

Section 4

PROCESS AND PROGRESS RESULTS

This section reports on the status of administration and implementation of the **New York Energy SmartSM** program. Evaluation results are provided for the **New York Energy SmartSM** program through June 30, 2000, with an emphasis on: (1) the implementation process; (2) progress made toward goals, including outcomes and impacts; and (3) causality. Implementation results are presented in this section, while progress toward the overarching **New York Energy SmartSM** goals is presented in Section 5. Six of the case studies conducted as part of this evaluation are presented in Section 7 including the New Construction; Premium Efficiency Motors; Residential Appliances and Lighting; Energy Operations Management; Low-Income Direct Installation; and Environmental Monitoring, Evaluation, and Protection programs. A seventh case study, conducted of the Standard Performance Contract program, is provided in Appendix A. The Standard Performance Contract program case study is presented separately because it is more in-depth, and has broader implications for future funding, both in New York and elsewhere in the country, than the others.

To date, 38 individual **New York Energy SmartSM** program initiatives are in various stages of implementation.¹ These initiatives are designed to address the Public Service Commission's (PSC) two overarching public policy goals for New York's public benefits program.² The programs are targeting specific market barriers and decision-making processes, as described in Section 3 of this report, to help achieve these goals. This section is organized to report on the budgeting and program administration process, outcomes and impacts, and causality respectively.

BUDGET STATUS

A summary of budget information through June 30, 2000 is provided in Table 4-1. The table summarizes the **New York Energy SmartSM** program budgets for major program areas in terms of funding committed, planned, and remaining. Committed funds consist of expenditures to date, contract balances encumbered, contracts and incentive applications pending, and any solicitations issued that have awards pending. Planned funds include funding set aside for upcoming solicitations, including new program initiatives and planned incentive offerings for existing programs.

¹ Each individual **New York Energy SmartSM** program is described, with implementation status and early results, in Section 6 of this report.

² These two broad public policy goals are: (1) to promote competitive markets for energy efficiency services; and (2) to provide direct benefits to electricity ratepayers, or be of clear economic or environmental benefit to the people of New York.

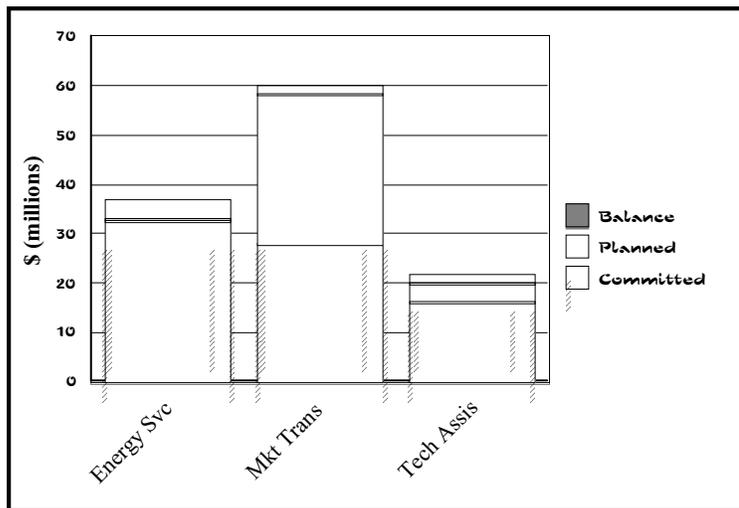
TABLE 4-2: Approved Reprogramming of SBC Funds

Program Area	Program	Adjustment (\$ Millions)
Energy Efficiency Services	Standard Performance Contract	(\$14.3)
	Institutional Performance Contracting Assistance	\$1.0
	New Construction	\$2.5
	Technical Assistance	\$1.2
	ENERGY STAR® Awareness	\$2.5
	Keep Cool (Air Conditioner Bounty) Program	\$2.5
Low-Income	Affordable Assisted Housing	\$3.0
Research & Development	Renewables	\$1.0
	Energy Efficiency and Strategic	\$0.6

Energy Efficiency Services

The Energy Efficiency Services program, funded at \$118.9 million,⁴ includes the Energy Services Industry programs, Market Transformation programs, and Technical Assistance and Outreach programs. These programs represent 67% of the overall **New York Energy SmartSM** program budget. As of June 30, 2000, \$77 million (65%) of the three-year Energy Efficiency Services program budget has been committed and another \$35 million (29%) is planned, bringing the total of committed and planned activity to 94% of the three-year budget. The financial summary for the Energy Efficiency Services program by major program area is shown in Figure 4-1. The Energy Services Industry program area, including the Standard Performance Contract, and Institutional Performance Contracting Assistance programs, funded at \$36.7 million, accounts for nearly 31% of the total Energy Efficiency Services budget. Of the nearly \$77 million in Energy Efficiency Services funding that is committed, \$33 million (42%) is

FIGURE 4-1: Financial Summary for Energy Efficiency Services



⁴ The \$118.9 million excludes the \$0.3 million for metrics and evaluation charged to the Energy Efficiency Services program. The program's total budget, as reported in Section 1, is \$119.2 million.

committed in the Energy Services Industry programs.

Over 90% of the Energy Services Industry budget (nearly \$33.5 million), is allocated to the Standard Performance Contract program. The Standard Performance Contract program progressed more slowly than anticipated during the first 18 months of program implementation. As a result of the slower than anticipated level of activity, and after several mid-course corrections to increase program participation, \$14.3 million of the Standard Performance Contract program budget was reallocated to other Energy Efficiency Services programs, and the Low-Income and Research and Development programs, as shown earlier in Table 4-2. Activity levels have increased significantly since the reallocation, with incentive applications through June 30, 2000, taking up nearly all of the remaining budget. The program currently has less than \$1.5 million left for incentives. As a result of this increased activity, NYSERDA is considering allocating funds back into the Standard Performance Contract program to keep it operational into the third year of the **New York Energy SmartSM** program. A detailed case study of the Standard Performance Contract program is contained in Appendix A of this report.

The Market Transformation programs, funded at \$60.3 million,⁵ account for approximately 51% of the total Energy Efficiency Services budget. These programs constitute 36% of the committed activity, and 88% of the planned activity in the Energy Efficiency Services program area. Approximately \$28 million (47%) of the Market Transformation program funding has been committed, and another \$30.4 million (50%) is planned, bringing the total of committed and planned funding to over 97% of the total three-year budget. It is recognized that Market Transformation programs, by their nature, require more time to bring about intended market effects, and therefore can be expected to commit funds more slowly. The Premium Efficiency Motors program for example, is progressing more slowly than anticipated. In response to this slower than expected progress, several mid-course modifications have been made to increase participation in future program rounds. Specific program adjustments and revised intervention strategies are detailed in Section 6 of this report.

The Technical Assistance and Outreach programs, funded at \$21.9 million,⁶ represent approximately

⁵ As budgeted, the \$60.3 million for Market Transformation excludes a portion of funds for ENERGY STAR[®] Public Awareness. These funds are accounted for under Technical Assistance and Outreach. However, for evaluation purposes, the Market Transformation budget does include ENERGY STAR[®] Awareness. Therefore, the Market Transformation budget presented here is less than the Market Transformation budget (of approximately \$69.1 million for New Construction plus other Market Transformation programs) reported in Figures S-3 and 4-6 which include the entire ENERGY STAR[®] Awareness budget in the category of “Market Transformation (Other).”

⁶ As budgeted, the \$21.9 million for Technical Assistance and Outreach includes a portion of funds for ENERGY STAR[®] Public Awareness. However, for evaluation purposes, the Technical Assistance budget amount does not include the ENERGY STAR[®] Awareness. Therefore, the budget information presented here is greater than the total budget (\$13.1 million) reported for Technical Assistance programs in Figures S-3 and 4-6. In these two figures, the entire ENERGY STAR[®] Public Awareness budget is included in the category of “Market Transformation (Other).”

18% of the overall Energy Efficiency Services budget. Approximately \$16 million (75%) of the Technical Assistance and Outreach program funding has been committed, and another \$3.6 million (16%) is planned, bringing the total of committed and planned funding to over 90% of the total three-year budget. These programs are tracking well, or exceeding anticipated activity levels. Two of these programs, Energy Operations Management and Rate Analysis and Aggregation, have already significantly exceeded their initial three-year budget allocations. Additional funding has been allocated to these two programs to meet customer needs.

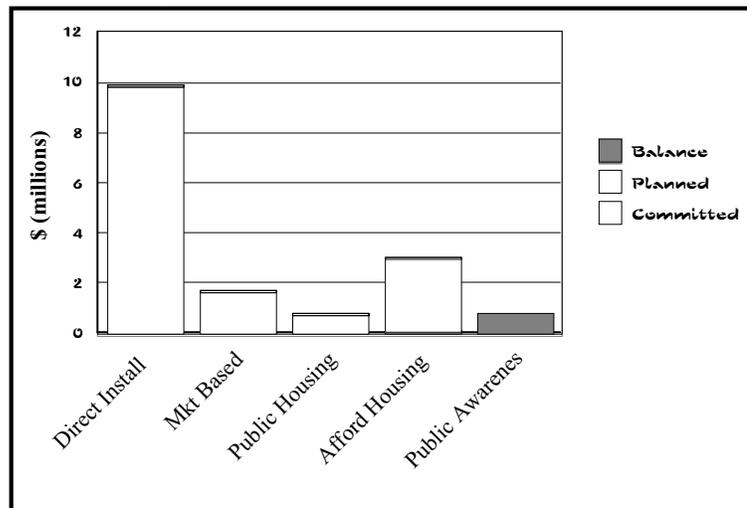
Low-Income Energy Affordability

The Low-Income Energy Affordability program, funded at \$16.2 million,⁷ includes the Direct Installation, Market-Based Strategies (Aggregation), Public Housing Coordination, Affordable Assisted Housing, and Public Awareness programs. Together, these programs represent 9% of the overall **New York Energy SmartSM** program budget. As of June 30, 2000, \$12.6 million (78%) of the three-year Low-Income budget has been committed, and another \$2.9 million (18%) is planned, bringing the total of committed plus planned activity to about 95% of the total three-year budget. Figure 4-2 provides a financial summary by program area for the Low-Income Energy Affordability program.

The Direct Installation program, funded at just over \$9.9 million, comprises the largest share of the Low-Income budget, and the largest share of committed funds. The committed funds for Direct Installation include nearly the entire program budget. However, the amount of funding actually awarded or pending award is significantly less.⁸

The Low-Income Aggregation program (in the Market-Based Strategies program area) is developing more slowly than anticipated due to the lack of a competitive market for electric generation early on in the three-year

FIGURE 4-2: Financial Summary for Low-Income Energy Affordability



⁷ The \$16.2 million excludes the \$30,000 charged to the program area for metrics and evaluation.

⁸ Of the \$9.92 million budget, \$1.9 million has been awarded or is pending award (including \$1.2 million for the program implementer, and just over \$720,000 in funding for electric reduction measures).

New York Energy SmartSM program schedule. A solicitation for this program has closed and proposals are currently being reviewed. A pilot aggregation of Low-Income customers is expected to occur by June 2001.

The Public Housing Coordination and Public Awareness components of the Low-Income program are also developing more slowly than anticipated. In April 2000, a Technical Evaluation Panel convened to review proposals and recommend a contractor for the Technical Assistance for Publicly-Assisted Housing program. The program is scheduled to begin shortly.

The Low-Income program area recently received additional funding in the amount of \$3 million through the reallocation of **New York Energy SmartSM** program funds. These funds have been allocated to the new Affordable Assisted Housing program. This new program, which will coordinate with and extend the Public Housing program, is discussed in greater detail in Section 6 of this report.

Research and Development

The Research and Development (R&D) program, funded at \$28.9 million,⁹ includes the Renewable Energy, Energy Efficiency, Strategic, and Environmental programs. It also includes projects transferred from the former Empire State Electric Energy Research Corporation (ESEERCO). The R&D Program represents 16% of the overall **New York Energy SmartSM** program budget.¹⁰ A total of \$1 million was added to the Renewable Energy program budget, and \$600,000 was added to the Energy Efficiency and Strategic R&D budgets, through the recent funding reallocation. As of June 30, 2000, \$26 million (90%) of the R&D budget has been committed, and \$2.1 million is planned, bringing the total of committed and planned to \$28 million, representing 97% of the total three-year budget.

FIGURE 4-3: Financial Summary for Research & Development

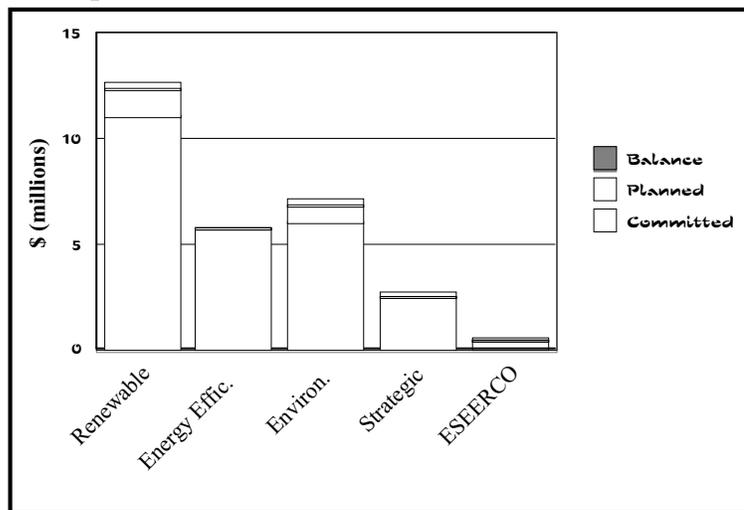


Figure 4-3 provides a financial summary

⁹ The \$28.9 million excludes the \$70,000 charged to the program area for metrics and evaluation.

¹⁰ One million six hundred thousand dollars (\$1.6 million) was recently redirected from the Energy Efficiency Services program area to the Research and Development program area.

for the R&D program. Each of the R&D programs has more than 80% of their budget committed. A balance of less than \$1 million remains for the R&D program area. Overall, the R&D program is well underway and the total three-year budget will be fully committed in the near term.

Environmental Disclosure

NYSERDA was recently allocated \$2.9 million in environmental disclosure funds provided by New York's System Benefits Charge. NYSERDA has contracted with the New York Independent System Operator (NYISO) to develop the software and protocol to collect data to support an environmental labeling program. It is too early to report on program financial activity in this area, however, a contract is in place and work is progressing.

Program Administration

Program administration activities, budgeted initially at \$8.8 million (approximately \$2.9 million per year), representing 5% of the total the **New York Energy SmartSM** program budget has been increased by the PSC to 5.5% to reflect program start-up and initial administration costs. Total funding available for program administration is now \$9.7 million.

PROCESS REPORTING

The Competitive Solicitation Process

The **New York Energy SmartSM** program is being administered and implemented using NYSERDA's existing process and procedures for implementing its statutory programs. All of the **New York Energy SmartSM** programs were developed through a multi-stage planning process overseen by NYSERDA's President, Board of Directors, and Project Development Management Committee (PDMC).¹¹ NYSERDA's project planning and implementation process consists of eight-steps that are illustrated in Figure 4-4, and described in the following paragraphs.

Step 1. A project planning request (PPR) is developed which outlines the objectives and scope of a particular project, and describes its implementation, anticipated benefits, and funding levels. Also included in the PPR, is an identification of the metrics to be used to monitor project and or program progress and evaluate performance.

¹¹ NYSERDA, *Energy Programs for the Future: Entering the 21st Century 1999-2002*, (1999). 1-3.

Step 2. The Project Development Management Committee (PDMC) reviews each PPR for approval and recommends modification, as necessary, or asks staff to investigate any questions or concerns that are raised, before proceeding further.

Step 3. A Technical Evaluation Panel (TEP) is convened to review the proposed solicitation prior to its release. The TEP consists of a majority of outside experts and internal NYSERDA specialists.¹²

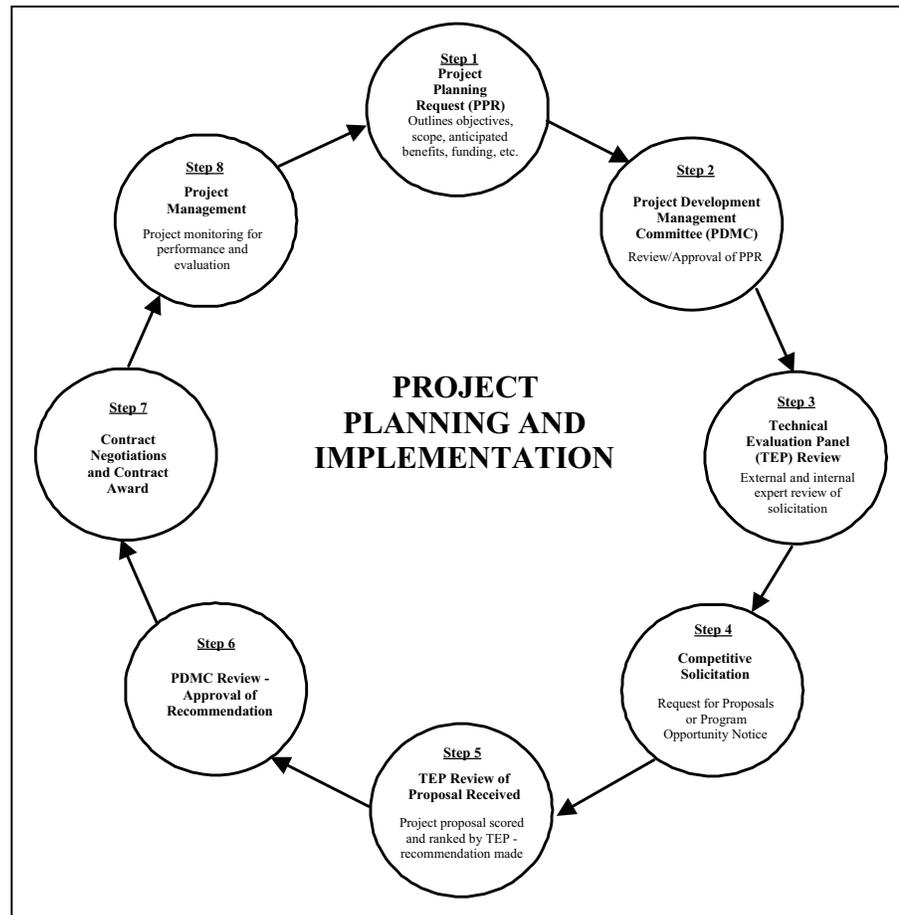
Step 4. A competitive solicitation is issued and reported in the *State Contract Reporter* (e.g., Request for Proposals or Program Opportunity Notice)¹³ and proposals notifications are mailed to interested contractors identified through NYSERDA’s Outreach Database, and posted on NYSERDA’s website.

Step 5. The TEP is reconvened once the solicitation closes to review and score the submitted proposals according to pre-determined evaluation criteria (known to proposers in advance and stipulated in the RFP or PON), and recommend one or more projects for funding to the PDMC.

Step 6. The PDMC reviews the TEP’s recommendation, and approves recommendations as appropriate.

Step 7. Upon approval, NYSERDA enters into contract negotiations with the selected contractor(s) and proceeds to award a contract.

FIGURE 4-4: NYSERDA Project Planning and Management



¹² The New York State Department of Public Service (DPS) has been represented as an outside expert on all of the TEPs for the **New York Energy SmartSM** program solicitations.

¹³ A Request for Proposals (RFP) typically seeks to hire one highly specialized contractor to perform specific tasks. Program Opportunity Notices (PONs) are usually open-ended, seeking to hire multiple contractors for various tasks or research projects.

Step 8. Contractor work commences according to contract and NYSERDA monitors and manages contract work and contractor performance.

While NYSERDA's administration of the **New York Energy SmartSM** program is paid for from the total of \$177 million being administered by NYSERDA, the early phases of program planning, design, and implementation, were carried-out by existing NYSERDA staff, prior to any new staff being hired directly to administer individual **New York Energy SmartSM** programs.

Solicitation Process

NYSERDA has issued 52 solicitations, including 32 solicitations for program implementation and 20 solicitations offering financial incentives directly to customers.¹⁴ The schedule of solicitations by type is presented in Table 4-3 for each of the **New York Energy SmartSM** major program areas. Approximately one-third of the solicitations were issued in the first six months of the **New York Energy SmartSM** program (31%), from July 1, 1998 to December 31, 1998. The majority of the 52 solicitations (50%) were issued in calendar year 1999. And 19% have been issued in the current year through June 30, 2000. Overall, the timing of these solicitations is tracking well with the anticipated pace of program development.

Program Implementation Solicitations

NYSERDA issues solicitations to competitively select and hire contractors for program design and or implementation. Solicitations take the form of either a Request for Proposals (RFP), or Program Opportunity Notice (PON). Of the 32 solicitations released through June 30, 2000, 27 are closed with signed contracts, the other five have closed and are in the contractor selection and negotiation stage. For the 27 solicitations that are closed with signed contracts, 14 were RFPs and 13 were PONs. The RFPs resulted in 92 proposals being received and 27 contracts being funded (or 29%), while the PONs resulted in 223 proposals received with 69 contracts awarded (or 31%). Overall, 315 proposals were received and 96 contracts were awarded. The low percentage of proposals approved for funding is indicative of the competitiveness of the solicitations, and it shows that the Technical Evaluation Panels (TEPs) were provided ample opportunity to select the most qualified contractors.

¹⁴ Of the 52 solicitations, 49 are closed and three, the New Construction, and Premium Efficiency Motors program incentive solicitations, and the **New York Energy SmartSM** Loan Fund solicitation for interested borrowers and lenders, remain open at this time.

TABLE 4-3: Schedule of Solicitations by Major Program Area through June 30, 2000

Program Area	Solicitation Type	1998 (6 Months)	1999 (12 Months)	2000 (6 Months)	TOTAL (24 Months)
Energy Services Industry					
	Program Implementation	2	0	0	2
	Incentive Offering	1	3	0	4
Market Transformation					
	Program Implementation	4	8	1	13
	Incentive Offering	1	2	1	4
Technical Assistance and Outreach					
	Program Implementation	0	2	1	3
	Incentive Offering	3	6	3	12
Low-Income Direct Installation					
	Program Implementation	1	0	0	1
	Incentive Offering	n/a	n/a	n/a	n/a
Low-Income Market Based Strategies (Aggregation)					
	Program Implementation	0	0	1	1
	Incentive Offering	n/a	n/a	n/a	n/a
Low-Income Public Housing Coordination					
	Program Implementation	0	0	1	1
	Incentive Offering	0	0	0	0
Low-Income Affordable Assisted Housing					
	Program Implementation	0	0	0	0
	Incentive Offering	0	0	0	0
Low-Income Public Awareness					
	Program Implementation	0	0	0	0
	Incentive Offering	0	0	0	0
R&D: Renewables					
	Program Implementation	1	3	1	5
	Incentive Offering	n/a	n/a	n/a	n/a
R&D: Energy Efficiency & Strategic					
	Program Implementation	1	1	0	2
	Incentive Offering	n/a	n/a	n/a	n/a
R&D: Environmental					
	Program Implementation	2	1	1	4
	Incentive Offering	n/a	n/a	n/a	n/a
TOTAL Solicitations					
	Program Implementation	11	15	6	32
	Incentive Offering	5	11	4	20

Incentive Offerings

Of the 20 incentive solicitations to date, sixteen have closed and four remain open. Nearly 660 applications have been received in response to these solicitations and almost 570, or 86% of the applications, have been approved for funding. It should be noted that the number of incentive offerings through solicitations does not represent total incentive activity. The FlexTech, Direct Installation, and Residential Appliances and Lighting programs, for example, offer incentives to participants without a solicitation process. Incentives can also be approved contingent upon work being completed, and as a result, it is possible that some of the approved applicants will not receive awards if work is not

completed.

Process Cycle-time

In addition to evaluating the competitiveness of the solicitation process and monitoring the implementation status of each project (or contract), cycle-times have been calculated and tracked for each solicitation as part of this process evaluation. One measurement of cycle-time pertaining to the eight-step process shown previously in Figure 4-4 is the median number of weeks between steps, for example, from Step (1), Program Development Management Committee (PDMC) approval of the Project Planning Request (PPR), to Step (2), and (3) etc., and on to Contract Award and signing, Step (7). The length of time between Step (1), PPR approval, and Step (7), contract signing, varies among programs for many reasons, including: the number and diversity of proposals or applications received and reviewed; proposed co-funding arrangements and difficulty in formalizing agreements; the unique contract terms and conditions required by contractors; and the type of solicitation (RFP or PON or incentive offering), to name a few.

On average, the cycle-time for PONs is longer than RFPs for two main reasons: (1) PONs are designed to hire multiple contractors (in some cases up to 20) to perform varied tasks and research projects, whereas RFPs seek to hire one or two highly specialized contractors for very specific tasks; and (2) PONs often receive more than twice as many proposals as RFPs. Overall, the median cycle-time is 36 weeks for RFPs, 52 weeks for PONs, and close to 32 weeks for incentive offerings. Cycle-time is reported for three main phases:

1. The time from the Project Planning Request (PPR) approval date to the solicitation release date.
2. The time that solicitations remain open.
3. The time from the proposal or application due date to the first contract being signed.

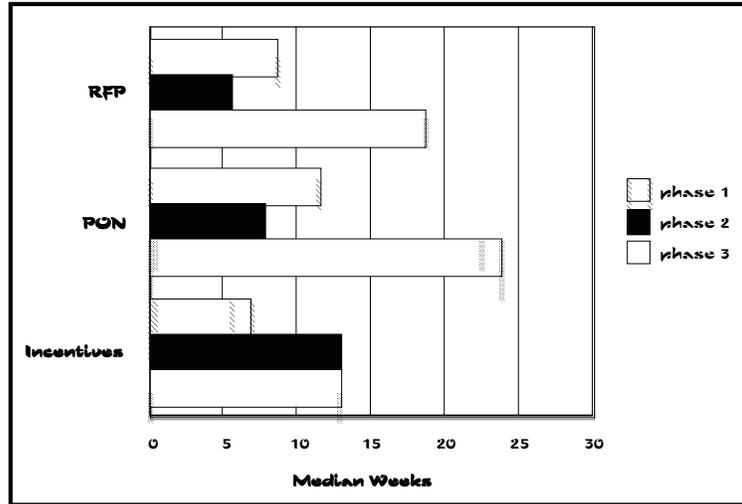
The median number of weeks for each of these three phases is presented in Figure 4-5 for RFPs, PONs, and incentive offerings. Since the median number of weeks was calculated for each stage of each solicitation (meaning that a different solicitation can represent the median in each phase) the sum of the three phases in Figure 4-5 will not equal the total median cycle-time reported above. Process results to date show:

- NYSERDA's development of solicitations took a median of 8.7 weeks for RFPs, 11.7 weeks for PONs, and 6.9 weeks for the incentive offerings.
- The time allotted for contractors or customers to respond to a solicitation was a median of 5.6 weeks for RFPs, 7.9 weeks for PONs, and 13 weeks for the solicitations offering incentives.

- The time from the proposal due date to contract signing was a median of 18.7 weeks for RFPs, 23.9 weeks for PONs, and 13.1 weeks for incentives. This last phase has added significance since it represents the time that contractors and customers are anticipating a potential award from NYSERDA.

Reported cycle-time data should be viewed with caution, however, since it represents the time it took to plan, design, and implement an entirely new set of programs not previously offered by NYSERDA. The number of solicitations issued by NYSERDA doubled from approximately 25 to 50 over the course of one year with the implementation of the **New York Energy SmartSM** program. During this same year, the number of contracts executed by NYSERDA more than

FIGURE 4-5: Cycle-time (Median Weeks per Phase)



quadrupled to about 700 contracts. It is expected that cycle-time will decrease as experience is gained with designing and implementing these programs. An interdisciplinary team of NYSERDA’s management is currently reviewing all aspects of solicitation cycle-time in an effort to improve the efficiency of the process and reduce total cycle-time between phases. As part of the **New York Energy SmartSM** program evaluation effort, NYSERDA is also engaging contractors and customers for feedback on how the solicitation process might be improved, making it easier for them to respond to these opportunities and do business with NYSERDA. Feedback and suggestions received through in-depth interviews with applicants and proposers is summarized in the sections below. Overall, the cycle-time reported must be viewed in the context of the competitive solicitation process and the ramping-up of program activities, prior to new NYSERDA staff being hired to administer the **New York Energy SmartSM** programs. Additional information regarding cycle-time for individual projects (RFPs and PONs) is provided in Appendix C of this report.

Solicitation Process Interviews

To assess the effectiveness of the **New York Energy SmartSM** program solicitation, contracting, and project start-up process, one of NYSERDA’s evaluation assistance contractors, GDS Associates, Inc. has conducted several process interviews. The purpose of these interviews was to assess the **New York Energy SmartSM** program RFP and PON solicitation process, NYSERDA’s contracting process, and

project initiation and start-up process. Between April 20 and April 26, 2000, six NYSERDA program managers; five NYSERDA contractors; and two program customers were interviewed. As a follow-up to this earlier research, four additional non-winning contractors and two non-winning customers were interviewed during the week of June 26 to June 30, 2000. Three separate interview guides were developed to gain feedback from: (1) NYSERDA program managers, (2) winning contractors and customers, and (3) non-winning contractors and customers. Interview guides were largely qualitative, and designed to be complimentary to one another and applicable across a wide array of programs. While some recommendations were made during the interviews by respondents to modify the process (many of which NYSERDA is now investigating), the primary purpose of this effort was to “hear the voice” of program managers, contractors, and customers involved in the **New York Energy SmartSM** program.

Highlights of these interviews are provided in the following sections. The results of these interviews (compiled by NYSERDA’s evaluation assistance contractor) can be summarized as follows:

1. Overall, the RFP and PON development and distribution process is working well.
2. Overall, the selection process appears to be working fairly well. There is a great deal of effort by NYSERDA to ensure that the best projects and contractors are chosen. However, the time required for contractor selection was a major problem for many respondents.
3. The project initiation and start-up process is successful for most projects due to: (1) the ability of many contractors and NYSERDA staff to “gear-up” before a contract is in place, and (2) the ability of NYSERDA staff to remain flexible to changes in project scope and direction.
4. Overall, it appears that the solicitation (RFP and PON), contracting, and project initiation processes are working very well. In fact, as NYSERDA staff gains experience with the process for these new programs, steady improvement is occurring.

Solicitation Development and Distribution

The following summarizes the responses by contractors, customers, and NYSERDA managers regarding solicitation development and announcement.

Clarity of Solicitations. Overall clarity of the solicitations was rated highly by both winning and non-winning bidders. While contractors often had questions, these questions were specific to unique situations and did not appear to have resulted from a lack of information provided by NYSERDA. All of the customers interviewed felt that the PONs were extremely clear.

One winning contractor felt that the RFPs needed to be clearer and more concise in defining the most important elements, stating that “*..the RFPs are getting clearer, some of the earlier ones were a bit*

convoluted. However, it would be helpful to streamline be careful that they are not asking for something in Part B that they already requested in Part A.”

Another winning contractor felt that “...*the RFP was as clear as possible under the circumstances. If there had been any additional detail it would have stifled innovation.*” This point was echoed by NYSERDA program managers who felt that they were walking a fine-line between “*enough guidance and too much detail.*”

Encouraging Innovation. NYSERDA program managers and contractors agreed that solicitations encouraged innovation. In fact, some of the solicitations cite examples of the types of ideas that NYSERDA considers “innovative.” Respondents cited specific examples where NYSERDA staff was flexible and willing to try new ideas.

NYSERDA Staff Responsiveness and Experience. Contractors generally felt that the experience and helpfulness of NYSERDA staff was excellent. However, comments were expressed (by both contractors and staff) regarding the workload being experienced in implementing programs. Two contractors in particular praised the qualifications and dedication of NYSERDA staff but described them as “stretched” and “very understaffed.” This raised some concern during the selection process where, in some instances, the time required to select a contractor was seen as being too long.

Teaming Strategies. Overall, the concept of teaming appears to have been embraced by both NYSERDA and contractors. However, one contractor felt that there was too much emphasis being placed on teams. This contractor felt that large teams are difficult to manage and suggested that if NYSERDA wants different contractors for improving teaming arrangements that it should issue separate RFPs for different tasks and purposes. It was also suggested that NYSERDA set up lists of firms who were interested in teaming and make the list available to potential bidders, and help bidders to establish relationships with utilities in order to leverage other programs.

Solicitation Distribution Channels. NYSERDA’s website appears to be the method of choice for most contractors to learn of upcoming solicitations. One non-winning contractor stated that the website “... *is great ... it allows me to make more informed decisions on which projects to bid on. It probably helps NYSERDA also since I am more likely to bid on the projects where I have the greatest expertise.*”

Mailings appear to be inconsistent, for example, contractors indicated that they receive mailings on only some of the solicitations that they are interested in and not others. Customers, however, do rely on these mailings and word of mouth to learn about program opportunities. They were pleased that NYSERDA staff will bring up programs or opportunities that might interest them while engaged in other conversations.

There were numerous suggestions on how the distribution process could be enhanced including: the use of electronic mail for updates alerting bidders to check an area of the website featuring projects of interest to them; more detailed on-line information on upcoming solicitations; and forecasts and outlooks by mail for those decision makers who do not have access, or do not regularly use the Internet.

Proposal Submittal. Overall, contractors felt that the time-frame for proposal submittal was very fair. One non-winning contractor indicated that NYSERDA's submittal time-frames were typically more generous than average. Customers thought that the application was simple, and even non-winning customers were not deterred from submitting (usually successfully) the second time.

It was recognized that small firms might have difficulty in meeting the solicitation guidelines and deadlines. Streamlined applications and proposals, longer-lead times (or more advance notice before solicitations are released), and longer application and proposal acceptance periods may help smaller firms participate in programs. However, this needs to be balanced against concerns over cycle-time from the time a project is announced to the time it takes to enter into contracts for services. One contractor suggested that NYSERDA consider doing interviews with proposers. This would allow smaller firms, or those without great writing capabilities, to showcase their talents and ideas.

Contractors also suggested that there be more coordination between NYSERDA program managers regarding the issuance of RFPs. One respondent stated that "*Sometimes too many RFPs come out at once. This ends up limiting our options in terms of what we can submit.*"

Selection and Contracting. All respondents were asked if the selection criteria were clear, and if they understood how contractors and customers were selected. NYSERDA staff were asked questions specifically about: reasons for rejecting proposals; competitiveness of solicitations; innovations being proposed; niche markets being filled; synergies between projects; and possible selection process improvements. Contractors were asked to comment on: innovation; the length of the contracting process; responsiveness of NYSERDA staff to inquiries; and suggestions for improving the contracting process.

A great deal of effort is devoted to contractor selection to ensure that the most qualified contractor is chosen based on the particular scoring criteria for each solicitation. Still, eight out of ten contractors responded that they did not understand the selection criteria. Winning contractors did not express a concern about this since their projects were funded. Non-winners, however, voiced this as one of their major complaints with NYSERDA's solicitation process.

Several contractors agreed that the length of time to secure a contract was too long. By the time contractors heard from NYSERDA that they had been selected, resources had often been redirected

toward other projects. NYSERDA project managers are well aware of this issue, and are actively looking for ways to shorten the process, not only in the selection of contractors, but also during contracting and program initiation. One suggestion was made by a contractor that NYSERDA relax some of the pricing and billing requirements, and perhaps not require such detailed accounting on a task-by-task basis. Another suggestion was made to perhaps eliminate the TEP review for “cookie cutter” type projects less than a certain dollar amount. On the other hand, customers of the Energy Feasibility Studies program were surprised at how quickly the selection and contracting process proceeded. It should be noted that the Technical Assistance programs, including Energy Feasibility Studies, operate differently from other programs in that they provide opportunities for customers to participate through several rounds of incentive offerings with very short application periods to allow for quick approval of a large volume of studies.

Some additional suggestions for improving the selection and contracting process include: listing the proposal evaluation criteria in order of importance, providing workshops for customers having trouble with the application process, and providing customers with a list of recommended consultants for them to use.

Project Initiation. Respondents were asked to describe the successes and failures encountered in getting programs started, major difficulties encountered, and the working relationship between the contractor and NYSERDA staff. Contractors were pleased that they had an opportunity to “gear-up” (and get started) before a contract was in place. Contractors also noted that NYSERDA staff remained flexible to changes in project scope and direction. It was recommended, however, that NYSERDA adhere to proposed project start-up dates as closely as possible since delays can create havoc for a contractor’s planned allocation of resources. Delays also affect the quality of the job since the best employees may no longer be available to work on the project as it was proposed.

Summary of Interview Observations. The following summarizes the observations offered by contractors, customers, and NYSERDA staff regarding the solicitation, contracting, and project initiation process. They commented positively on:

- NYSERDA staff experience and overall responsiveness.
- NYSERDA’s website (particularly the advance notice of upcoming solicitations).
- The project planning and management process, especially the TEPs and working groups.
- Flexibility, on the part of both NYSERDA staff and contractors, to work through issues and reach common understandings.
- Overall clarity of the RFPs and PONs.

- The multi-round, rolling selection process of the Energy Feasibility Studies program.
- Overall bidder satisfaction with NYSERDA's solicitation process (as seen through general comments and the high percentage of repeat bidders).

The following suggestions were made for consideration in future process improvements or modifications:

- Improving marketing and outreach to "get the word out" about current and upcoming solicitations.
- Maintaining an inclusive and consistent mailing list.
- Lengthening the lead-time (by providing more advance notice before solicitations are officially released), and providing more detailed descriptions in project announcements.
- Streamlining the proposal and application process.
- Reducing the length of time for the selection process.
- Reducing the length of time for the contracting process.
- Improving notification and debriefing procedures for non-winners.
- Adhering to project start-up dates whenever possible.

Working to shorten the overall solicitation process will solve the majority of the contractors' issues with the process. NYSERDA's integrated model for **New York Energy SmartSM** program evaluation (as described in Section 2) ensures that comments and recommendations on the solicitation, selection, and project initiation process are explored more fully. NYSERDA has convened a cross-disciplinary staff team to explore solicitation process improvements.

Additional Process-Related Survey Results

As part of the overall **New York Energy SmartSM** program evaluation effort, NYSERDA and GDS Associates, Inc., are conducting participant and non-participant surveys for the Premium Efficiency Motors, Residential Appliances and Lighting, Technical Assistance, and Low-Income Direct Installation programs. Participant surveys commenced in July 2000, to collect feedback on how participants heard about and became involved in programs, how they view the application and incentive processes, their level of satisfaction with the materials and services provided by NYSERDA and implementation contractors, and any changes in awareness, knowledge, and business practices that might have resulted from their involvement in the **New York Energy SmartSM** program. Two of the planned participant surveys - Premium Efficiency Motor vendors and Residential Appliances and Lighting retail partners -

are now complete. The process-related results are presented below for these two programs. Results which highlight program impacts regarding awareness, knowledge and business practices, are discussed later in the Progress part of Section 4.

Premium Efficiency Motors Program Participant Survey Results

A total of eight vendors participating in the Premium Efficiency Motors program were surveyed between July 10 and July 21, 2000. The vendors surveyed indicated that they heard about the program through a variety of means, including: telephone contact from Honeywell DMC, the vendor assistance contractor hired by NYSERDA (63%); mailings from NYSERDA (50%); colleagues (38%); and telephone contact from NYSERDA staff (25%).¹⁵

Six of the eight vendors surveyed said that they received assistance from Honeywell DMC in completing the program application. One vendor received assistance from both Honeywell and NYSERDA staff. Five of the seven vendors (70%) who received assistance in completing the application said that they would not have joined the program without this assistance. On average, vendors thought that it took about 35 days for their applications to be approved.

Respondents cited several factors as important in their decision to participate in the Premium Efficiency Motors program. The top three reasons were:

1. The possibility that the program might provide access to new customers (75% of respondents rated this as being very important and 25% rated it as important).
2. The opportunity to enhance their firm's ability to market Consortium for Energy Efficiency (CEE)-qualified motors (63% of respondents rated this as being very important and 25% rated it as important).
3. The opportunity to increase sales of CEE-qualified motors (75% of respondents rated this as being very important and 13% rated it as important).

All eight vendors surveyed indicated that they had sold some CEE-qualified motors since joining the program. However, only five of the eight vendors (63%) had submitted documentation to receive their incentives. The three vendors who had not submitted for the incentives said that the process and paperwork were too tedious and time-consuming, and that the amount of the incentive was not worth the effort. One of these vendors said that they joined the program not for the incentives, but to encourage their sales staff to promote CEE-qualified motors.

¹⁵ Respondents could give more than one answer.

Seven of the vendors (88%) said they were aware of recent changes that NYSEERDA has made to streamline the application process and increase the incentive levels. All of these vendors thought that the changes would make the program more accessible and attractive to participants. These program changes are discussed in more detail in Section 6 of this report. All of the vendors indicated that they were either “satisfied” (63%), or “extremely satisfied” (38%), with the Premium Efficiency Motors program overall, and “satisfied” (50%) or “extremely satisfied” (50%), with the assistance they receive from Honeywell DMC.

Residential Appliances and Lighting Program Participant Survey Results

A total of 10 randomly-selected retail partners in the Residential Appliances and Lighting program were surveyed between July 11 and July 18, 2000. All of the retailers surveyed indicated that they received information on the Residential Appliances and Lighting program from an ENERGY STAR® field representative. These field reps (also known as “circuit riders”) have been hired by the program implementation contractor, Aspen Systems Corporation, to recruit and train participating retailers.¹⁶ Six of the retailers were contacted once by a field representative before signing onto the program, two retailers were contacted twice, and the other two retailers had to be contacted three times before signing the participation agreement. Six out of 10 retailers (60%) said that they would not have joined the program without the assistance of their ENERGY STAR® field representative. While most retailers felt the process to become a partner worked well, a few stated that it would be easier if there were less paperwork involved. One retailer, in particular, thought that the application process was overwhelming for smaller businesses.

Retailers cited several reasons as important in their decision to participate. The top three reasons were:

1. The possibility that the program might help increase sales of ENERGY STAR® products (70% of respondents rated this as being very important and 30% rated it as important).
2. The opportunity to provide a valuable service to the community by helping the environment (60% of respondents rated this as being very important and 40% rated it as important).
3. The opportunity to enhance their store’s ability to market ENERGY STAR® products (50% of respondents rated this as being very important and 30% rated it as important).

Five of the 10 retailers (50%) surveyed have already applied for the program’s cooperative advertising

¹⁶ Rather than responding to a competitive solicitation, interested parties sign a Retailer Participation Agreement in order to join the program.

incentives.¹⁷ All five retailers received assistance from an ENERGY STAR[®] field representative in filling out the incentive application. Two of the five retailers (40%) indicated that they would not have applied for the incentive without this assistance. Three of the five retailers who have not yet applied for incentives indicated that they plan to do so. The remaining two retailers do not plan to apply for incentives because they view the process as not being worth the effort. Seven of the 10 retailers (70%) were either “satisfied” (60%), or “extremely satisfied” (10%), with the Appliances and Lighting program overall.

The above results indicate that the ENERGY STAR[®] field representatives are invaluable in the process of recruiting retail partners and encouraging cooperative advertising to promote the ENERGY STAR[®] message. In terms of the individual attention from the program’s ENERGY STAR[®] field representatives, eight retailers were “extremely satisfied” (80%), and one retailer was “satisfied” (10%). When asked to rate how valuable the set of services and materials provided by the program was to them on a scale of one to five (with one being not of value and five being of significant value), the mean answer was a four for “valuable.”

The full set of participant survey results for both Premium Efficiency Motors and Residential Appliances and Lighting has been shared with **New York Energy SmartSM** program managers so that they can determine ways to better serve program participants and meet program goals. The remaining participant surveys are expected to be completed in late Summer 2000, and non-participant surveys will begin soon after in the Fall of 2000.

PROGRESS REPORTING

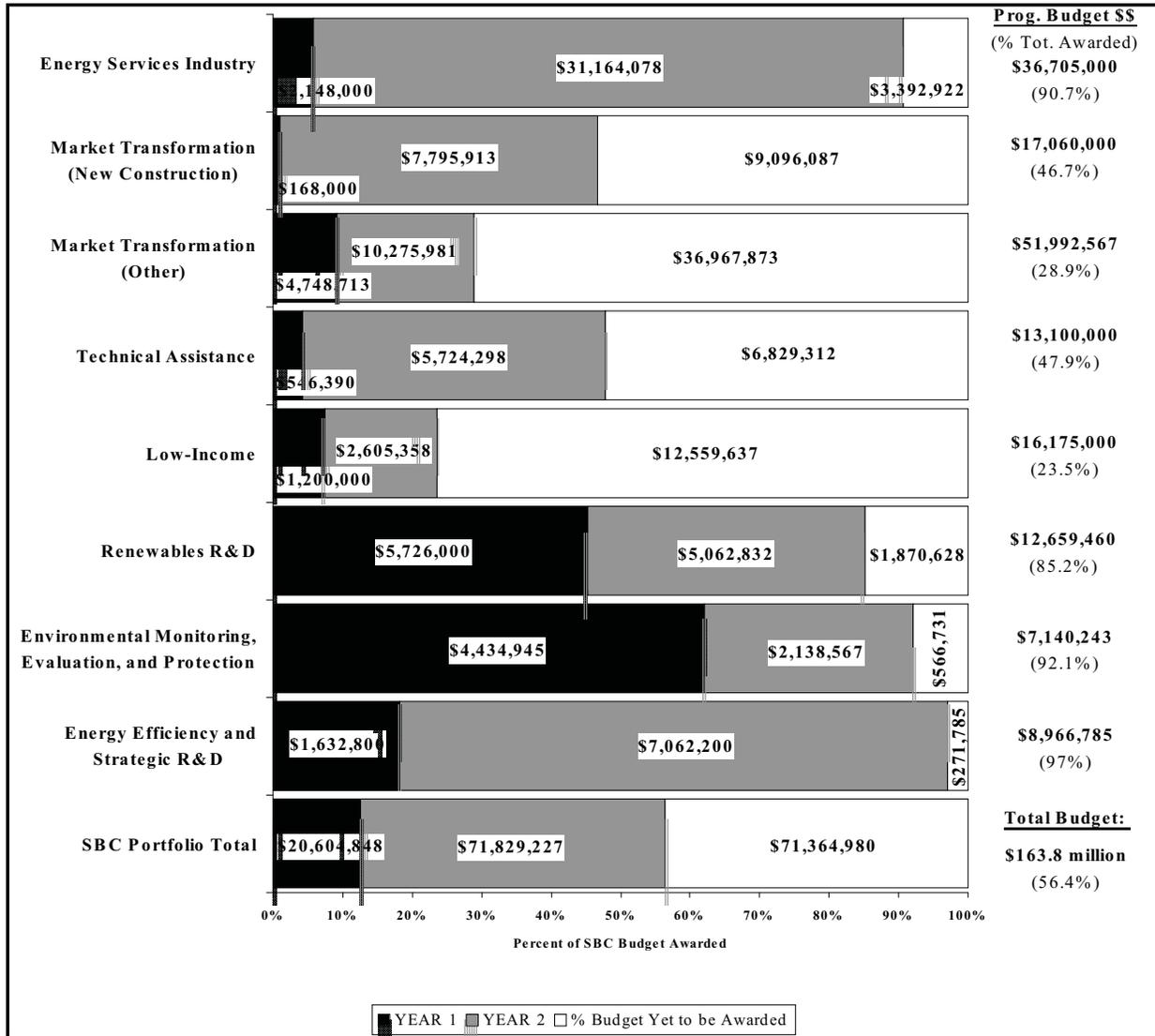
Program Spending

For evaluation purposes, the **New York Energy SmartSM** program budgeting and spending activity is tracked according to several indicators. Earlier in this section, program budget information was presented in terms of funding that was committed and planned. In the remainder of this section, unless noted otherwise, budget information is presented in terms of “funds awarded & pending,” representing funds that have been approved by NYSERDA (awarded); or are pending approval as a result of incentive applications that have been received. Funds awarded & pending is a subset of committed funds and represents a more immediate measure of program activity, since it excludes funds set aside for solicitation offerings for which applications have not been received.

¹⁷ Retail participants in the Residential Appliances and Lighting program must fill out an application, rather than responding to a competitive solicitation, to receive incentives.

Funding activities for the **New York Energy SmartSM** individual program efforts are presented in Figure 4-6, identifying funds awarded & pending for years one and two, and funds remaining for year three. Total funding for the energy efficiency, low-income, and R&D programs, less NYSERDA's administration and evaluation costs, is approximately \$163 million,¹⁸ as shown in the furthest right

FIGURE 4-6: Funds Awarded & Pending by Year



column in Figure 4-6. Over 50% of the available program budget is either awarded or pending award based on applications received through June 2000. These are funds that have been paid, or will be paid shortly, to NYSERDA contractors and customers.

¹⁸ Excluding the \$2.9 million for the Environmental Disclosure program.

The distribution of **New York Energy SmartSM** funds awarded & pending is presented in Table 4-4 by the sector receiving funding, for those programs for which funding is able to be allocated by sector. The R&D programs, with the exception of the photovoltaic (PV) programs, are not included in Table 4-4 as the benefits from these programs cannot be allocated to a particular sector.

TABLE 4-4: Sector Distribution of Funds Awarded & Pending ⁽¹⁾

	% Commercial	% Indust.	% Govt.	% Institutional	% Non-Profit	% Residential	% Low-Income	\$ (% of Individual Program Budget)
Energy Services Industry								
Standard Performance Contract	31%	39%	11%	18%	0%	2%	0%	\$31.4 million (88%)
Institutional Performance Contracting Assistance	0%	0%	0%	100%	0%	0%	0%	\$2.0 million (59%)
Market Transformation								
New Construction	25%	10%	17%	42%	0%	6.4%	0%	\$8.0 million (47%)
Premium Efficiency Motors	67% ⁽²⁾	33%	0%	0%	0%	0%	0%	\$0.4 million (18%)
Residential Appliance & Lighting and ENERGY STAR [®] Awareness Campaign	0%	0%	0%	0%	0%	100%	0%	\$6.4 million (38%)
Innovative Opportunities: C/I and Residential programs	31%	7%	14%	14%	0%	33%	2%	\$2.3 million (67%)
Loan Fund	100% ⁽³⁾	0%	0%	0%	0%	0%	0%	\$0.4 million (4%)
Technical Assistance								
C/I Technical Assistance Programs	18%	18%	16%	33%	5%	8%	0%	\$5.8 million (51%)
Low-Income								
Direct Installation	0%	0%	0%	0%	0%	0%	100%	\$1.9 million (19%)
Renewable Programs								
Commercial and Residential PV (Photovoltaic)	10%	0%	13%	21%	12%	44%	0%	\$4.2 million (91%)
Overall								
Distribution to Date	23%	23%	11%	24%	1%	17%	3%	\$63 million (56%)
Distribution after program budgets are fully expended	27%	16%	9%	19%	1%	20%	9%	\$114 million (100%)

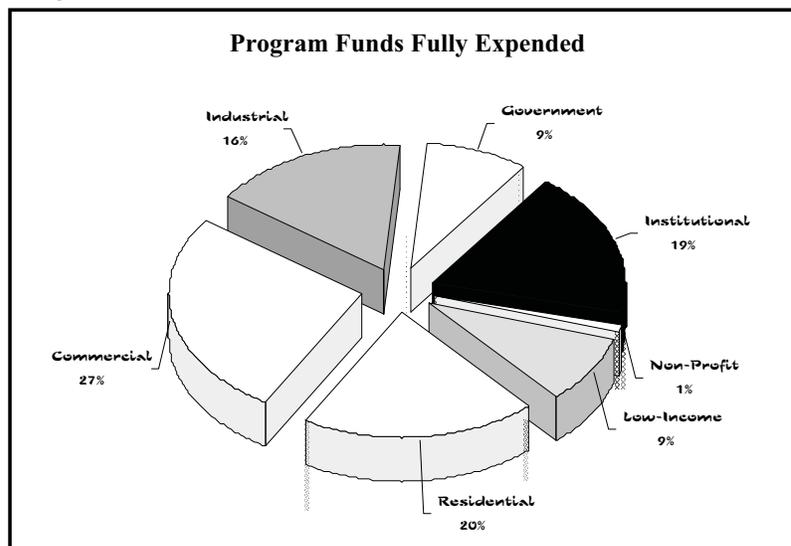
(1) This table does not include those programs that are not currently operational and those R&D programs for which funding impacts multiple sectors, e.g., Strategic and Energy Efficiency R&D.

(2) Sector distribution based on industry data on motor drive use.

(3) Assumed to be 100%. Sector data currently not available.

Row 1 of Table 4-4 shows that the Standard Performance Contracting program has \$31.4 million awarded or pending (consisting of \$2.4 million for design and implementation assistance and \$29 million in incentives) to various sectors. Funds awarded to design and implementation contractors were allocated among the sectors based on the distribution of incentive awards. The Institutional Performance Contracting Assistance program has awarded \$2.0 million to the institutional sector. The New Construction program has \$8 million awarded or pending (consisting of \$.8 million for design and implementation assistance and \$7.2 in incentives) to various sectors. The Premium Efficiency Motors program has approximately \$440,000 awarded or pending (consisting of \$267,000 awarded to design and implementation contractors and approximately \$176,000 in incentives). The Residential Appliances & Lighting and the ENERGY STAR® Awareness programs have together awarded \$6.4 million (consisting of \$1.9 million in advertising and incentives and \$4.5 million for program design and implementation) to serve the residential sector. The C/I Loan Fund has awarded approximately \$350,000 for design and implementation and \$50,000 in incentives. The five C/I technical assistance programs have awarded \$5.8 million in incentives to end-use customers in various sectors. The Low-Income Direct Installation program has awarded approximately \$1.9 million (consisting of \$1.2 million for program design and implementation assistance and \$720,000 for installation of measures) to the low-income sector. The C/I and residential PV (photovoltaic) programs have awarded \$4.2 million to contractors to install PV systems. The anticipated overall distribution of funding once the programs listed are fully subscribed is depicted in Figure 4-7. With recent residential and low-income programs just beginning, the percentage shares for these sectors are expected to increase.

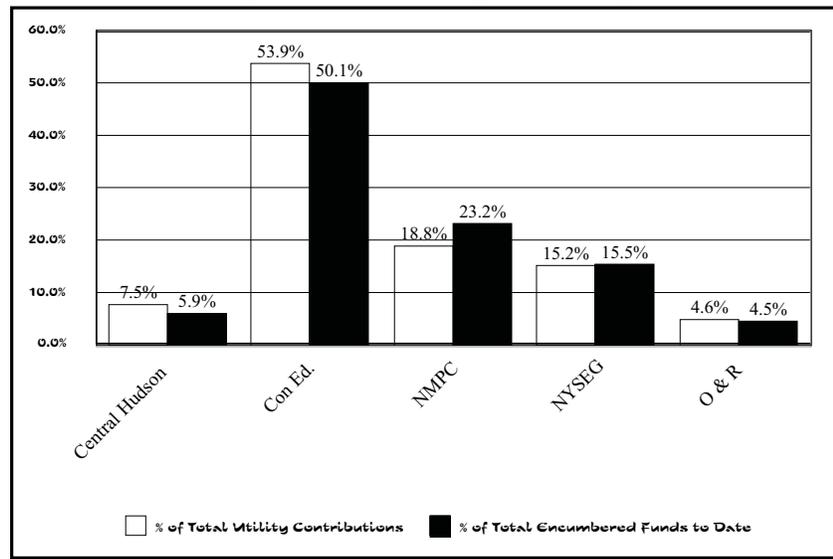
FIGURE 4-7: Funding Distribution by Sector for Operational Programs



A comparison of **New York Energy SmartSM** program funding with contributions by utilities is shown in Figure 4-8. The first set of bars represents the proportion of **New York Energy SmartSM** program funds contributed by the utilities through the System Benefits Charge. The second set of bars represents the proportion of all encumbered funds distributed to date within the utility service areas, determined by where proposed work is to be performed. Funding provided to implementation contractors or program

outreach were allocated to utility service areas in proportion to each service area's contribution to the total System Benefits Charge (SBC) funding. To date, the distribution of encumbered funding to the service areas is similar to the relative utility contributions, as shown in Figure 4-8.

FIGURE 4-8: Comparison of Funding with Utility Contributions

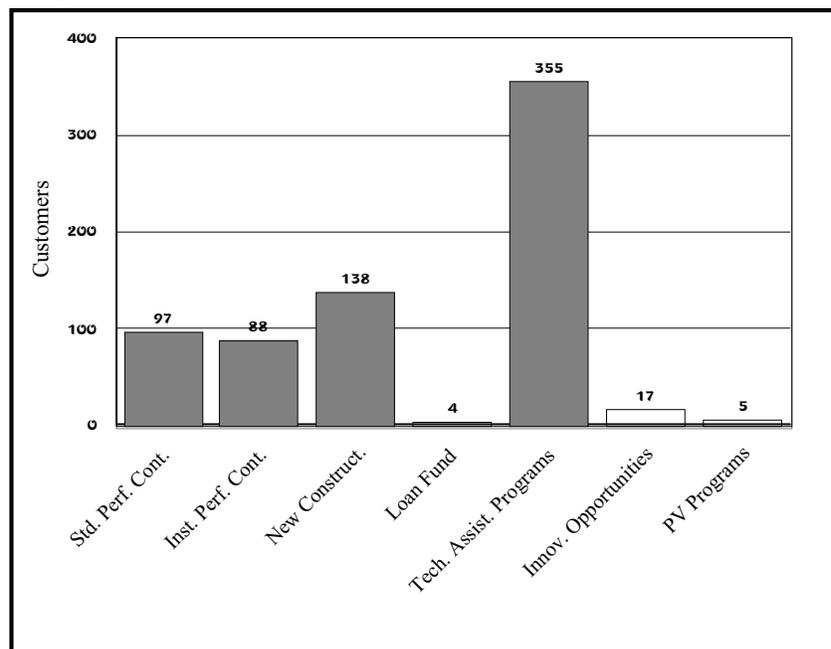


Customers Served

The number of customers served to date by the **New York Energy SmartSM** program is estimated at about 2,300. The number of customers served for selected programs is presented in Figure 4-9. In order to present the data graphically and maintain a reasonable scale, Figure 4-9 excludes more than 1,200 low-income households that have received new appliances and lighting measures through the Direct Installation program. Also omitted from the graph are the number of customers that purchased 327 motors through vendors participating in the Premium Efficiency Motors program. The estimated total number of customers served does not include

FIGURE 4-9: End-Use Customers for Selected Operational Programs

customers that have purchased ENERGY STAR[®] appliances and lighting products as a result of the Residential Appliances & Lighting and ENERGY STAR[®] Public Awareness programs. It is estimated, however, that the number of ENERGY STAR[®] appliances and home electronics sold since these programs have been operational has increased by about 160,000 units.



As indicated in Figure 4-9, the Standard Performance Contracting program is serving 97

- Government agencies and research institutions;
- Environmental groups;
- Customizers, installers, remodelers, and builders;
- Engineering firms;
- ESCOs; and
- Implementation contractors.

The number of participating allies is expected to increase significantly in coming months as more of the **New York Energy SmartSM** programs become operational, and currently operational programs continue to expand their network of market actor relationships.

Co-Funding and Leveraging

The **New York Energy SmartSM** program has attracted significant external funding, including matching funds and new investment, as illustrated in Table 4-5 for those programs that are currently operational. Co-funding is the portion of total project cost that is (or is expected to be) shared by customers or program allies. Leveraging applies to capital investment in energy efficiency improvements to be made by facility and building owners, following the identification of savings opportunities (from the Institutional Performance Contracting Assistance program, for example). The combined private sector co-funding and leveraged investment, based on current program activity, is over \$326 million as shown in Table 4-5. The ratio of external spending to **New York Energy SmartSM** program funding is approximately 3.9 to 1, meaning that for every \$1 of **New York Energy SmartSM** funds spent, \$3.9 is spent or invested by others.

TABLE 4-5: Co-funding and Leveraged Investments Funds Awarded & Pending

	[1] Funds Awarded & Pending Award (\$ million)	[2] Anticipated Co-funding (\$ million)	[3] Anticipated Leveraged Investment (\$ million)	[4] Total External Spending [2] + [3] (\$ million)	[5] Ratio of External Spending to New York Energy SmartSMFunds
Energy Services Industry					
Standard Performance Contract	\$31.4	\$74.8 ⁽¹⁾	---	\$74.8	2.4 to 1
Institutional Performance Contracting Assistance	\$2.0	\$2.9	\$27.9 ⁽²⁾	\$30.7	15.4 to 1
Market Transformation					
New Construction	\$8.0	\$9.4 ⁽³⁾	---	\$9.4	1.2 to 1
Premium Efficiency Motors	\$0.4	\$0.6 ⁽³⁾	---	\$0.6	1.6 to 1
ENERGY STAR [®] Awareness and Residential Appliance & Lighting	\$6.4	\$0.9 ⁽⁴⁾	\$10.8 ⁽⁵⁾	\$11.7	1.8 to 1
Innovative Opportunities					
Geothermal Heat Pump project	\$0.3	\$0.1	\$46.7 ⁽⁶⁾	\$46.8	148.1 to 1
Other Innovative Opportunities Projects	\$2.2	\$0.3	---	\$0.3	0.1 to 1
Technical Assistance					
C/I Technical Assistance Programs	\$5.8	\$6.1	\$54.0 ⁽⁷⁾	\$60.1	10.4 to 1
Low-Income					
Direct Installation	\$1.9	\$0.4 ⁽⁸⁾	---	\$0.4	1 to 0.2
Research and Development					
Renewables					
Wind	\$6.0	\$37.1	---	\$37.1	6.2 to 1
PV	\$4.2	\$8.4	---	\$8.4	2.0 to 1
Willow Plantation	\$0.9	\$16.9	---	\$16.9	19.2 to 1
Environmental Monitoring, Evaluation and Protection	\$6.6	\$7.0	---	\$7.0	1.1 to 1
Energy Eff. & Strategic R&D	\$8.7	\$21.7	---	\$21.7	2.5 to 1
Total	\$84.6	\$186.7	\$139.3	\$326.0	3.9 to 1

(1) Estimated full cost of measures less SBC funding.

(2) Estimated full cost of measures assuming 2/3 of the audit recommendations are implemented.

(3) Estimated incremental cost of upgrading to higher-efficiency measures less SBC funding.

(4) Includes advertising spending by participants, and the value of public service announcements and media promotions.

(5) Estimated incremental cost of ENERGY STAR[®] products for the reported increase in ENERGY STAR[®] product sales following the start of these **New York Energy SmartSM** programs.

(6) Average cost of each heat pump system (\$2 million) multiplied by 2/3 of the 35 planned studies.

(7) Estimated full cost of measures assuming that 2/3 of the recommendations from the FlexTech and Energy Feasibility Studies programs are implemented. These two programs recommend energy-efficiency capital improvements in addition to operational improvements that do not necessitate capital improvements.

(8) Contribution by the Weatherization Assistance Program (WAP) and participating building owners toward cost of measures.

Electricity Savings

The anticipated electricity and demand savings, for programs with current experience. For program funds awarded & pending, the expected electricity savings is 487 million kWh annually and 140 mW of demand savings. For program funds fully subscribed, the expected electricity savings is 713 million kWh annually and 200 mW of demand savings. Since many programs have just recently been initiated, and as a result, have no experience to date, these estimates exclude a substantial amount of anticipated program activity. For example, energy and demand savings likely to be realized through the Commercial HVAC, Small Commercial Lighting, residential loan programs, the Residential Building Performance Initiative, and the Residential New Construction program, are not included.

While electricity generated from wind power does not reduce kWh usage, it does have the effect of reducing electricity generation from fossil-fueled electricity generating plants, resulting in environmental benefits to the State. A total installed capacity of 29 mW of wind power generating over 76 million kWh of electricity annually is planned. In addition, PV installations totaling 1 mW of capacity, capable of generating 1.5 million kWh annually, are planned.

Table 4-7 shows the methodology used to estimate kWh savings. For example, in the Standard Performance Contracting program, the participating ESCO provides the savings estimates. These estimates are submitted with the project application and later verified by technical consultants assigned to the program. In the New Construction program, technical consultants assigned to the program estimate kWh savings for measures based on the incremental savings between standard equipment and the proposed higher-efficiency equipment (and hours of operation).

Table 4-6: Anticipated Annual kWh and Demand Savings⁽¹⁾ by Program

		Anticipated from Funds Awarded & Pending	Anticipated for Full Subscription of Incentives
Energy Services Industry Programs			
Standard Performance Contract	kWh (millions)	179.8	192.4
	Demand Savings	33.3 mW	35.6 mW
	Incentives (\$millions)	\$29.3	\$31.3
Institutional Performance Contracting Assistance	kWh (millions)	54.3	88.6
	Demand Savings	10.0 mW	16.3 mW
	Incentives (\$millions)	\$2.0	\$3.3
Market Transformation Programs			
New Construction	kWh (millions)	25.2	50.4
	Demand Savings	12.0 mW	24.0 mW
	Incentives (\$millions)	\$7.2	\$14.4
Premium Efficiency Motors	kWh (millions)	2.8	10.1
	Demand Savings	0 mW	0.1 mW
	Incentives	\$176,000	\$646,000
Residential Appliance & Lighting and ENERGY STAR [®] Awareness	kWh (millions)	13.9	53.9
	Demand Savings	4.0 mW	15.5 mW
	Incentives/ads (\$millions)	\$1.9	\$7.3
Technical Assistance Programs			
C/I Technical Assistance Programs	kWh (millions)	131.8	226.2
	Demand Savings	35.3 mW	60.6 mW
	Incentives (\$millions)	\$5.8	\$9.9
Low-Income Programs			
Low-Income Direct Installation	kWh (millions)	1	13.1 ⁽²⁾
	Demand Savings	0.3 mW	3.5 mW
	Incentives (\$millions)	\$720,000	\$8.7
Research & Development Programs			
Wind	kWh (millions)	76.2 ⁽³⁾	77.3
	Demand Savings	29.0 mW	29.4 mW
	Funding (\$millions)	\$6.0	\$7.0
PV	kWh (millions)	1.5 ⁽⁴⁾	1.7
	Demand Savings	1 mW	1.2 mW
	Funding (\$millions)	\$4.2	\$4.9
SBC Program Total	kWh (millions)	486.6	713.6
	Demand Savings	124.9 mW	186.2 mW
	Funding (\$millions)	\$57.2	\$87.3

(1) For all programs except Wind and PV, mW demand reductions are based on the load profiles of specific energy efficiency end-use measures and derived from the kWh savings.

(2) This electricity savings projection is higher than the estimate of 5.6 million kWh presented in the Low-Income Direct Installation case study found in Section 7 of this report. The 13.1 million kWh projection assumes full subscription of program funds, whereas the 5.6 million kWh savings estimate in the case study is based on electric reductions seen by the average low-income household applied to the 9,400 households expected to be served. The lower estimate in the case study does not necessarily assume full subscription of program funds, nor does it include the electric savings realized by building owners as a result of common area measures.

(3) Calculated as follows: 29,000 kW * 365 * 24 * 30% capacity.

(4) Calculated as follows: 1,000 kW * 365 * 24 * 16% capacity.

by Dohrmann, Marian, and Morse²⁰ examined the retention rate of demand-side-management measures installed by customers of Southern California Edison (SCE) in 1993 and 1994 under SCE’s Energy Efficiency Incentives Programs. The results, briefly summarized in Table 4-8 for the commercial sector, indicate that lighting measures are least likely to remain in service after 4 years and that chillers and adjustable speed drives are very likely to be in service after 4 years.

TABLE 4-8: Failure/Removal Rate of Installed Measures After 4 Years

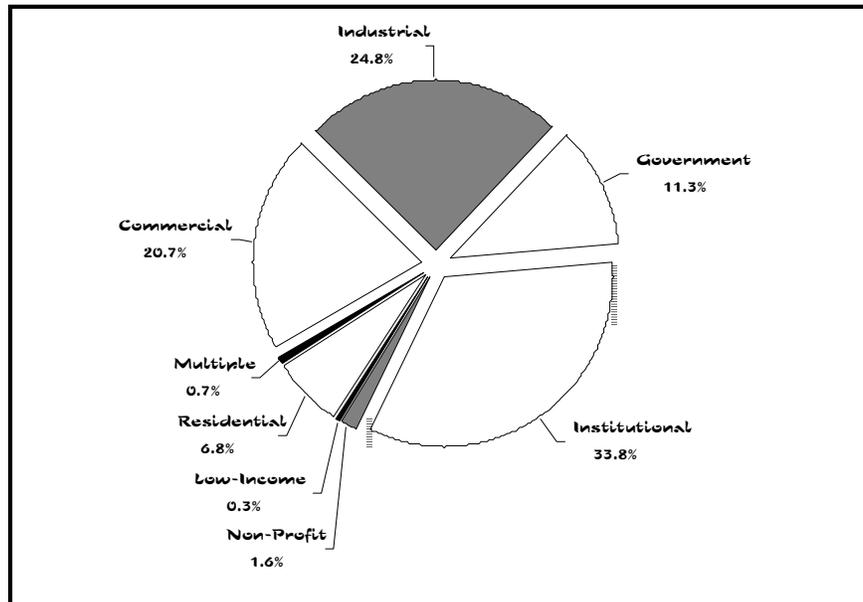
Measures with Highest Failure/Removal Rate		Measures with Lowest Failure/Removal Rate	
Measure	Failure/Removal rate	Measure	Failure/Removal rate
T8 lamps	33.1%	Chillers	0.0%
CF lamps	25.4%	Adjustable speed drives	2.7%

Additional work is continuing on the savings methods to estimate any degradation of savings and will be discussed in future evaluation reporting as necessary. Counterbalancing the degradation impact is the multiplier effect that market transformation activities is expected to generate once energy efficiency behaviors and practices become common place and markets are transformed.

Electricity Savings by Sector

The distribution of annual electricity savings by sector is shown in Figure 4-11 for the programs listed in Table 4-6 (with the exception of the Wind program). The institutional sector accounts for approximately 33% of the kWh savings to date, followed by industrial (25%), commercial (21%), government (11%), residential (7%), non-profit (2%) and low-income (0.3%). As additional residential

FIGURE 4-11: Annual kWh Savings by Market Sector



²⁰ Dohrman, D.R., Brown, M.V., and Morse, M.H., 1999. “A Longitudinal Study of Non-Residential DSM Measure Retention,” Proceedings of the 1999 International Energy Program Evaluation Conference, Denver, Co.

programs become operational, the kWh savings for this sector is expected to increase.

Electricity Savings by Measure

Electricity savings by measure is presented in Table 4-9 for those commercial/industrial (C/I) programs for which kWh savings are currently being reported. The table presents the kWh savings by measure and

Table 4-9: Annual kWh Savings (in million kWh) by Measure for Funds Awarded and Pending: Commercial/Industrial Programs⁽¹⁾

	HVAC	Motors/VSDs	Lighting	Other	Total
Standard Performance Contract Program	30.9	88.7	59.2	1.0 ⁽²⁾	179.8
% of total for program	17.2%	49.3%	32.9%	0.6%	100%
New Construction Program	14.3	3.7	1.9	5.3 ⁽³⁾	25.2
% of total for program	57%	15%	8%	21%	100%
Premium Efficiency Motors Program	N/A	2.8 ⁽⁴⁾	N/A	N/A	2.8
% of total for program	N/A	100%	N/A	N/A	100%
Total	45.2	95.1	61.1	6.3	207.7
% of total	22%	46%	29%	3%	100%

(1) Electricity savings from the Technical Assistance programs and the Institutional Performance Contract Assistance program are not included in this table because these programs fund studies that recommend various measures but do not fund the installation of the measures.

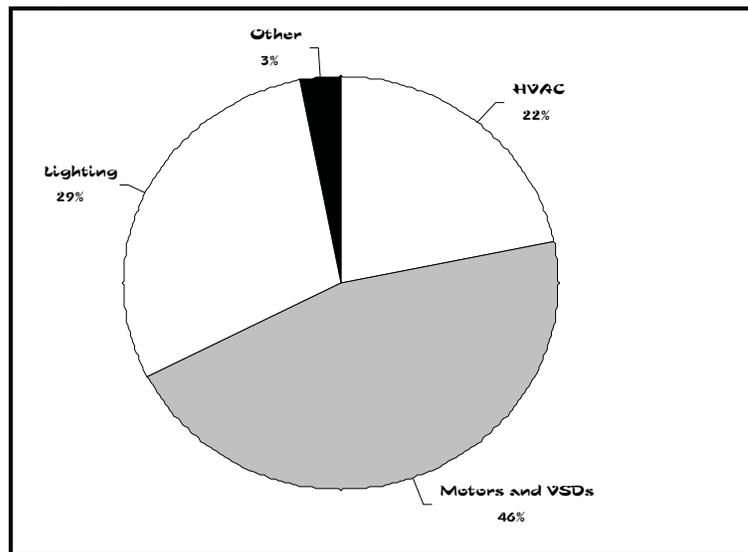
(2) Includes custom measures and renewable technologies.

(3) Includes energy management systems, process equipment, refrigeration, and building shell glazing.

(4) kWh savings include those from sales of motors associated with performance goals established by participating vendors. These goals may or may not become actual sales.

FIGURE 4-12: Annual kWh Savings by Measure: C/I Programs

the relative contribution of each measure to the program kWh savings. Overall, the largest contribution of kWh savings is from motors (46%), followed by lighting (29%), HVAC (22%), and other (3%). The combined kWh savings by measure is shown graphically in Figure 4-12.



Electricity savings by measure is presented in Table 4-10 for the residential sector (including Low-Income). To date, the savings from the residential sector are primarily from the Residential Appliance & Lighting and the ENERGY STAR® Awareness programs. Table 4-10 presents kWh savings by measure and the relative contribution of each measure to the program kWh savings. Overall, the largest contribution of kWh savings is from appliances (82%), followed by home electronics (15%), and lighting (4%). The total kWh savings from lighting measures are not available, and therefore are under-represented. The overall kWh savings is shown graphically in Figure 4-13.

Table 4-10: Annual kWh Savings (in million kWh) by Measure for Funds Awarded and Pending: Residential Sector

	Lighting	Appliances	Home Electronics	Total
Residential Appliance & Lighting Program and ENERGY STAR® Awareness	Not currently available ⁽¹⁾	11.7 ⁽²⁾	2.2 ⁽³⁾	13.9
% of total for program	N/A	84%	16%	100%
Low-Income Direct Installation Program	0.56	0.52 ⁽⁴⁾	N/A	1.1
% of total for program	52%	48%	N/A	100%
Total	0.56	12.2	2.2	15
% of total	3.8%	81.7%	14.5%	100%

(1) Savings estimates are not currently available but are expected to be available for future reporting.

(2) Includes refrigerators, clothes washers and dishwashers using electric water heating, and room air conditioners.

(3) Includes televisions and video cassette recorders.

(4) Includes refrigerators only for this program.

Electricity Savings by Utility Service Area

The distribution of annual electricity savings by utility service area is listed in Table 4-11 by individual programs. The overall distribution of electricity savings by utility service area is depicted graphically in Figure 4-14. The chart shows that customers in the Niagara Mohawk Power Corporation (NMPC) service area receive 46% of

FIGURE 4-13: Annual kWh Savings by Measure: Residential Sector

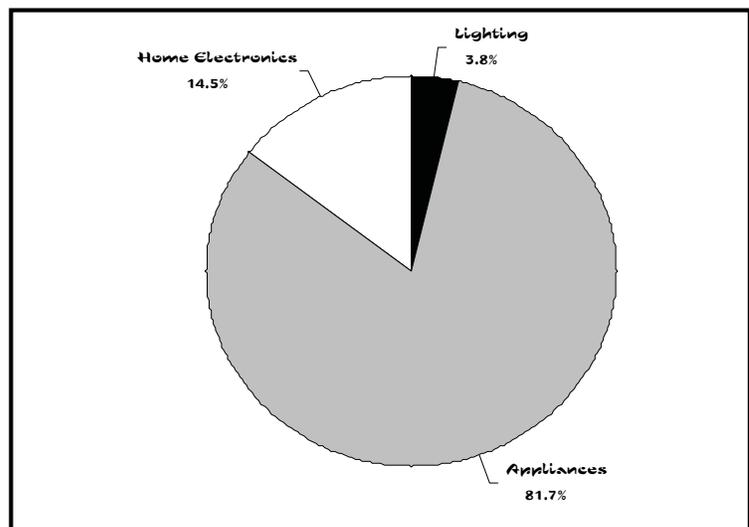
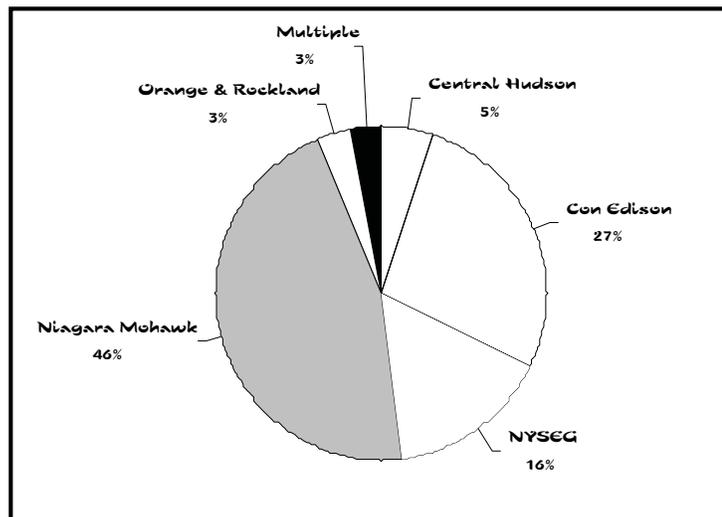


Table 4-11: Distribution of Program kWh Savings (in millions) by Utility Service Area

	CHG&E	ConEd	NYSEG	NMPC	O&R	Multiple	Total
Standard Performance Contract	3.8	44.2	27.0	103.8	0.9	0	179.8
% of total for program	2%	25%	15%	58%	1%	0%	100%
Inst. Performance Contract	6.4	6.5	14.2	20.4	6.7	0	54.3
% of total for program	12%	12%	26%	38%	12%	0%	100%
C/I New Construction	0.6	11.6	2.8	10.1	0.3	0	25.2
% of total for program	3%	46%	11%	40%	0%	0%	100%
Premium Efficiency Motors	0.01	0.19	0.47	1.6	0.01	0.47	2.8
% of total for program	0.4%	7%	17%	57.1%	0.4%	17%	100%
Technical Assistance Programs	10.5	42.2	14.5	47.5	4.0	11.9	131.8
% of total for program	8%	32%	11%	36%	3%	9%	100%
Residential Appliances & Lighting and ENERGY STAR® Awareness	0.6	3.9	5.0	2.6	1.9	0	13.9
% of total for program	4%	28%	36%	19%	14%	0%	100%
Low-Income Direct Installation	0.01	1.1	n/a	n/a	0	0	1.1
% of total for program	1%	99%	0%	0%	0%	0%	100%
Total (all programs)	22	109.7	63.9	186	13.6	12.3	408.9
% of total	5%	27%	16%	46%	3%	3%	100%

the total savings, followed by Consolidated Edison Company of New York (ConEd) (27%), New York Electric & Gas Corporation (NYSEG) (16%), Central Hudson Gas & Electric (CHG&E) (5%), and Orange & Rockland Utilities, Inc. (O&R) (3%). The kWh savings in the NMPC service area is higher than expected and may be explained by the geographic location of large facilities being served by the Standard Performance Contract and Institutional Performance

FIGURE 4-14: Annual Electricity Savings by Utility Service Area



Contracting Assistance programs. In addition, NMPC has been a active partner in promoting the **New York Energy SmartSM** Standard Performance Contract program. The distribution is expected to change as programs targeting smaller commercial customers (*i.e.* Small Commercial Lighting program) expand, and as various residential and low-income programs are expanded.

Other Fuel Savings

Some **New York Energy SmartSM** programs provide energy audits and design assistance that identify energy savings beyond electricity. Savings from oil and natural gas are reported in Table 4-12 for the Technical Assistance programs and the Geothermal Heat Pump project (C/I Innovative Opportunities program). Over 344 thousand mmBtu of oil savings and 1.5 TBtu of natural gas savings have been projected based on \$5.8 million awarded to the Technical Assistance programs and the \$316,000 awarded to the Geothermal Heat Pump project to complete 35 design assistance studies.

TABLE 4-12: Oil and Gas Savings From Funds Awarded & Pending

	Oil		Gas	
	mmBtu (thousands)	\$ (millions) ⁽¹⁾	mmBtu (thousands)	\$ (Millions) ⁽²⁾
C/I Technical Assistance programs	338.3	\$1.450	1,338.0	\$7.250
Geothermal Heat Pump Project	5.8	\$0.024	236.9	\$0.926
Total	344.1	\$1.474	1,574.9	\$8.176

(1) Assumes oil prices of \$4.32/mmBtu for commercial customers and \$4.14/mmBtu for industrial customers.

(2) Assumes natural gas prices of \$5.92/mmBtu for commercial customers and \$3.91/mmBtu for industrial customers

Environmental Benefits

Air emission reductions expected to result from the **New York Energy SmartSM** program efforts is reported in Table 4-13, for programs currently reporting results. Emission reductions are reported for nitrogen oxide (NOx), sulfur dioxide (SO₂), and carbon dioxide (CO₂). These reductions are based on annual electricity savings of 408.9 million kWh, \$9.65 million in savings annually from oil and gas, and 77.7 million kWh savings from the 29 mW of wind-generated electricity and 1 mW of PV-generated electricity. Collectively, the annual CO₂ reduction is equivalent to removing about 67,000 automobiles from New York's roadways.²¹

²¹ Statewide tonnage caps on sulfur dioxide and nitrogen dioxide emissions from electricity generation sources limit the impacts of reduced electricity use on actual emission of these pollutants. However, reduced electricity use does result in lower environmental compliance costs for generation sources.

TABLE 4-13: Emission Reductions from Programs Currently Reporting Energy Savings (in tons)

Primary Pollutant	From Electricity Savings	From Oil and Gas Savings	From Clean Generation: Wind & PV	All Sources
NOx	307	99	58	464
SO ₂	617	40	117	774
CO ₂	180,311	120,006	34,269	334,586

The emission reductions that can be expected from the current program once all of the individual program budgets are encumbered, are shown in Table 4-14. These emission reductions are based on projected annual electric savings of 634.6 million kWh, \$17 million in oil and natural gas savings, and 79 million kWh of clean generation. The combined CO₂ emission reductions are equivalent to removing about 104,000 automobiles from the road.

TABLE 4-14: Projected Emission Reductions by Program End - from Programs Currently Reporting Energy Savings (in tons)

Primary Pollutant	From Electricity Savings	From Oil and Gas Savings	From Clean Generation: Wind & PV	All Sources
NOx	476	173	59	708
SO ₂	958	72	119	1,150
CO ₂	279,875	209,281	34,823	523,979

Early Indicators of Market Effects

Although it is too early to assess market transformation effects, work has begun to assess the extent to which the **New York Energy SmartSM** programs are having an effect on specific market barriers and consumer and business attitudes. Preliminary survey results are presented in Table 4-15. Activities related to measurement of market effects are on-going and will increase as greater numbers of projects are completed and begin to create market impacts.

TABLE 4-15: Market Transformation Progress

Market Progress Indicators	Progress Reported
<p>1. Increase in awareness and knowledge of energy efficiency opportunities, and products and services:</p> <p><u>Targeted Actors</u></p> <ul style="list-style-type: none"> • Manufacturers • Distributors, vendors, and retailers • Facility operations • Consumers 	<p>In a July 2000 survey of retailers participating in the <u>Residential Appliances and Lighting</u> program, 70% of respondents either “agreed” or “strongly agreed” that the program had enhanced their sales staff’s knowledge on the benefits of ENERGY STAR® equipment. Seventy percent of the respondents also indicated that they had “No Awareness” or “Little Knowledge” on ENERGY STAR® appliances and lighting products prior to participating in the program.</p> <p>Two-thirds of <u>Standard Performance Contract</u> program customers surveyed indicated they had never worked with an ESCO before, but all expressed willingness to purchase electricity (commodity) from ESCOs if and when retail choice is available.</p> <p>A February 2000 survey conducted by Aspen Systems Corporation showed that 73.9% of consumer respondents who are aware of the ENERGY STAR® logo also understand its meaning, compared to 57% in August 1999.</p>
<p>2. Enhanced ability to promote energy efficiency products & services:</p> <p><u>Targeted Actors</u></p> <ul style="list-style-type: none"> • Manufacturers • Distributors, vendors, and retailers 	<p>In a July 2000 survey of retailers participating in the <u>Residential Appliances and Lighting</u> program, 80% of respondents either “agreed” or “strongly agreed” that the program has enhanced their sales staffs’ ability to communicate the benefits of ENERGY STAR® products to customers.</p> <p>In a July 2000 survey of vendors participating in the <u>Premium Efficiency Motors</u> program, 87.5% of respondents indicated that the program has enhanced their firm’s ability to communicate the benefits of CEE-qualified motors to customers.</p>
<p>3. Increase in energy-efficient product and equipment manufacturing, stocking, display, and promotion:</p> <p><u>Targeted Actors</u></p> <ul style="list-style-type: none"> • Manufacturers • Distributors, vendors, and retailers 	<p>Between October 1999 and February 2000, retailers participating in the <u>Residential Appliances and Lighting</u> program increased the labeling of ENERGY STAR® models on display for most of the 15 appliances covered from lows of zero to 20% to a high of 100%. Additionally, participating retailers have displayed over 13,800 Point Of Purchase (POP) materials including posters, brochures, labels, banners and videos.</p> <p>Through its torchiere trade-in events and the associated media coverage, the <u>ENERGY STAR® Public Awareness Campaign</u> has influenced Home Depot’s corporate decision to discontinue the sale of halogen torchieres. The trade-in events encourage the use of ENERGY STAR® torchieres instead of inefficient and unsafe halogen models. Events in the Buffalo area have resulted in over 700 lamps being traded in.</p> <p>One-quarter of the <u>Premium Efficiency Motors</u> program participants surveyed indicated that they have increased stock of CEE-qualified motors since joining the program. Grainger, one participating vendor, has brought about \$1.2 million worth of CEE-qualified inventory into the Northeast to ensure CEE motor delivery in 24 to 36 hours anywhere in New York State.</p>

Continued on following page.

TABLE 4-15: Market Transformation Progress (continued)

Market Progress Indicators	Progress Reported
<p>4. Increase in sales/purchases of energy-efficient products, equipment, and services:</p> <p><u>Targeted Actors</u></p> <ul style="list-style-type: none"> • Distributors, vendors, and retailers • Energy service companies • Consumers 	<p>Customer-reported purchases of the ENERGY STAR® products covered by the <u>Residential Appliances and Lighting</u> program have increased for all but one product (recessed lighting fixtures). Between October 1999 and February 2000, consumer-reported market shares of ENERGY STAR® products increased by 6.6 to 14.6%. Historical data show that, in the past, ENERGY STAR® market share increased by 1 to 4% per year.</p>

The next section of this report examines how the results reported to date address the goals of the **New York Energy SmartSM** program.