

EVALUATING THE NEW YORK ENERGY \$MARTSM LOW-INCOME ENERGY AFFORDABILITY PROGRAM (LEAP)

Mark C. Coleman, *New York State Energy Research and Development Authority*
Victoria S. Engel, *New York State Energy Research and Development Authority*
Lawrence J. Pakenas, *New York State Energy Research and Development Authority*
Peggie A. Neville, *New York State Energy Research and Development Authority*

Introduction

Access to reliable and affordable energy is one of the most important energy issues facing the more than 2.7 million low-income households in New York. The energy burden, defined as the ratio of energy cost to household income, ranges from 7-29% for low-income households in the State, compared to 3-5% for middle-to-higher income households. The energy burden, coupled with the fact that New York ranks among the top five states nationally that have the highest electricity costs for residential customers¹, places low-income consumers at greater risk of not having adequate energy supplies, or having to choose paying heating and electricity bills over having additional money for essential needs such as food, clothing, medical expenses, and education.

The **New York Energy \$MartSM** Low-Income Energy Affordability Program (LEAP) is a publicly-funded energy efficiency program made up of five initiatives that have been designed to work as an integrated portfolio of services to collectively reduce the energy burden of low-income energy customers in New York. Funded at \$119.6 million over eight years, LEAP represents approximately 14.1% of the electric energy public benefits program funded through a system benefits charge (SBC) in the State and administered by the New York State Energy Research and Development Authority (NYSERDA). This paper (1) summarizes NYSEDA's evaluation methodology of LEAP, (2) presents progress of the LEAP through December 31, 2002 toward program-and-public policy goals, and (3) presents and discusses how NYSEDA's evaluation has been used to inform and improve program design and implementation, and used to inform policy-level decisions regarding program funding for low-income energy services in New York.

The LEAP evaluation has demonstrated that the program is achieving both its program-and-public policy goals; achieving considerable electricity savings; and providing direct benefit to low-income participants and ratepayers.

The Low-Income Energy Assistance Program (LEAP)²

LEAP was created in 1998 as an integral component of a portfolio of energy efficiency and research and development programs targeted to residential, business, municipal, institutional, industrial, and agricultural electricity customers in New York. The portfolio of programs, collectively called **New York Energy \$MartSM**, are funded by a non-by-passable charge on electricity transmission and distribution services in New York. LEAP offers technical information and assistance, direct installation of energy-efficient products and services, low-interest financing opportunities, aggregation services, public awareness, and program coordination. The public policy and program goals for LEAP include:

¹ The Energy Information Administration; U.S. Department of Energy. www.eia.doe.gov.

² For a comprehensive discussion of the **New York Energy \$MartSM** LEAP and evaluation, including its design logic; targeted customers; market barriers; program results, lessons learned, findings and conclusions; see; *New York Energy \$MartSM Low-Income Energy Affordability Program Evaluation and Status Report (July 1998 through June 2002), Report to the New York State Department of Public Service*. September 2002. Available from NYSEDA, www.nyserda.org.

- Reducing the energy burden of low-income consumers through improved energy efficiency, energy management strategies, and specific aggregation strategies;
- Coordinating with community-based organizations and existing public assistance programs to implement market-based energy procurement and efficiency strategies;
- Leveraging public and private funds and building on the successes of existing initiatives with weatherization and other community-based organizations;
- Providing a multi-faceted all-fuels approach by supplementing federal weatherization program funds and expanding the scope of services to include installing electric-reduction measures and electric-to-gas fuel conversions in order to reduce the energy burden of low-income customers, and support the viability of low-income multifamily buildings;
- Implementing specific aggregation strategies to increase the market power and self-sufficiency of low-income consumers who may not be served in the competitive energy marketplace; and,
- Informing low-income energy customers and State and community-based service providers of the services and options available to them, thereby improving the linkages among parties that help low-income and special-needs New Yorkers to address their energy requirements.

Context of NYSERDA's LEAP Program

More than seven million New Yorkers (approximately 36% of the resident population)³ have incomes below 80% of state median income (SMI) and are considered low-income residents on this basis.⁴ These consumers occupy 2.7 million residential units, including 1.2 million publicly-assisted residential units. Energy expenses for all low-income households in New York are estimated to exceed \$4 billion per year.⁵ The energy burden⁶ for low-to-moderate-income households in the Northeast ranges between 7%-29%, compared to 3% for middle-to-higher-income households.

Much of New York's publicly assisted housing has high-energy costs as a result of using electric-resistance heat in poorly insulated buildings. Over 50% of the energy costs of low-income households are spent on space and domestic hot water heating. Additionally, the private residential housing stock for low-income households is generally energy-inefficient and of poor quality. The combination of poor housing stock, high energy costs, and New York's cold winter climate makes it difficult for low-income households to lower their energy use and costs.

Regionally, the largest share of low-income households are in Chautauqua, Cattaraugus, Allegany, and Steuben counties (in the Southwest portion of the State); Yates, Tompkins, and Otsego counties (in the Central region of the State); St. Lawrence, and Franklin counties (in the North Central portion of the State); and Sullivan, Kings, Bronx, and New York counties (in the Southeastern portion of

³ The 2001 population of New York was 19,011,378. Source: U.S. Census Bureau. State and County Quick Facts, New York, 2001. <http://quickfacts.census.gov/qfd/states/36000.html>

⁴ 80% of area median income is defined as *lower income* by the U.S. Housing Act. The U.S. Department of Housing and Urban Development (HUD) uses 80% of area median income as the threshold for many housing assistance programs.

⁵ Estimated by NYSERDA.

⁶ Energy burden is defined as the proportion of gross income that is contributed to direct energy cost (*i.e.*, heating, cooling, electricity use). Low-income households carry a heavier energy burden because they have lower annual incomes compared to all other households, meaning the proportion of income they spend on energy costs compared to other household income segments (*i.e.*, middle income or greater) is significantly greater, leaving less money for life essentials.

the State).⁷ On average, residential households in New York paid 14.1¢ per kilowatt hour (kWh) for electricity in 2000, 71.5% more than the average kWh rate paid for electricity by residential households nationwide.⁸

The New York Energy \$MartSM LEAP Program

LEAP is funded at \$119.6 million over eight-years (*June 1998 through June 2006*), and spans the following major program initiatives: Assisted Multifamily Buildings Program (AMP), Low-Income Aggregation (including the Oil Buying Strategies); Low-Income Forum on Energy (LIFE), Low-Income Awareness, Assisted Home Performance with ENERGY STAR[®] and Low-Income Services, and the Low-Income Direct Installation Program. A brief description of each of these initiatives is provided in Table 1, including their program budgets.

Table 1. LEAP Program Initiatives and Budgets

Program	8-Year Program Budget	Program Status	Program Objectives/Services Offered
Assisted Multifamily Buildings Program (AMP)	\$72.2 million	Operational	<ul style="list-style-type: none"> Provide technical assistance, training, and financial incentives to enhance the incorporation of energy-efficient design and the selection of energy-efficient equipment in the State's portfolio of publicly assisted housing. Coordinate program delivery with other State and local agencies in public housing. Create a network of Local Case Managers (LCMs) to provide program marketing, intake, case/client management, coordination, and technical services.
Assisted Home Performance with ENERGY STAR [®] and Low-Income Services	\$25 million	Operational	<ul style="list-style-type: none"> Provide energy audits, financing, and installation of identified energy efficiency measures in 1-to-4 family homes with household incomes less than 80% of state median income (SMI). Develop a trained and certified infrastructure of energy service professionals for this under-served market.
Direct Installation Program	\$9.9 million	Concluded, April 2002	<ul style="list-style-type: none"> Provide electric-reduction measures (<i>e.g.</i>, lighting, fixtures and appliances) to eligible low-income customers. Provide classroom training to weatherization agency representatives.
Low-Income Aggregation (including the Oil Buying Strategies Program)	\$6.7 million	Operational	<ul style="list-style-type: none"> Arrange for the bulk purchase of fuel oil, natural gas, and electricity at competitive or discounted prices while ensuring strong consumer protections. Coordinate energy efficiency and conservation services with weatherization programs, NYSERDA energy efficiency programs, and other public and privately-funded energy efficiency initiatives. Inform low-income households to make energy supply and usage decisions.
Low-Income Awareness	\$2.8 million	Operational	<ul style="list-style-type: none"> Design and implement a public awareness campaign that would result in measurable improvements in the enrollment of low-income residents in energy efficiency and Statewide energy management programs.
Low-Income Forum on Energy (LIFE)	\$1.1 million	Operational	<ul style="list-style-type: none"> Improve the effectiveness of existing public resources for energy assistance by facilitating information sharing and strategy coordination among government agencies and community-based organizations.
TOTAL	\$119.6 million		

⁷ U.S. Census Bureau. <http://factfinder.census.gov>.

⁸ Energy Information Administration. www.eia.doe.gov.

NYSERDA's LEAP Evaluation Approach and Methodology

NYSERDA's approach to evaluation is based on an integrated cross-disciplinary model that includes evaluators as members of project teams involved in the various stages of program planning, design, monitoring, and evaluation. The evaluation effort includes the services of nationally-recognized evaluation consultants that help to ensure that the program evaluation effort is comprehensive, fair, and objective, and the SBC Advisory Group, which serves as the independent program evaluator for the **New York Energy \$MartSM** Program. NYSERDA's evaluation efforts are closely integrated with program activities, and help to provide program designers and implementers with timely information that can enhance program services in the market. To date, LEAP evaluation results:

- Have been used to communicate program logic, purpose, and benefits to the New York State Public Service Commission (PSC). PSC staff will compare and contrast LEAP with two other utility-run low-income energy affordability programs in New York.
- Have been used by internal NYSERDA project staff to (1) better understand how the program operates by itself and within a portfolio, and (2) make any necessary mid-course program changes that would increase its success and ability to serve customers.
- May be used, in conjunction with other analyses, to make policy-level decisions in the State regarding how public benefits funds are allocated to utilities' and public authorities' low-income energy affordability programs.

Research findings, such as program progress toward goals, energy savings, customers served, customer cost savings, customer satisfaction with particular program elements, lessons learned, and quality-of-life impacts, have been evaluated and reported, and are summarized within this paper.

Evaluation Goals, Guidelines, and Methodology

The goals of the LEAP evaluation were, and continue to be:

- To provide a credible evaluation of the **New York Energy \$MartSM** LEAP, including all of its existing initiatives.
- To provide timely information to the PSC, SBC Advisory Group, and NYSERDA program and project managers on the:
 - Efficiency and effectiveness of program administration and implementation.
 - Progress toward LEAP goals.
 - Progress toward the PSC's broad policy goal of increasing the affordability of low-income households.

Evaluation Guidelines and Process

The LEAP evaluation was, and continues to be, based on the following guiding principles:

- Objectivity, fairness, and balance in terms of the types of data and information collected.
- Sound methodology, credible data and analysis, and adherence to professional standards.
- Focus on early, intermediate, and longer-term outcomes as measures of progress; and on impacts and causality as final determinants of success.

The LEAP evaluation used a five-step sequential process as a means of managing the LEAP evaluation as shown in the sidebar to the right.

NYSERDA's Five-Step Evaluation Process

- ✓ Work with program managers to identify the individual project goals that support major program area goals and ultimately the PSC's broad public policy goals;
- ✓ Define key success indicators and criteria for measuring progress toward meeting program goals;
- ✓ Manage data collection including design of data collection instruments, and conduct quantitative and qualitative analyses to determine the success of program efforts;
- ✓ Assess progress and outcomes (*e.g.*, use data and information collected during program implementation to track program progress and identify opportunities to modify program designs, target audiences, and marketing, to improve outcomes); and
- ✓ Evaluate process, outcomes, and causality and prepare a report summarizing evaluation findings.

Defining Evaluation Indicators and Metrics

The evaluation of LEAP viewed each of the five operational low-income initiatives as components of a portfolio of programs, each contributing a share to the overall goal of increasing affordability and access to energy options for low-income households. In measuring the portfolio's progress in achieving this public policy goal, individual metrics were established for each of the five initiatives. Table 2 examines the indicators that were used for each of the five program initiatives during the initial three-year **New York Energy \$MartSM** Program.

The overriding goal that ties all of these indicators together is an increase in energy affordability for low-income households. This can be measured through the reduction in energy bills that has been achieved through installing energy efficiency measures, reducing fuel and electricity costs resulting from aggregation into a larger pool of customers or through bulk purchasing, and reducing energy burden (*i.e.*, the percentage of income these households spend on energy costs versus other necessities). The LEAP evaluation did show a reduction in annual energy bills for customers served; however, it was not fully-or directly-tied to a decrease in energy burden because such a comparison was beyond the scope of the evaluation.

Evaluation Tools and Methodology

The evaluation of LEAP was conducted, in part, as an extension of the larger evaluation of the **New York Energy \$MartSM** Program.⁹ As a sub-area of the **New York Energy \$MartSM** Program, the LEAP evaluation already had program monitoring, tracking, reporting, and analysis procedures in place. The **New York Energy \$MartSM** Evaluation Model uses implementation contractors as primary sources of program information and data. In many cases implementation contractors operate at the customer level. They either directly install energy-efficient products or conduct energy audits.

Table 2. Evaluation Indicators of Performance for LEAP Program Initiatives

⁹ The comprehensive **New York Energy \$MartSM** Program evaluation is a collaborative effort involving NYSERDA, the SBC Advisory Group (as the Independent Program Evaluator), specialist evaluation assistance contractors, and program and project implementation contractors. NYSERDA is responsible for conducting the evaluation of the **New York Energy \$MartSM** Program and reporting its results to the SBC Advisory Group.

Program Initiative(s)	Measurement Indicators of Program Activity and Progress Toward Goals
Direct Installation, Weatherization Network Initiative (WNI), and Assisted Home Performance with Energy Star®	<ul style="list-style-type: none"> • kWh savings, kW summer peak demand reductions • Number of customers (households/ units) served • Number and type of efficient product installations • Leveraged funding • Recycled appliances and pounds of material diverted from landfills • Non-energy benefits (e.g., health, safety, comfort) • Increased affordability • Coordination with Weatherization Assistance Program; community-based organizations; other energy assistance programs • Reduced barriers and increased energy options • Customer satisfaction
Public Awareness	<ul style="list-style-type: none"> • Increase in customer participation in energy assistance programs (pre-and-post baseline measurements) • Total number of callers to the 1-888-HELP-4-NY hotline • Customer satisfaction with help-line • Total increase in awareness of energy assistance programs statewide
Assisted Multifamily Buildings Program (AMP), formerly the Publicly Assisted Housing Program (PAHP)	<ul style="list-style-type: none"> • kWh savings, kW summer peak demand reductions • Measures of market development (i.e., number of buildings that are now financially stable) • Number of customers (households/units) served • Total number of households • Customer (building owner, manager) satisfaction
Aggregation	<ul style="list-style-type: none"> • Total number of customers aggregated or served by competitive suppliers • Cost savings of participants • Market development indicators (e.g., entrance of new market players, reduction in barriers, heightened awareness) • Increase in energy options to customers • Customer satisfaction • Policy recommendations to improve low-income participation in markets • Cost savings associated with automatic delivery and budget plans
Oil Buying Strategies	<ul style="list-style-type: none"> • Total amount of fuel purchased • Amount of cost savings from bulk fuel purchase • Total number of customers served • Customer satisfaction
LIFE	<ul style="list-style-type: none"> • Number of LIFE events sponsored and held. • Number of LIFE participants by type. • Policy papers and recommendations. • Measures of stakeholder collaboration and coordination.

In doing so, implementation contractors record their services, conduct on-site verification procedures or post-installation audits to verify energy savings and quality of work, and report such information directly to NYSERDA Project Managers who manage the expenditure of public funds for these projects. In other cases, program implementation contractors subcontract for installation, verification, and auditing services. Information is reported directly to the implementation contractor who, in this case, serves as an auditor, making sure that the services meet certain requirements, and then provides the information to NYSERDA. NYSERDA typically receives (1) monthly, (2) quarterly, and (3) annual project status reports from contractors. Quarterly and annual reports are more detailed in content. Monthly reports serve to monitor the expenditure of program funding and track new project applications and customers. Project Managers who manage the low-income projects use this information to provide quarterly tracking reports to NYSERDA’s Evaluation Team.

The Evaluation Team works with Project Managers and their implementation contractors to identify appropriate metrics and evaluation indicators to track and report progress over the course of a project. Some of the overarching evaluation metrics for the LEAP projects are identified in Figure 2. The flow or path that LEAP projects take to provide services to low-income customers is also outlined within Figure 2. The Evaluation Team evaluates projects based upon the results provided by project managers and their implementation contractors. The Evaluation Team provides regular feedback to

project managers in an open process that allows for mid-course project corrections to be made, if necessary, as projects mature in the market and as market barriers are addressed.

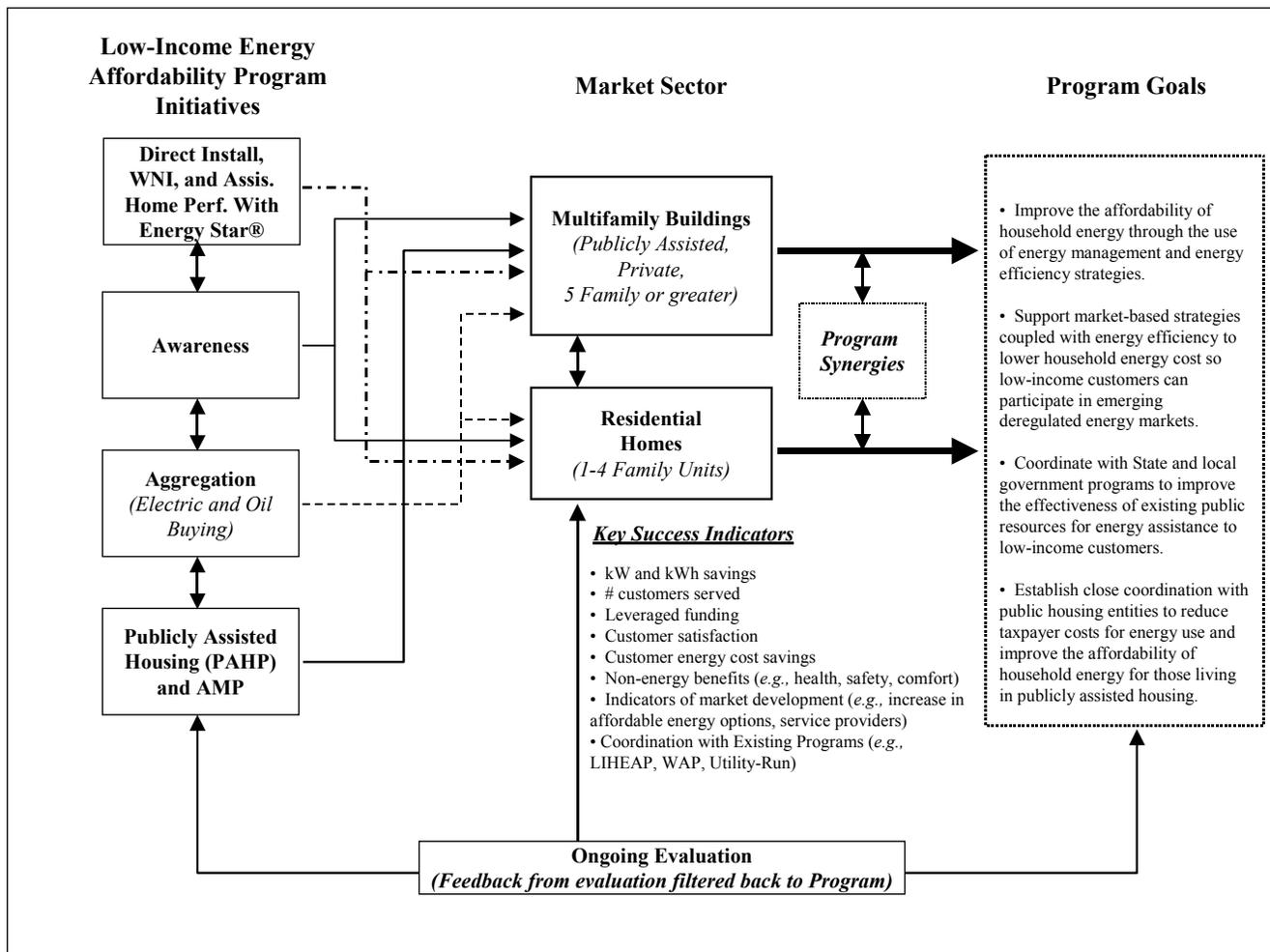


Figure 2. Generic Program Design Flow Model of the Low-Income Energy Affordability Program

Portfolio-Level LEAP Evaluation Results

NYSERDA's evaluation process and activities cuts across the portfolio of **New York Energy \$MartSM** programs. NYSERDA's evaluation examines program theory and logic; program process efficiency; market assessment, characterization, and causality; measurement and verification of program energy savings impacts; and macro-economic and environmental impacts of program offerings. NYSERDA has been evaluating its programs from a portfolio-level perspective since program inception in 1998 and is, through its evaluation process and activities, continuing to develop a model for quantifying portfolio-level program results, including quantifying the synergies that exist between programs.^{10,11} Keeping with this model of evaluation, aggregated results were quantified for LEAP, in

¹⁰ DeCotis, Paul A., Coleman, Mark C., Ellefsen, Jennifer, Kim, Helen. December 2000. "Portfolio Approach to Designing and Evaluating Buildings Energy Efficiency Programs". *Leading the Retail revolution: Proceedings of the Association of Energy Service Professionals (AESP) 11th Annual Energy Services Conference and Exposition.*

addition to detailed program-specific results examined by the measurement indicators in Table 2, above. LEAP portfolio-level results are presented in Tables 3 and 4. These summary tables present the aggregated results of the five operational LEAP initiatives through December 31, 2002.

Table 3. Progress Toward Goals of the LEAP Program (Cumulative Results as of December 31, 2002)

Success Indicator or Goal		Progress
Goal: Improve the energy efficiency and access to energy options for under-served customers.		
Estimated Electric (kWh) Savings		33,071,412
Goal: Improve system-wide reliability through end-user efficiency actions.		
Estimated Electric Demand (kW) Savings		7,073
Goal: Reduce the energy burden of low-income customers.		
Estimated Annual Electric Bill Reduction/unit		\$299 per unit/per year
Estimated Total Customer Annual Cost Savings		\$6,118,211
Benefit-to-Cost Ratio		2.4 to 1
Goal: Reduce environmental impacts of energy production and use.		
Estimated Annual Emission Reductions	Sulfur Dioxide (SO ₂)	49.93 tons
	Nitrogen Oxide (NO _x)	24.80 tons
	Carbon Dioxide (CO ₂)	14,584.4 tons
	Carbon Monoxide (CO)	46.8571.1 tons
	Particulate Matter (PM)	1.98 tons

Note: For a summary of how each of the progress indicators in Table 3 were quantified, refer to the **New York Energy SMartSM** Low-Income Energy Affordability Evaluation and Status Report (July 1998 through June 2002), Report to the New York State Department of Public Service. September 2002. This report is available on NYSEDA's website: www.nyserda.org.

Table 4. Additional Progress of the LEAP Program (Cumulative Results Through December 31, 2002)

Success Indicator or Goal		Progress
Estimated Total Leveraged Funding		>\$49.3 million
Estimated Total Funding to NYSEDA Funding Ratio		3 to 1
Total Number of Customers Served		>20,455 low-income households
Total Funding Committed		\$21.7 million

Note: For a summary of how each of the progress indicators in Table 4 were quantified, refer to the **New York Energy SMartSM** Low-Income Energy Affordability Evaluation and Status Report (July 1998 through June 2002), Report to the New York State Department of Public Service. September 2002. This report is available on NYSEDA's website: www.nyserda.org.

¹¹ DeCotis, Paul A., Tonn, Bruce, Pakenas, Lawrence J., and Eisenberg, Joel. 2002. "Systems Based Portfolio Evaluation: Diagnostic Benefits and Methodological Challenges." *American Council for an Energy Efficient Economy Summer Study on Energy Efficiency in Buildings*. Conference Proceedings.

Additional Results-To-Date

- Based upon estimated electricity (kWh) savings of 33.1 million kWh, LEAP has reduced carbon dioxide emissions by more than 14,500 tons per year. This reduction in carbon dioxide emissions equates to removing approximately 2,900 automobiles from New York roadways each year.
- LEAP leveraged additional investments from WAP. As a result, heating fuel savings of 601,377 MMBtu have been achieved in households that have been served by the Direct Installation and PAHP programs. The heating fuel savings achieved through WAP efforts equates to a total customer cost savings (for gas only) of \$6.9 million or \$338 per customer.¹²

Program-Level Summary

A summary of each of the individual LEAP program initiatives, contributing to the aggregated results is presented below. In addition, Table 5 presents the quantifiable results of each of these programs.

LEAP Direct Installation Program – This program was designed to reduce the energy burden of low-income households and to provide information and energy efficiency services to the low-income community. New York energy customers with annual household incomes at or below 150% of the federal poverty level, or just over \$2,000 monthly income for a family of four were eligible to receive services. Multifamily building owners were eligible to participate, as long as at least 66% of the residents met the income eligibility guideline. The program served 10,235 units in 1,292 buildings, more than 8% more than the program goal. Over 1,500 small homes and 8,700 multifamily households were served. The program achieved an estimated 4.5 MW of peak electric reduction, over 90% of which occurred in the load-constrained New York City region. The program also aided in the recycling of more than 3,900 old refrigerators, resulting in more than 270,000 pounds of materials (*e.g.*, steel, aluminum, copper, plastics) being diverted from solid waste landfills. The program achieved a 25% reduction in electric energy costs of participating households. Participant surveys conducted by the program’s implementation contractor found that 83% of the survey population (1,571 out of 1,895) indicated that energy services helped to improve health, safety, or comfort over pre-existing conditions.

LEAP Public Awareness Program – This program was designed to implement a public awareness campaign targeted to low-income households that would result in measurable improvements in the enrollment of low-income households in statewide energy efficiency and management programs. Applicable programs included all NYSERDA, state, federal, utility, and community-based low-income initiatives, including weatherization, in New York. A toll-free hotline was established (1-866-HELP-4-NY) to refer callers to those energy efficiency programs that they qualified for. Awareness of the hotline was generated through radio and television advertising, some of which was leveraged. In total, more than 16,000 referrals to energy efficiency service and management programs were made between November 2001 and May 2002. A survey of participants found that approximately 60% of the callers to the hotline felt that the service met their expectations and over half (56%) were very satisfied with the service. The survey of participants also unveiled frustration on the part of callers when attempting to call agencies they were referred to for assistance. Callers encountered busy signals, unreturned calls, inaccessible office locations or hours, and unfulfilled promises to send information. Callers were also discouraged about the income guidelines for many programs that seemed to “shut out” the working

¹² The heating fuel savings was calculated based upon the 20,455 customers served through the PAHP and Direct Installation programs. The average price for heating fuel used for this calculation was \$11.50 per MMBtu. An average savings of 29.4 MMBtu per unit was used for this calculation, which reflects the average heating fuel savings for WAP multifamily units cited in a 1998 study prepared by the Association for Energy Affordability, Inc. (AEA) and also cited in the State Plan 2001-2002 for the WAP, page, 7.

Table 5. New York Energy \$MartSM Low-Income Program Performance (Cumulative Results through December 31, 2002)

Program		New York Energy \$Mart SM Low-Income Energy Affordability Program Portfolio Summary						
		<i>Assisted Multifamily Program (AMP), formerly Publicly Assisted Housing Program (PAHP)</i>	<i>Aggregation (including Oil Buying Strategies)</i>	<i>Low-Income Coordination (including Low-Income Forum on Energy)</i>	<i>Low-Income Awareness</i>	<i>Assisted Home Performance with ENERGY STAR[®] and the Weatherization Network Initiative</i>	<i>Direct Installation</i>	Total
Evaluation Indicator								
Implementation Period		2/00 - Present	4/00 - Present	4/99 - Present	11/00 - Present	4/02 - Present	10/98 - 4/01	1999 - Present
Total Budget (\$ millions)		\$72,187,461	\$6,690,000	\$1,060,00	\$2,775,000	\$25,000,000	\$9,920,000	\$119.6
Total leveraged funding (\$ millions)		\$28.8	–	–	\$0.27	–	\$20.5	\$49.57
Total Number of Households (customers) served		10,220	180	–	--	–	10,235	20,635
Estimated annual electric savings (millions kWh)		11.5	–	–	–	–	21.6	33.1
Estimated annual electric demand reduction (kW) savings		2.5	–	–	–	–	4.5	7.0
Estimated annual electric bill reduction per household		\$390.60	–	–	–	–	\$135.60	\$299
Estimated total annual cost savings (\$ millions)		\$3.9	–	–	–	–	\$2.1	\$6.1
Total annual oil and gas savings (MMBtu)		115,405	–	–	–	–	–	115,405
Benefit-to-cost ratio		3.5 to 1	–	–	–	–	2.2 to 1	–
Estimated annual emission reductions (tons)	Sulfur Dioxide (SO ₂)	32.6	–	–	–	–	17.4	50
	Nitrogen Oxide (NO _x)	16.2	–	–	–	–	8.6	24.8
	Carbon Dioxide (CO ₂)	9,516	–	–	–	–	5,069	14,585
	Carbon Monoxide (CO)	46.4	–	–	–	–	24.7	71.1
	Particulate Matter (PM)	1.3	–	–	–	–	–	1.3
Other Pertinent Metrics								
Recycled materials from refrigerators (pounds of material diverted from landfills)		–	–	–	–	–	271,734	271,734

poor, and a lack of assistance available to renters (whom represented one-half of the callers to the hotline).

LEAP Low-Income Forum on Energy (LIFE) – This program initiative was designed to provide a forum for open dialog and exchange of information on issues facing low-income energy consumers, and to encourage collaborative approaches for increasing energy affordability. To date, three statewide conferences and eleven regional forums have been held attracting over 700 participants from 250 different organizations. LIFE has also developed a series of six briefing papers on a variety of key issues affecting low-income energy consumers. The briefing papers are available on the LIFE website, www.lifenynews.com.

LEAP Low-Income Publicly Assisted Housing Program (PAHP) – This program is now the Assisted Multifamily Buildings Program (AMP). The program was designed to improve energy resource efficiency in eligible multifamily buildings, reduce energy bills for tenants and owners, and provide increased health and safety benefits to building occupants. The AMP program targets multifamily residences that fall below 80% of state median income (SMI), and that exist in publicly assisted housing. AMP takes a whole-building approach to energy efficiency improvements providing technical assistance, energy audits, financing services, and the bulk purchase of energy efficiency technologies. AMP estimates 35 million kWh will be saved from the more than 30,000 multifamily units approved for assistance. It is estimated that 1,160 kWh will be saved per unit equating to almost \$215 annually in cost savings to occupants (including savings from oil and gas improvements). In total, it is estimated that \$6.5 million in annual energy savings will result from efficiency improvements in these 30,000 units.

LEAP Oil Buying Strategies Program – This program was designed to improve the energy affordability of low-income households through the bulk purchase of home heating fuel and other procurements that reduce the price of fuel oil. The program also serves to identify and demonstrate approaches to maximize the value of Home Energy Assistance Program (HEAP) benefits for fuel oil. Low-income households with an annual income 80% or less of state median income (SMI) qualify for this program. To date, more than 30,000 gallons of fuel oil have been delivered through the program, saving participants more than \$7,400. The program coordinates its implementation with the New York State Department of Housing and Community Renewal (DHCR), the New York State Office for Temporary and Disability Assistance (OTDA), and local Department's of Social Services. Program participants receive "clean and tunes" of their furnaces or boilers, budget counseling or financial literacy services, if needed.

LEAP Aggregation Program – This program was designed to help the State's low-income households compete effectively in the deregulated energy market. The program serves to identify market barriers that may be inhibiting or altogether preventing low-income consumers from effectively competing in the market. The program also has the goal of improving the energy affordability of low-income consumers by aggregating together, to take advantage of reduced commodity prices through the bulk purchase of energy. Consumers with an annual income less than 80% of the state median income (SMI) are eligible for the Aggregation Program. To date, more than 17,000 units of low-income housing have been aggregated. Of these units, 9,000 were impacted by a competitive purchase of electricity, and 8,000 units did not receive bids that were attractive enough to warrant purchase agreements (the most aggressive tariff discount offered was 1 mill per kilowatt hour).

In addition to the programs described, LEAP is now beginning to implement the *Weatherization Network Initiative (WNI)* and the *Assisted Home Performance with ENERGY STAR[®] with Low-Income Services Program* initiatives. The *Assisted Home Performance with ENERGY STAR[®]* initiative targets residential households with annual incomes less than 80% SMI. The *WNI* initiative targets households with an annual income 60% SMI or lower. Combined these two initiatives seek to serve approximately 10,000 residential households in the State.

Conclusion

The purpose of the **New York Energy \$MartSM** LEAP evaluation was (1) to identify, measure, and report the outcomes of LEAP and the impacts it has had on progress toward goals and on its targeted customer population; (2) to incorporate evaluation findings, conclusions, and lessons-learned into the evolving program strategy; and, (3) to help public policy makers determine whether low-income energy-assistance programs, funded through the SBC, should continue in New York, and at what level.

NYSERDA's administration and evaluation of the **New York Energy \$MartSM** LEAP has been an administrative, programmatic, and evaluation learning experience. NYSERDA has gathered market intelligence about the targeted population of low-income customers it has already, and plans to serve. NYSERDA has also learned the importance and value of forming partnerships with stakeholders such as State agencies, investor-owned utilities, community-based organizations, and low-income advocates that share similar missions and responsibility toward low-income households. Furthermore, NYSERDA has learned that its evaluation of the **New York Energy \$MartSM** Program, and especially the LEAP portfolio, is both a process and a tool. The process must be well coordinated for it to effectively work as a tool that (1) evaluates market needs based on direct customer input and feedback; (2) facilitates the design of appropriate intervention strategies through an orchestrated program strategy; and (3) reports market progress and adjusts program inputs through a portfolio evaluation that focuses on both progress toward goals, as well as achievement of individual program initiative objectives.

Statewide, low-income energy assistance programs represent less than eight percent of the more than \$4 billion in total low-income energy costs per year. Lessons learned and results to date from evaluating the **New York Energy \$MartSM** LEAP show that low-income customer energy services continue to be necessary and public benefits programs are essential in New York. Thus integrating LEAP evaluation with program design enhancements, and furthering efforts to consolidate and coordinate existing energy assistance programs targeted to low-income energy consumers is necessary to ensure consumer protections are provided, especially in a competitive energy market.

Policy Update

As of May 2003, the New York State Department of Public Service (DPS) had reviewed the detailed reports from NYSERDA's LEAP evaluation, and evaluation's of Niagara Mohawk Power Corporation (NMPC) and New York State Gas and Electric (NYSEG) low-income energy assistance programs, submitted in September 2002 to DPS. DPS extended funding to the NYSEG Power Partner Program from March 2003 through May 2003, so that there would be no lapse in service to low-income residents in the NYSEG service area, at least in the short-term.¹⁹ On May 21, 2003 the New York Public Service Commission (PSC) further extended the NMPC and NYSEG low-income energy assistance programs at their respective current funding levels of \$2.5 million annually through June 30, 2004. The PSC also voted to direct DPS staff and the statewide utilities to work with NYSERDA and all interested parties in developing a transition plan to a unified, statewide SBC-funded energy assistance program for low-income electric and gas customers. A transition plan is anticipated to be in place by February 1, 2004, and a target date of July 1, 2004, for the start of the new NYSERDA program.²⁰

¹⁹ State of New York Department of Public Service. Issued and Effective February 26, 2003. Summary Recommendation: *The Commission should approve continued System Benefits Charge and rate funding of New York State Electric and Gas Corporation's existing Power Partner Program for the period from March 3, 2003 to May 30, 2003.*

²⁰ State of New York Public Service Commission. Issued and Effective May 30, 2003. *Order Establishing Conditions for the Continuation and Transfer of Low-Income Programs and Establishing System Benefits Charge Funding.*