including its marketing efforts, distribution of funds, and competitive solicitation process, will continue to include the use of external evaluation contractors that will continue to provide objective analyses and independent expert review.

In addition to measuring progress, program evaluation impacts program design and performance in that evaluation activities help uncover opportunities for changing programs to improve performance. Often these program changes, in turn, bring about new and refined evaluation metrics and performance measurement activities. Section 7 offers an overview of modifications and enhancements to the initial three-year program and sets forth details of program evaluation processes as well as strategies for future

¹⁵ Carol H. Weiss. 1998. *Evaluation: Methods for Studying Program and Policies*, Prentice Hall, Upper Saddle River: New Jersey, Glossary, pg. 328.

¹⁶ "State Agency and Authority Advertising Practices" 2001 Draft -- A Report by the New York State Office of the State Comptroller, Division of Management Audit and State Financial Services.

¹⁷ NYSERDA provided detailed marketing plans for ENERGY STAR[®] television ads featuring Steve Thomas, television home improvement show host, as well as more general information for other ads that featured or referenced public officials.

evaluation and measurement activities, a few of which are:

- Streamlining of NYSERDA's application and contracting process,
- Establishing a more formal and systematic program orientation of market allies,
- Making mid-course program changes to address the ever changing conditions of New York's energy market.

Proposed NYSERDA actions in Section 7 and Appendix A equate to an outline for the expanded program evaluation plan; however, this plan is subject to approval by the SBCAdvisory Group at their March 2002 meeting. Future evaluation activities will continue to focus on individual projects, programs, market transformation, and causality.

CONCLUSION

The energy customers and energy markets in New York are not static. Market events that occur internationally, nationally, and Statewide can have lasting impacts on energy customers and markets. In three years of program administration, the **New York Energy \$martSM** portfolio of energy efficiency, low-income, and research and development programs, has demonstrated that progress and ability to meet market needs and conditions. This report is a snapshot in time that demonstrates the effectiveness of the **New York Energy \$martSM** public benefits program.