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

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August 22, 2008

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Honorable Jaclyn A. Brilling
Secretary
New York State Public Service Commission
Three Empire State Plaza
Albany, New York 12223-1350

RE: Case 07-M-0548 Proceeding on Motion of the Commission Regarding an Energy Efficiency Portfolio Standard

Dear Secretary Brilling:

Pursuant to the New York State Public Service Commission's June 23, 2008 *Order Establishing Energy Efficiency Portfolio Standard and Approved Programs* in Case 07-M-0548, Proceeding on Motion of the Commission Regarding an Energy Efficiency Portfolio Standard, the New York State Energy Research and Development Authority (NYSERDA) submits the enclosed Supplemental Revision to its SBC Operating Plan (Supplemental Revision). As directed in the Order, the Supplemental Revision incorporates the fast track programs, including the enhancements to the fast track programs described in the Order and accompanying appendices.

If you have any questions with regard to the Supplemental Revision, please contact me at (518) 862-1090, extension 3233. Thank you.

Sincerely,

Bob Callender
Vice President for Programs

Enclosure

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SYSTEM BENEFITS CHARGE

Supplemental Revision for New York Energy $mart[SM] Programs (2008-2011)

As Amended

August 22, 2008

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SECTION 1. INTRODUCTION

1.1. Purpose and Scope of the Supplemental Revision

In its June 23, 2008 Order,[1] the New York State Public Service Commission (Commission) established the State's Energy Efficiency Portfolio Standard (EEPS) and approved a subset of "fast track" (Fast Track) programs to commence immediately. The Order also directed NYSERDA to submit a supplemental revision to its System Benefits Charge (SBC) Operating Plan incorporating the fast track programs, including enhancements to the fast track programs. This Supplemental Revision is to also include added programs for statewide marketing outreach and education and enhanced measurement and verification.[2] This Supplemental Revision to NYSERDA's SBC Operating Plan (as amended March 2008[3]), is intended to fulfill the requirements contained within the Order.

The SBC Operating Plan sets forth the goals and strategies of the SBC programs, describes the individual programs that will be implemented to achieve the goals, summarizes how NYSERDA will administer, evaluate, and report on the programs, identifies the funds allocated to each program, and discusses program delivery and collaboration activities. This Supplemental Revision serves as the vehicle that incorporates the NYSERDA-applicable Fast Track programs to commence immediately into NYSERDA's existing SBC program portfolio, and includes descriptions of the new Statewide marketing, outreach, and education activities, as well as enhanced evaluation, measurement and verification.

1.2. Background

On May 16, 2007, the Commission issued its Order Instituting Proceeding,[4] establishing the goals for the EEPS Proceeding as a means of realizing the State's energy efficiency potential and reducing New York's electricity usage 15% from expected levels by 2015.[5] Many months of collaborative efforts, analysis, and administrative filings submitted by the active parties to the proceeding, led to the Commissions' consideration of this proceeding at its May 21, 2008 and June 23, 2008 public sessions and culminated in the Commission's issuance of the June 23, 2008 Order.

1.3. Relationship to SBC III Programs

This Supplemental Revision serves as the vehicle that incorporates the NYSERDA-applicable Fast Track programs to commence immediately into NYSERDA's existing SBC program portfolio. Generally, these are programs that NYSERDA identified during the EEPS proceeding as existing programs that could quickly accommodate an increase in funding through existing program infrastructures to expedite energy efficiency savings without incurring significant additional fixed program costs. These enhanced programs and their relationship to programs being administered through NYSERDA's **New York Energy $mart**[SM] program portfolio are briefly described below. More specific information on these programs is contained in Sections 3, 4, 5 and 6 of this Supplemental Revision.

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[1] Case 07-M-0548, Proceeding on Motion of the Commission Regarding an Energy Efficiency Portfolio Standard, *Order Establishing Energy Efficiency Portfolio Standard and Approving Programs*, (issued and effective June 23, 2008).

[2] Id. at p. 74.

[3] On March 28, 2008, NYSERDA submitted an Amended Operating Plan in compliance with the New York State Public Service Commission's June 5, 2007 Order in Case 05-M-0090, In the Matter of the System Benefits Charge III, *Order Granting Petition*.

[4] Case 07-M-0548, Proceeding on Motion of the Commission Regarding an Energy Efficiency Portfolio Standard, *Order Instituting Proceeding*, issued May 16, 2007.

[5] Id. at p.2.

High Performance New Buildings. (New Commercial Buildings – Whole Building Design). Program enhancements include increasing the number of technical assistance providers, new consideration to program incentive levels, and a renewed emphasis on a "whole-building" approach. Expanding the number of measures and periodically reviewing the measures promoted by the program will also be addressed, as well as increasing compensation to further enable building developers, architects, and engineers to participate in design option analysis.

Flexible Technical Assistance Expansion (FlexTech). Program Enhancements include substantially increasing the number of service providers and expanding marketing of this program.

Industrial Process and Efficiency. Program enhancements include increasing the number of service providers, particularly service providers who are experts in particular industrial processes; making incentives available for industrial process improvements; and substantially expanding marketing.

Statewide Residential Point-of-Sale Lighting (CFL Expansion) Program. Enhancements include reaching all significant channels for light bulbs with a wide variety of compact fluorescent lighting (CFL) options and increasing marketing and co-promotions with retail stores and lighting manufacturers (including in-store promotions and point-of-purchase information). Additional enhancements include providing inducements to retailers to increase the number of energy efficient bulbs sold, increase devoted shelf space and considering the use of time-limited coupons or in-store rebates. NYSERDA is also considering the development of a lighting catalog.

EmPower NY. Program enhancements include extending the program to more customers and meeting with interested parties to determine how best to leverage additional funding and maximize utility referrals to the program.

SECTION 2. FUNDING, EXPENDITURES, and BENEFITS

2.1. Program Budgets

Table 2.1 presents the total budget based on the addition of remaining SBC III funds as of September 30, 2008, and the total estimated electric energy efficiency program costs for Fast Track Programs (derived from Table 15 of the June 23, 2008 EEPS Order). For Programs to which both SBC III and EEPS funds are allocated, Table 2.1 illustrates the relative proportion of the two funding sources. Table 2.1 also includes the additional funds allocated in the Order for SBC evaluation (totaling $17.5 million), increasing the amount available for evaluation, measurement, and verification to 5% of program costs (increased from the current 2%).

Table 2-1. NYSERDA SBC Supplemental Funding Summary for Fast Track Programs[6]

Program	Previously Approved SBC III Budget	SBC III Budget Remaining 9/30/2008 (% of Total Combined Budget)	EEPS Fast Track Budget(% of Total Combined Budget)	Total Combined Budget
High Performance New Buildings	$111,315,667	$86,213,080 (58%)	$62,977,691 (42%)	$149,190,771
Technical Assistance	34,740,307	29,389,366 (66%)	14,919,306 (34%)	44,308,672
Technical Assistance Industrial Process	--	--	93,211,938 (100%)	93,211,938
CFL Expansion	--	--	17,253,556 (100%)	17,253,556
General Awareness	15,156,395	10,796,238 (36%)	19,500,000 (64%)	30,296,238
EmPower New York[SM]	49,445,001	20,615,628 (47%)	23,660,000 (53%)	44,275,628
Total Programs	**$210,657,370**	**$147,014,312**	**$231,522,491**	**$378,536,803**
Evaluation – SBC	19,909,162	13,924,072	17,062,500	
Evaluation – EEPS			11,649,588	42,636,160
Administration	68,340,090	37,739,699	16,309,419	54,049,119
TOTAL	**$298,906,622**	**$198,678,083**	**$276,543,998**	**$475,222,081**

2.2. Program Expenditures for EEPS and remaining SBC funds

Table 2.2 presents the roll-up of annual estimated expenditures of remaining SBC III funds and supplemental Fast Track EEPS funds. The separate program expenditure budgets are also included in the program discussions contained in Sections 3, 4, and 5 of this Supplemental Revision. While it is anticipated that all SBC III and EEPS Fast Track funds will be committed to projects by 2011, actual expenditures may occur in later years as projects come to fruition. In some instances, the estimated annual expenditures vary from the program costs included in the June 23, 2008 Order, Appendix 1, Table 15, but the total expenditures (or costs) for each program are the same as those in Table 15. The variance more accurately reflects the time frame that NYSERDA anticipates expending certain the program funds, and more accurately reflects project lag times and other programmatic considerations.

[6] No additional monies are being budgeted out of the EEPS Fast Track funding for the NYS Cost Recovery Fee as the budget approved for SBC III is sufficient to cover the cost, including the increased cost allocation resulting from the additional funding.

Table 2-2. SBC III and EEPS Fast Track Program Expenditures ($000) 2008-2015 [including administrative costs]

	2008 (1/4 yr)	2009	2010	2011	2012	2013	2014	2015	Total
High Performance New Buildings									
EEPS	$630	$5,038	$7,557	$14,485	$16,374	$13,855	$5,038	$0	$62,978
SBC	$862	$6,897	$10,346	$19,829	$22,415	$18,967	$6,897	$0	$86,213
FlexTech Expansion									
EEPS	$211	$1,269	$3,060	$4,564	$3,851	$1,963			$14,919
SBC	$415	$2,500	$6,029	$8,991	$7,587	$3,868	$0	$0	$29,390
Industrial and Process Efficiency									
EEPS	$0	$5,360	$14,069	$22,720	$25,269	$17,550	$7,093	$1,151	$93,212
CFL Expansion									
EEPS	$787	$5,734	$5,890	$4,843	$0	$0	$0	$0	$17,254
EmPower New York℠									
EEPS	$500	$7,280	$7,280	$7,280	$1,320	$0	$0	$0	$23,660
SBC	$3,864	$9,900	$6,852	$0	$0	$0	$0	$0	$20,616
TOTAL									
EEPS	**$2,128**	**$24,681**	**$37,856**	**$53,892**	**$46,815**	**$33,368**	**$12,131**	**$1,151**	**$212,022**
SBC	**$5,142**	**$19,297**	**$23,226**	**$28,820**	**$30,002**	**$22,834**	**$6,897**	**$0**	**$136,219**

2.3. Explanation of Costs

2.3.1. Administrative Costs

NYSERDA's Budget for the EEPS Fast Track Programs includes a component for NYSERDA's program administration costs. The Budget presented in this Supplemental Revision assumes an administrative rate equal to 7% of the funding provided for the Fast Track Programs in the June 23, 2008 Order.[7] The 7% rate is consistent with prior administrative funding levels applied to the SBC programs. These administrative costs include additional annual costs for retirement health insurance, now required to be recognized as current period costs, pursuant to Governmental Accounting Standards Board Statement No. 45 (GASB45), effective April 1, 2007. These added costs result in an increase of administrative costs of approximately $1.5 million per year, (or, about .8%) of the combined SBC III and EEPS funding. However, NYSERDA proposes to achieve efficiencies in the administration of the additional EEPS funds that will offset the cost increases so that the overall administrative rate is held to the same 7% level as planned at the beginning of SBC III.

2.3.2. Costs for Enhanced Evaluation, Measurement, and Verification

The June 23, 2008 Order provided evaluation funding equal to 5% of program budgets for the Fast Track programs, thus resulting in approximately $11.6 million of total evaluation funding available through 2011 for NYSERDA's Fast Track programs. Of this funding total, NYSERDA has earmarked

[7] This is exclusive of funding provided for Statewide Marketing, Outreach and Education, Enhanced Fast Track Program Measurement and Verification, and SBCIII Enhanced Measurement and Verification.

approximately $2.4 million to fund internal evaluation staffing needs and Statewide studies and activities intended to benefit all EEPS program administrators. The remaining $9.2 million is allocated, as described in Section 7 of this Supplemental Revision, to specific evaluations on the five Fast Track programs. In the event that residual funding results from the $2.4 million earmarked from the efforts identified above, NYSERDA will allocate remaining funds toward the program-specific work defined in this Supplemental Revision.

NYSERDA plans to undertake two additional evaluation-related activities. NYSERDA will obtain the services of a consultant to advise DPS Staff on the scope and methods of evaluations and to assist DPS Staff in its independent critique of the evaluation activities of NYSERDA, utilities, and other program administrators, if any, on behalf of the PSC. NYSERDA will also obtain such hardware, software, and technical assistance necessary to assist DPS Staff in the design, development, and implementation of a uniform database allowing more comparable evaluation of programs administered by NYSERDA, utilities, and other program administrators, if any, on behalf of the PSC. NYSERDA intends to use the interest earnings to fund these activities. With respect to the evaluation consultant, the June 23, 2008 Order indicated that this activity should be funded with a portion of the 5% set-aside for NYSERDA evaluation activities. NYSERDA will petition the PSC for permission to fund this activity with interest earnings.

2.3.3. Costs for Marketing, Education, and Outreach

The June 23, 2008 Order requires that estimates of funds that will be allocated for marketing, education, and outreach directly associated with NYSERDA's implementation of Fast Track Programs be identified. Strategies and associated estimated costs vary by program and are described in the individual program descriptions contained in Sections 3, 4, and 5 of this Supplemental Revision. NYSERDA anticipates that, in consultation with DPS Staff, it may be necessary to reallocate additional funds for marketing, education, and outreach from the program budgets, if warranted, to meet the goals or to re-allocate some portion of these estimated budgets to other program costs. Section 6 of this Supplemental Revision addresses the separate budget of $19.5 million which was identified in the Order as available for Statewide Marketing, Education and Outreach (General Awareness).

2.4. Strategies to Align SBC and EEPS Expenditures Geographically with Collections

NYSERDA has begun to employ strategies that will more closely align SBC and EEPS Fast Track fund expenditures with the geographic collection of ratepayer funds. NYSERDA uses data systems that record the location and utility provider of projects for which funds are provided. Payment of funds which can be directly related to a customer site or a customer address comprise the vast majority of expenditures. Costs associated with administration, marketing, implementation contractors, and certain intervention strategies that can not be attributed to a particular customer or location are pro-rated to the utility service areas based on either the relative proportion of projects or population within the areas. Currently, the quarterly reports submitted by NYSERDA pursuant to the administration of SBC III programs illustrate the total expenditure of SBC funds by utility service area for the reporting period, as well as cumulative-to-date. NYSERDA anticipates that the expenditure of EEPS Fast Track funds will be tracked and reported in a similar manner.

In order to provide for a streamlined delivery system and to avoid customer confusion, the majority of NYSERDA's SBC-administered programs are operated on a Statewide open enrollment basis. While this "first-come first-served" approach does not provide certainty that expenditures will match collections, it has proven to be an effective way to broadcast the availability and eligibility requirements of funds and to manage the application review and approval process. While NYSERDA does not propose to change this approach, it is recognized that better alignment of expenditures with collections should be attained. As such, NYSERDA intends to employ several programmatic changes and new strategies:

· Adjust incentive levels and raising funding caps to make programs more financially attractive to New York City customers;

· Emphasize marketing targeted to New York City-area customers that represent the largest energy users, or are key players in the design of energy efficiency projects. Activities will include conducting market research, increased reliance on in-house and purchased databases, and targeting particular publications to advertise availability of funds and services;

· Increase the number of NYSERDA staff permanently located in New York City to more closely work with customers, contractors, trade associations, and organizations that serve the New York City market;

· Increase the reliance on the resources and tailored marketing, benchmarking, and one-on-one support strategies associated with the Energy Smart Focus initiative to better reach the energy efficiency potential within the commercial real estate, hospitality, industrial, and healthcare sectors. For example, NYSERDA intends to work more closely with key real estate and building-related associations to target messages and identify customers;

· Continue to collaborate with Consolidated Edison and National Grid to identify customers and receive referrals;

· Work more closely with New York City agencies with responsibilities related to the implementation of PlaNYC;

· Use co-marketing strategies to tap into NYSERDA's growing network of trade allies (*e.g.* energy service companies, engineering firms, lending institutions, vendors, contractors, and retailers) who are conduits to customers located in the New York City area;

· Increase the field presence of consultants and technical providers in the New York City area that provide outreach and customer support and direct technical assistance; and

· Coordinate workforce development efforts with CUNY colleges to expand training and certification opportunities and to provide 100% of training costs to encourage participation.

2.5. Benefits

Table 2.3 contains a "roll-up" of annual benefits, expressed in MWh, expected to accrue from the expenditure of SBC III and EEPS funds. Individual benefits for each program are also included in the Sections 3, 4, and 5 of this Supplementation Revision. In some cases, the estimates vary from the MWh goals included in the June 23, 2008 Order, Appendix 1, Table 8, to more accurately reflect the time frame when the anticipated benefits will actually occur. This takes into account project lag times and other programmatic considerations. However, NYSERDA will meet the 2011 and 2015 program MWh goals for all programs except for the 2011 Fast Track goal for the FlexTech Expansion Program. With respect to that goal, the timing of the installed savings has been adjusted to account for the time necessary for customers to evaluate the results of detailed project feasibility studies, commit funds and complete equipment installations. The savings lag assumed in Table 2-3 below was adjusted from that which was contained in the June 23, 2008 Order, based on program experience and information developed in **New York Energy $mart**[SM] evaluations.

Table 2-3. SBC III and EEPS Fast Track Projected Results (MWh) - 2008-2015

	2008 (1/4 yr)	2009	2010	2011	2012	2013	2014	2015	Total
High Performance New Buildings									
EEPS	2,789	22,312	33,468	64,147	72,514	61,358	22,312	0	278,900
SBC	2,640	21,120	31,680	60,720	68,640	58,080	21,120	0	264,000
FlexTech Expansion									
EEPS	0	10,599	29,866	54,424	65,705	56,568	32,507	17,440	267,109
SBC	0	12,406	34,117	60,258	70,449	59,372	33,674	17,723	287,999
Industrial and Process Efficiency									
EEPS	0	122,500	197,969	257,031	213,281	49,219	0	0	840,000
CFL Expansion									
EEPS	31,710	241,560	322,080	348,930	95,160	0	0	0	1,039,440
EmPower New York SM									
EEPS	650	9,042	9,042	9,042	1,611	0	0	0	29,387
SBC	3,985	10,219	7,051	0	0	0	0	0	21,255
TOTAL									
EEPS	**35,149**	**406,013**	**592,425**	**733,574**	**448,271**	**167,145**	**54,819**	**17,440**	**2,454,836**
SBC	**6,625**	**43,745**	**72,848**	**120,978**	**139,089**	**117,452**	**54,794**	**17,723**	**573,254**

SECTION 3. Fast Track Programs for Commercial and Industrial

3.1. New Commercial Buildings Program

3.1.1. Description of Current Program

The commercial New Construction Program (NCP) provides customers with technical assistance services and capital-cost incentives for energy efficiency improvements in new construction or substantially renovated buildings. Through the technical assistance component of the program, cost-shared analysis is provided to customers and their design teams to identify energy efficiency opportunities for their projects. An additional level of technical assistance provides specialized green building assistance to interested customers. These services include computer modeling, materials analysis and assistance to comply with Leadership in Energy and Environmental Design (LEED®), the rating system developed by the U.S. Green Building Council. Financial incentives are offered to offset the additional cost of the energy efficiency improvements. The incentives are based on a tiered approach, providing increasing incentives to customers for projects achieving higher levels of energy performance.

3.1.2. Program Enhancements for EEPS Fast Track

Based on projections using historical program data, in order to meet the Fast Track energy savings goals for NCP (which are approximately 35% higher than current annual savings), the NCP will increase the number of program participants and capture a greater level of energy savings in each project. As the number of participants in the program increases to meet the goals outlined in the June 23, 2008 Order, additional consulting services will also increase. In an effort to meet this short-term need, NYSERDA will continue to encourage its existing contractors to expand their current capabilities. NYSERDA will also issue a new request for proposals (RFP) to increase the list of technical assistance providers and further expand program capabilities. New technical assistance providers will be required to demonstrate expertise in computer simulation modeling and green building services. To meet the increased need for services in the Consolidated Edison and National Grid service territories, NYSERDA will contract with technical assistance firms capable of meeting the needs of projects in these specific geographic areas.

The whole-building design approach is the preferred method of analysis to maximize the energy efficiency of all systems within buildings. NYSERDA will increase its capabilities to provide this interactive analysis and offer additional incentives for these projects. Incentives will be provided through additional energy performance tiers for whole-building design projects, offering higher incentives for projects that achieve energy performance improvements more than 30% above current NYS Energy Conservation and Construction Code requirements. Furthermore, the program will target larger, more complex, high energy consuming projects (*e.g.*, supermarkets, data centers, laboratories, *etc.*) to yield a higher level of energy savings per project. The NCP will increase its focus on industry leaders among various market segments to better promote the program and create examples for other businesses in these market segments. These elements, along with other anticipated program enhancements, will help reduce the total number of additional applications needed to achieve the projected kWh savings goals.

Increased incentives will also be provided to members of project design teams to encourage them to bring projects to NYSERDA. The NCP will continue to explore new opportunities to work with business partners and upstream market actors, including lighting designers and HVAC contractors.

A comprehensive analysis of measures previously studied through the NCP is being conducted to identify measures offering the greatest potential for energy savings. As a result of this analysis, NYSERDA will educate technical assistance contractors to aggressively promote the installation of the most cost-effective technologies.

The program will continue to encourage and provide incentives for sustainable design and Green Building certification. Through partnerships with the U.S.Green Buildings Council (LEED®) and the New York State Education Department (New York State Collaborative for High Performance Schools -- NYS CHPS), NYSERDA promotes green building certification. As many customers are currently seeking green building services, there is a unique opportunity to encourage customers to build more sustainably and to strive for the highest achievable levels of energy performance. NYSERDA also plans to leverage national resources (*e.g.*, ASHRAE Design guidelines) to expand program capabilities.

As smaller projects (buildings less than 25,000 square feet in size) are not as well-suited for whole-building design analysis, the program will continue to explore more cost-effective methods to identify energy efficiency opportunities for projects of this size. Part of this strategy includes the enhancement of a comprehensive custom analysis tool developed to identify energy efficiency opportunities requiring less of an investment than is made using the whole-building design approach.

3.1.3. Program Marketing, Outreach, and Education

A unique marketing challenge in the commercial new construction industry is that most projects offer only a narrow window of opportunity for the incorporation of techniques and technologies promoted by NYSERDA. In addition, there are few reliable sources for identifying commercial or industrial construction projects in the early stages – the only time the opportunity exists. NYSERDA is expanding its network of project consulting services that provide general program marketing and promotional services to address this challenge.

Marketing and outreach strategies include:

- Direct outreach through telephone calls and meetings;
- Networking at breakfast meetings, brownbag workshops or "lunch and learn" events;
- Attendance at trade shows and construction showcases designed to publicize program benefits and gather contact information;
- Increased participation in project press events to promote successes and showcase projects that achieve the highest levels of energy performance;
- Conduct training and education, including computer modeling training and continuing education credits, in partnership with allied businesses, universities, and key professional organizations;
- Institute an awards program to draw attention to successful designers and their projects
- Expand partnerships with key industry allies and professional associations (*e.g.*, American Institute of Architects);
- Develop project case studies that highlight successes in many different market sectors;
- Post advertisements in trade journals and magazines;
- Website enhancements and conducting webinars; and
- Leverage trade ally opportunities, trade association trainings, annual meetings, etc.
- Target the planning and permitting departments of local governments to identify potential projects early in the design process.

3.1.4. Metrics and Benefits

There is a typical extended time frame to identify and install energy efficiency improvements in new or substantially renovated buildings that results in a lag in kWh savings accruals. As outlined in the June 23, 2008 Order, kWh savings projections increase over the first four years and trail-off during the remaining two years of the program. This ramp up is in alignment with necessary program enhancements that will position the program to achieve its goals. In addition to captured kWh savings, the NCP will continue to produce market transformation benefits through its education and development of building owners, developers, architectural/engineering firms, contractors and equipment vendors. In addition, fossil fuel savings will be also be achieved by the program, particularly for projects analyzed through the whole-building design approach. The projected MWh savings for the NCP are shown in Table 3.1.

Table 3-1. Projected MWh Savings for New Construction Program (2008-2011)

	2008 (4th Quarter)	2009	2010	2011	2012	2013	2014	2015
EEPS	2,789	22,312	33,468	64,147	72,514	61,358	22,312	0
SBCIII	2,640	21,120	31,680	60,720	68,640	58,080	21,120	0

3.1.5. Budget

The projected budget for the NCP is shown in Table 3.2

Table 3-2. Projected Budget/$ for New Construction Program (2008-2011) [Net of Outreach and Marketing Expenses]

	2008 (4th Quarter)	2009	2010	2011	2012	2013	2014	2015
EEPS	629,776	5,038,215	7,557,323	14,484,869	16,374,200	13,855,092	5,038,215	0
SBCIII	862,130	6,897,046	10,345,569	19,829,008	22,415,400	18,966,877	6,897,046	0

The estimated outreach and marketing budget for the New Construction Program will total approximately $3.1 million for 2008-2011.

3.2. Flexible Technical (FlexTech) Assistance Program

3.2.1. Description of Current Program

The Flexible Technical (FlexTech) Program provides customers with objective and customized information to facilitate informed energy efficiency, procurement, productivity and financing decisions. Cost-shared technical assistance is provided for detailed studies from energy engineers and other experts. The program is designed to evaluate all energy sources while providing objective analysis of energy source trade-offs and switching options. Program participants receive a customized energy study targeted to the participants particular needs and objectives.

Eligible participants for the FlexTech Program include commercial, industrial, institutional, municipal, not-for-profits and K-12 schools. Participants may use NYSERDA-contracted or customer-selected service providers. The FlexTech Program is currently offered Statewide with an increased focus on the Consolidated Edison service territory due to load constraints, and higher energy costs and ratepayer contributions. This geographically-focused application of the FlexTech Program targets service providers located in the Consolidated Edison area and offers higher cost sharing limits for customers in this service territory.

Smaller customers are currently eligible for walk-through energy audits, including a reimbursement of audit cost upon implementation of recommendations. NYSERDA anticipates that targeting of this market sector will be diminished as the utility-offered Fast Track Small Business Programs begin to be implemented.

3.2.2. Program Enhancements for EEPS Fast Track

NYSERDA intends to enhance the FlexTech Program by increasing the number of service providers, introducing new initiatives, and expanding ongoing activities. To increase the number of service providers, NYSERDA will issue a Request for Proposals (RFP) to select qualified firms in specific geographic areas, (such as New York City), or technological fields (such as industrial process or data center process efficiency). New and expanded initiatives will include: retro-commissioning, energy master planning, long-term energy management, combined heat and power (CHP), sector-based emphasis, carbon footprint analysis, carbon reduction analysis, and sustainability planning and practices.

3.2.3. Program Marketing, Outreach, and Education

NYSERDA will increase and expand its outreach[8] effort to achieve the goals as established in the June 23, 2008 EEPS Order. NYSERDA's outreach strategy will focus on direct and continuous customer contact over time. Efforts to encourage the engagement of all levels of participants from facility managers to senior management will be continued. NYSERDA performs consistent, regular, and frequent interactions with ratepayers and customer, service provider, professional and business organizations across the state. NYSERDA will build upon these existing relationships through the use of common stakeholders, sector-specific organizations, civic organizations, and trade associations.

NYSERDA will engage the network of FlexTech service providers in the development of marketing materials highlighting their specific experience working with NYSERDA as a means of further encouraging FlexTech providers to actively market the program to the target audience. NYSERDA will also work to further enhance partnerships and work more collaboratively with investor-owned utilities to further market the FlexTech program, which should increase the exposure of the FlexTech program at energy and sustainability conferences and through direct customer interaction. Likewise, NYSERDA will

[8] Many of the outreach topics cover in FlexTech and Industrial and Process Efficiency are equally applicable to both, and therefore are not repeated in both program descriptions.

continue to work with the New York Power Authority (NYPA) to reach its energy services and energy supply customers that participate in the SBC program.

3.2.4. Metrics and Benefits

Projected MWh savings for the FlexTech Program are shown in Table 3.4.

Table 3-4. Projected MWh Savings for FlexTech Program (2008-2011)

	2008 (4th Quarter)	2009	2010	2011	2012	2013	2014	2015
EEPS	0	10,599	29,866	54,424	65,705	56,568	32,507	17,440
SBC III	-	12,406	34,117	60,258	70,449	59,372	33,674	17,723

3.2.5. Budget

The budget for the FlexTech Program is shown in Table 3-5.

Table 3-5. Projected Budget/$ for FlexTech (2008-2011) [Net of Outreach and Marketing Expenses]

	2008 (4th Quarter)	2009	2010	2011	2012	2013	2014	2015
EEPS	210,893	1,269,052	3,060,308	4,564,109	3,851,173	1,963,195	0	0
SBCIII	415,459	2,500,036	6,028,815	8,991,308	7,586,823	3,867,500	-	-

The estimated outreach and marketing budget for the FlexTech Assistance Program will total approximately $800,000 for 2008-2011.

3.3. Industrial and Process Efficiency Program

3.3.1. Description of Current Program

Through the **New York Energy $mart**[SM] Program, NYSERDA offers incentives through its Enhanced Commercial and Industrial Performance Program and Peak Load Reduction Program for process efficiency projects. While there has been substantial industrial participation to date, there has been limited process efficiency activity, leaving considerable opportunity for increased energy efficiency gains in the industry, data center, municipal water and wastewater, agriculture, mining and extraction sectors. Industrial and process improvements are complex projects with large energy, economic development and productivity benefits. Potential for process improvements will be predominantly in industrial facilities and data centers.

NYSERDA has a well established research and development process and product innovation program and has built a large and nationally recognized knowledge base of the marketplace needs of the customers and service providers in these sectors. As a result of SBC III efforts, valuable, innovative demonstrations of under-used technologies were pursued. These demonstrations were relatively small in scale due to funding limitations, leaving unrealized potential that will be the focus of this Fast Track effort.

3.3.2. Program Enhancements for EEPS Fast Track

In response to market feedback and increased funding, NYSERDA developed an additional component to its Existing Facilities Program that will provide performance-based incentives for cost-effective process improvements that reduce energy use per unit of production. This component is the implementation path for process improvement projects developed through the FlexTech Program, or brought to this program independently.

The process efficiency component will focus on key manufacturing sectors in New York State such as chemicals (including pharmaceuticals), printing and publishing, automotive, food processing and forest products. Data centers are included as their process energy consumption is similar to manufacturing consumption in its load shape, process oriented characteristics, economic development impact, power quality requirements, mission critical nature and load growth potential. In addition, agriculture, mining, extraction and water/wastewater also have similar process orientated missions and expectations. Incentives will be offered for energy efficiency projects in all of these sectors that reduce energy use per unit of production.

Industry and processes require customized approaches to energy efficiency. Production lines and processes often have unique characteristics and functions. Site and sector-specific approaches will be used to ensure that the best energy efficiency opportunities are identified and addressed. This approach will maximize process and energy reliability, productivity and energy savings. NYSERDA will increase its engagement of service providers who are experts in particular industrial processes and data centers. Credibility and quality of technical assistance are essential to program success as are customer and stakeholder engagement.

3.3.3. Program Marketing, Outreach, and Education

Outreach[9] to industrial and process customers will use a targeted approach emphasizing the availability of the entire NYSERDA program portfolio. These efforts will be coupled with the development of strong relationships with key market players and guidance with accessing other local, state, regional, and

[9] Many of the outreach topics cover in FlexTech and Industrial and Process Efficiency are equally applicable to both, and therefore are not repeated in both program descriptions.

national funding and assistance. As the implementation continuum for industrial projects often take a measurable amount of time, NYSERDA's outreach strategy will focus on direct and continuous customer contact. Efforts to encourage participation from all levels -- from facility managers to senior management -- will be continued.

NYSERDA will build upon its relationships within the industrial sector through the use of common stakeholders, industry-specific organizations, civic organizations, trade associations, and upstream industrial equipment supply chains. Examples include:

- Consumer trade groups, such as Multiple Intervenors (MI), the Manufacturers' Association of Central New York (MACNY) and the Business Council of New York State (BCNYS);
- Trade associations, such as the American Institute of Chemical Engineers (AIChE) and the Empire State Forest Products Association;
- Vendors, such as those producing custom built manufacturing process equipment and those producing large process support equipment (*e.g.* motors and compressors): and
- Partnerships with complimentary organizations such as water/wastewater, utility, economic development, and climate change organizations.

While NYSERDA's emphasis is identifying and implementing energy-related productivity projects, outreach efforts will specifically target additional opportunities for industrial process customers. For example, the NYSERDA **Energy $mart**[SM] Industrial Focus Program enhances the outreach function to the industrial market segment. Currently funded through SBC III, this outreach activity will be expanded to reach the additional goals established in the Fast Traek effort. Expansion will include outreach to the data center market segment, as that market segment is fast-growing, energy-intensive, and has tremendous potential increased energy efficiency savings. The Industrial Focus program promotes the education and training of facility technical staff in energy efficient operations, accessing technical assistance and available services (through state, regional, national, and international programs), and assists in identifying, prioritizing and implementing efficiency-upgrades projects and strategies. The **Energy $mart**[SM] Focus on Water/Waste Water will conduct similar efforts.

3.3.4. Metrics and Benefits

Anticipated MWh savings for the Industrial and Process Efficiency Program are shown in Table 3-6.

Table 3-6. Projected MWh Savings for Industrial Process and Efficiency Program (2008-2011)

	2008 (4th Quarter)	2009	2010	2011	2012	2013	2014	2015
EEPS	0	122,500	197,696	257,031	213,281	49,219	-	-

3.3.5. Budget

The budget for the Industrial and Process Efficiency Program is shown in Table 3-7.

Table 3-7. Projected Budget/$ for Industrial and Process Efficiency Program (2008-2011) [Net of Outreach and Marketing Expenses]

	2008 (4th Quarter)	2009	2010	2011	2012	2013	2014	2015
EEPS	0	5,359,686	14,069,188	22,720,410	25,269,157	17,550,055	7,092,851	1,150,590

The estimated outreach and marketing budget for the Industrial and Process Efficiency program will be approximately $6.0 million for 2008-2011.

SECTION 4. Fast Track Program for Residential

4.1. Statewide Residential Point-of-Sale Lighting (CFL Expansion) Program

4.1.1. Description of Current Program

The **New York Energy Smart[SM] Products Program** partners with retailers and manufacturers to increase the supply of and demand for energy efficient ENERGY STAR® products within SBC territory. The Program currently partners with over 930 retailers and 34 manufacturers of various energy efficient ENERGY STAR products.

Program efforts include working with retailers by providing: staff training, point-of-purchase materials for stores, financial assistance with marketing and promotional efforts, and market share incentives. Retailers are required to sell at least one type of qualified product, provide monthly sales data, and sign a partnership agreement. Similarly, manufacturers are provided financial assistance for cooperative advertising and product buy-downs and assistance in delivering products to retail partners. Manufacturing partners must manufacturer at least one qualified product, provide quarterly shipping data, and sign a partnership agreement.

Increasing the availability of ENERGY STAR lighting products has been a focus of the Program for the past two years. As a result, retail partners who sell lighting products increased from 68 (2006) to 451 (2008) and the program added nine new lighting manufacturer partners. The Program's strategy for lighting is two-fold: to recruit new retail locations, with an emphasis on grocery, drug, and do-it-yourself stores; and to continue to increase manufacturer buy downs (in all retail locations). Grocery and drug stores are high traffic locations that consumers typically visit at least once a week. High traffic retail locations combined with attractive, educational promotions on compact fluorescent light bulbs (CFLs) entices consumers to make a purchase even if it is unplanned.

4.1.2. Program Enhancements for EEPS Fast Track

The following efforts are planned as program enhancements for the Fast Track effort:

· *Increase marketing and co-op advertising promotions with retail stores and lighting manufacturers.* Additional funds will allow retail manufacturing partners to offer additional and larger promotions aimed at educating consumers about the benefits of CFLs. Working with manufacturers is vital as they have the ability to impact the market faster through their networks of retailers and distributors. Caps for cooperative advertising promotions will also be increased.

· *Continue to increase the network of retail partners and manufacturers.* To date, the program has successfully targeted grocery and drug stores. Additional funds will be used to target bodegas, discount stores, department stores, membership clubs, do-it-yourself/hardware stores, and franchisees.

· *Increase consumer accessibility to a wider variety of CFLs.* Provide incentives to retailers to increase the number of CFLs sold and increase permanent shelf space for these products. New incentives will be provided to help retailers market CFLs, to increase the variety of CFLs that they carry, and to ensure CFLs permanently occupy valuable shelf space that is currently occupied by incandescent bulbs. Market share incentives are currently used in the program to help increase the market share of ENERGY STAR products sold. These incentives have been effective and will be expanded.

· *Increase in-store promotions and point-of-purchase information to educate consumers.* Current efforts to educate consumers on the benefits of using CFLs will continue to be important to dispel negative publicity surrounding CFLs based on past defects and mercury disposal issues.

· *Increase participation in the CFL Collection Center Program.* Continue current efforts recruiting existing retail partners to provide collection services for CFLs to consumers throughout SBC territory. The collection program also educates consumers on the mercury content of CFLs and the importance of proper disposal. The program will use its existing SBC funding to market this program to retailers statewide.

· *Promote the manufacture, sale, and usage of high power factor CFLs.* The program will promote high power factor CFLs to consumers providing retailers and manufacturers with incentives to sell and manufacture such product.

4.1.3. Program Marketing, Outreach, and Education

The goals of the EEPS Fast Track Program require an ambitious marketing, outreach, and education component. CFL marketing, outreach and education will include the use of mainstream media such as television commercials and Internet advertisements. These two media have been very effective in educating consumers and increasing consumer demand. A new CFL television commercial will be created to promote CFLs to a broad demographic market. The television spot will entice people to switch to CFLS and visit GetEnergySmart.org for more information about CFLs. Internet advertisements are low cost and a good opportunity to reach a growing audience of consumers who use the Internet for research before making purchase decisions.

In addition to marketing CFLs through television and the Internet, the program will invest in an aggressive public relations campaign. This campaign will promote the use of CFLs through: standard print publications utilizing advertorials, testimonials; and a series of consumer contests and special events. Since messaging needs to reach a very broad market, efforts will include a traditional component and non-traditional component. Television and print comprise the traditional elements of a marketing campaign while the Internet, consumer contests, and events comprise the non traditional component. By using these two approaches, the public relation campaign's message will be delivered to more people.

· *Traditional Component.* The program will leverage opportunities that are already available through NYSERDA's local television and print contracts. Television spots will be run as Public Service Announcements (PSAs) on local television stations. In addition, consumers will be reached through cable television. Local print contracts, mainly weekly papers, will run a series of advertorials highlighting the benefits of CFLS and addressing barriers to market penetration such as perceived product limitations (color, sizes, etc.), purchase costs vs. lifetime costs, and mercury disposal issues. Through NYSERDA's marketing contractors, press releases will be issued to highlight program features and milestones.

· *Non Traditional Component.* Internet advertising will be used to promote CFLs. Advertising on local newspaper web sites, search engines, and other popularly viewed web sites has been used to a limited extent and will be expanded significantly. Building on promising results for other program initiatives, this approach will be applied to CFLs. Consumer contests, such as www.youtube.com video contests, will target a younger demographic to impact future generations. Contests will bring a hip and edgy component to the campaign where consumers can create videos and submit them to NYSERDA to be played on the www.GetEnergySmart.org web site. NYSERDA will continue to display materials at more traditional events such as baseball games, home shows, and the New York State Fair. New venues will be used to reach markets the program has been unable to reach due to limited funding.

Marketing activities and program participation will be monitored and adjusted as necessary to ensure that funding and program impacts are aligned geographically with utility collections. For example, if internet ads targeting a specific region of the state result in achievement of the sales target for that region, the ads can be pulled or run in a different part of the State where goals have not been met. Similarly, increased public relation efforts can be undertaken in areas where increased customer participation rates are sought.

The www.GetEnergySmart.org web site will be updated and be a "go to" place for consumer and partner information on CFLs. Information on participating retailers who sell CFLs already exists on the web site, but modifications need to be made to provide additional information. For example, a "CFL Expert" will be added to help consumers select a CFL for a specific application(s). The CFL Expert will address various wattages, color rendering, specialty bulbs, three-way, capability, dimmability, and other features that are important to consider when looking for CFLs.

4.1.4. Metrics and Benefits

Through the CFL Expansion Program, it is estimated that 16.7 million CFLs will be installed within SBC territory, saving approximately 1,071,150 MWhs. Of the estimated 16.7 million CFLs sales the program will impact, 30% (approximately 5,000.000 CFLs) will be purchased as a result of direct program incentives and 70% (approximately 11,682, 901 CFLs) of the bulbs will be purchased as a spillover from program marketing, outreach, and education efforts.

4.1.5. Budget

The budget for the CFL Expansion Program is shown in Table 4-1. Implementation costs are modest at 10%, as there is a pre-existing contractor working on the program. The program has allocated the most funding for incentives (50%), with an average incentive of $1.70 per bulb for 5 million CFLs. The marketing budget is designed to help sell an additional 11 million CFLs without an incentive. Totals program costs will result in 16.7 million CFLs for an average incentive of $1.30 per bulb (those as a result of incentives and including attributed spillover).

Table 4-1. Projected Budget/$ for CFL Expansion Program (2008-2011) [Net of Outreach and Marketing Expenses]

	2008 (4th Quarter)	2009	2010	2011	2012	2013	2014	2015
EEPS	787,106	5,733,842	5,889,615	4,842,993	-	-	-	-

The estimated outreach and marketing budget for the CFL Expansion Program will total approximately $4.8 million for 2008-2011.

SECTION 5. Fast Track Programs for Low-Income

5.1. EmPower New York[SM]

5.1.1. Program Description

The focus of EmPower New York[SM] (EmPower) is on cost-effective electric reduction measures, particularly lighting and refrigerator replacements, as well as other cost-effective home performance measures (insulation, air-sealing, heating system repair and replacement, and health and safety measures). In-home energy use education provides customers with additional strategies for managing their energy costs. Participants are also invited to energy-use management and financial management workshops held in communities across the state.

Electric customers that live in 1-to-4 family homes or small multifamily buildings with 100 units or less, and either participate in a utility payment assistance program, or have a household income below 60% of State median, are eligible. There is no cost to the customer. In rental situations, measures that directly benefit the eligible tenant are eligible without a landlord contribution. Additional measures generally require a 25% landlord contribution. The energy efficiency services are delivered by a mix of nearly 100 private contractors and Weatherization Agencies accredited by the Building Performance Institute (BPI).

5.1.2. Program Enhancements for EEPS Fast Track

In order to meet the kWh goals in the June 23, 2008 Order, NYSERDA will focus all of the available funding on electric reduction measures. NYSERDA will target resources to low-income customers in the six investor-owned electric utility service territories consistent with the annual collections reported in the June 23, 2008 Order. Currently approximately 20% of program completions include home performance measures, supported in part by the participation of certain gas utilities.[10] NYSERDA has continued to meet with interested parties to determine how best to leverage additional funding for low income households and to possibly expand these low-income coordination efforts to other geographic areas of the State.

5.1.3. Program Marketing, Outreach, and Education.

The program relies primarily on referrals from participating utilities of customers in their payment assistance programs and does not directly market to potential participants. NYSERDA will contact participating utilities to develop utility referral mechanisms that will help ensure that resources are committed according to utility collections. The utility referrals are supplemented by outreach to Offices for the Aging, Departments of Social Services, and Weatherization Agencies. An annual marketing and contractor recruitment budget of $50,000 will cover costs associated with these activities.

[10] Efforts include those in the National Grid, National Fuel Gas Distribution and Consolidated Edison service territories. For the year ending August 31, 2008, National Grid provided $2.5 million for EmPower to provide home performance measures to an estimated additional 965 natural gas customers. NYSERDA also coordinates with National Grid's low-income natural gas program in New York City to deliver electric reduction measures. NYSERDA has an agreement with National Fuel to deliver EmPower to participants in its Conservation Incentive Program. The current agreement provides NYSERDA with $2.9 million to provide efficiency services to an estimated 718 natural gas customers. NYSERDA received $1million to deliver gas efficiency measures to an estimated 370 Con Ed natural gas customers in coordination with Weatherization Agencies.

In-home energy use management education will be provided to all EEPS-funded participants. Participants are also invited to the free energy-use management and financial management workshops conducted across the state. An estimated 400 energy-use management and 200 financial management workshops are planned for the up-coming program year. The workshops will continue to be funded by SBC.

5.1.4. Metrics and Benefits

The program will prioritize cost-effective efficiency measures for low-income households with high energy costs. The annual energy savings are estimated at 1,306 kWh per household served. The program will supplement the efficiency services with energy use management and financial management education. It will develop an effective referral mechanism to target services to households with high energy burdens and improve coordination of complementary low income energy programs. The program will enhance the network of energy service providers, including private contractors and Weatherization Agencies. Total, approximate households served are anticipated to be: 4,357 in 2008; 13,900 in 2009; 16,093 in 2010; 9,042 in 2011 and 2,261 in 2012; for a total cumulative goal of 50,643 households. The projected MWh savings for the EmPower Program effort are shown in Table 5-1.

Table 5-1. Projected MWh Savings for EmPower Program (2008-2011)

	2008 (4th Quarter)	2009	2010	2011	2012	2013	2014	2015
EEPS	650	9,042	9,042	9,042	1,661	-	-	-
SBC III	3,985	10,219	7,051	0	0	-	-	-

5.1.5. Budget

The EmPower budget for both Fast Track (EEPS) and SBC III is shown in Table 5-2.

Table 5-2. Projected Budget/$ for EmPower Program (2008-2011) [Net of Outreach and Marketing Expenses]

	2008 (4th Quarter)	2009	2010	2011	2012	2013	2014	2015
EEPS	500,000	7,280,000	7,280,000	7,280,000	1,320,000	-	-	-
SBC III	3,864,122	9,900,000	6,851,506	-	-	-	-	-

The estimated outreach and marketing budget for the EmPower Program that, as previously stated, will include contractor recruitment efforts, will be approximately $150,000 for 2008-2011.

SECTION 6. Statewide Customer Outreach and Education and Marketing

6.1. Strategy

The goal of the Statewide Customer Outreach and Education and Marketing effort is to increase consumer awareness and understanding related to energy efficient practices, products and services. Efforts will further ensure that consumers are aware of ways to obtain additional information and access programs that will increase both their understanding of the economic and environmental value of energy efficiency, in addition to prompting action and enrollment in the programs that are available under the EEPS. The overarching strategy is to convey the benefits associated with energy-efficient products, energy conservation, demand response, and the associated technical assistance and financial incentives that are available to support customer efforts.

The initiative will commence with a competitive solicitation (anticipated Fall 2008) to hire an experienced consultant that will develop a marketing plan to reach the primary target consumer -- those eligible participants interested in learning more about energy issues and the contributions they can make, as well as the secondary target consumer (non-eligible energy consumers). The consultant will develop the marketing plan in coordination and cooperation with DPS and NYSERDA staff, and members of the EEPS Marketing Advisory Group.

The marketing plan will include the following elements: overall goals and objectives, measurement and metrics tools, creative development, media production and placement, stakeholder outreach, internet strategies, material development and distribution, as well as other modes and methods of delivering appropriate messages to the target audience. The Statewide Customer Outreach and Education and Marketing effort will create a consistent, coherent theme for all EEPS-related marketing. Although the campaign will likely operate on a multi-media platform and involve many stakeholders, it will create a seamless, broad-based customer appeal regardless of geographic region. The effort may access existing grass roots (*e.g.*, community-based organizations and **New York Energy $mart**[SM] Communities Coordinators) networks to broaden the message and its appeal to consumers.

6.2. Budget

The budget for the Statewide Customer Outreach and Marketing effort is presented in Table 2-1. DPS and NYSERDA Staff will develop specific strategies and annual budget allocations.

SECTION 7. Enhanced Evaluation, Measurement, and Verification

7.1. Transition Plan

The June 23, 2008 EEPS Order called for NYSERDA to file, within 60 days, a Transition Plan identifying steps that will be taken to enhance NYSERDA's program evaluation efforts. The Order specifically directed NYSERDA to describe planned enhancements to evaluation, measurement and verification, including (a) creation of a uniform database allowing more comparable evaluation of programs, and (b) increased detachment of NYSERDA from evaluation contractors, and increased involvement of DPS Staff in oversight of evaluation. The NYSERDA Transition Plan contains a full discussion of these issues, beyond the summary presented here.[11]

7.1.1. Development of Uniform Database

NYSERDA recognizes that it will not be an easy undertaking to consistently and regularly track progress across all EEPS program administrators. However, consistent and regular tracking is absolutely critical for the State to be able to monitor progress toward the 15 x 15 goal, and to justify each and every program intervention contributing to that progress.

NYSERDA is in a unique position of having put in place an internal tracking and reporting system that is largely consistent across the programs it administers. This has been the result of many years worth of effort. NYSERDA will use this experience and will work collaboratively with other program administrators and DPS via the Evaluation Advisory Group (EAG) to foster the development of a uniform database that will allow for consistent and regular tracking of the State's efforts to achieve the targets of the EEPS programs and the overarching 15 x 15 goal. NYSERDA will obtain such hardware, software, and technical assistance necessary to assist DPS Staff in the design, development, and implementation of a uniform database allowing more comparable evaluation of programs administered by NYSERDA, utilities, and other program administrators, if any, on behalf of the PSC. NYSERDA intends to use the interest earnings to fund these activities.

7.1.2. Increased Transparency and Stakeholder Involvement

NYSERDA has always viewed the Department of Public Service Staff as a key partner and stakeholder in terms of the high level public policy goals and the day-to-day programmatic direction of the SBC activities. Just a few ways in which DPS Staff have played a key role in the past include: participation on NYSERDA Technical Evaluation Panels to review solicitations and select projects and contractors for funding; participation in SBC Advisory Group meetings; and involvement in evaluation planning and review of evaluation reports. NYSERDA expects that this relationship and involvement would continue, and be increased in the future. This continued and enhanced relationship will be fostered by: NYSERDA's procurement of an independent evaluation advisor to assist DPS Staff and the EAG in their review and critique of all program administrators' evaluation efforts; NYSERDA's active participation on the EAG; and an increasingly open planning and implementation process for evaluation efforts (as is being initiated in this Supplemental Revision and in the NYSERDA Transition Plan).

7.2. Evaluation Reporting and Benefit Cost Analysis

Each year, NYSERDA and its evaluation contractors will prepare three quarterly reports and one annual report covering both the SBC-funded **New York Energy $mart**[SM] Program and EEPS Fast Track portfolio progress to date. NYSERDA will consult with DPS Staff and the EAG to modify the existing format of the SBC Program quarterly and annual reports, as needed, in order to also fulfill reporting needs

[11] NYSERDA, *NYSERDA Transition Plan for Enhancing Program Evaluation*, Prepared for the New York State Public Service Commission, Case 07-M-0548 Proceeding on Motion of the Commission Regarding an Energy Efficiency Portfolio Standard, filed August 22, 2008.

for EEPS programs. The quarterly and annual reports will show NYSERDA's tracking or allocation of committed funds, spending, and energy savings to both SBC and EEPS Fast Track.

The quarterly and annual reports will include: financial status, program progress indicators, energy savings[12], peak demand reductions, customer bill savings, and progress toward goals. As available from program-specific evaluation work, recommendations made by NYSERDA's evaluation contractors and NYSERDA's response will also be included. NYSERDA will also make available copies of all detailed reports prepared by evaluation contractors to support the quarterly and annual reports, and will work with DPS Staff, the EAG, and the EEPS advisor consultant, as needed, on the development of these detailed reports.

Quarterly reports will be provided to the Commission within 60 days of the end of each calendar quarter. The annual report will substitute for the fourth quarterly report, summarizing program and portfolio progress throughout the calendar year. The annual report will be submitted to the Commission within 90 days of end of the calendar year.

Monthly status "scorecard" reports will also be provided to DPS by NYSERDA. These reports will document key, summary level information on program funding, participants, and energy savings. While NYSERDA will endeavor to provide the most accurate information possible in the scorecard reports, they will not be a product of the overall program evaluation effort.

Detailed reports presenting results from evaluation studies conducted by NYSERDA's evaluation contractors will be provided to DPS and the EAG upon completion. NYSERDA also expects to involve DPS and the EAG in the evaluation process leading up to the delivery of these detailed reports. Final reports will align with requirements set forth in the DPS evaluation guidelines, and include: methodology, key results, recommendations, summary and conclusions, and appendices with detailed documentation.

Once per year, NYSERDA will update benefit/cost ratios for each major program and for the entire portfolio of SBC-funded **New York Energy $mart**[SM] and EEPS Fast Track programs. NYSERDA will conduct benefit/cost analysis for its programs in a manner consistent with other program administrators, as appropriate. NYSERDA has worked with its evaluation contractors over the years to conduct benefit/cost analyses on the SBC program, and has knowledgeable staff and a tool in place to accomplish benefit/cost analyses for all of its SBC and EEPS programs. NYSERDA is prepared to make adjustments to its current practice should DPS Staff or the EAG decide that alternative methods, tools, or inputs are superior or would foster greater consistency among program administrators.

7.3. Evaluation Plans

7.3.1. Background Information

This Supplemental Revision includes preliminary, program-specific evaluation plans for each of the five NYSERDA Fast Track programs. Each program-specific evaluation plan was developed based on NYSERDA's current plans for design and administration of the programs. Program background information, including program description, objectives, and anticipated savings is provided in earlier sections of this document.

[12] NYSERDA will report cumulative annual energy savings for each program and the portfolio of programs. Cumulative annual savings will be adjusted to reflect the results of measurement and verification and attribution evaluation studies conducted in compliance with the evaluation protocols developed by the DPS Staff. For programs receiving both EEPS and SBC3 funding, energy savings will be allocated to each funding source.

These evaluation plans have been prepared using best efforts and allow NYSERDA flexibility to adapt the approaches that best suit the program as implemented, the final evaluation protocols, and the ultimate available funding, after accounting for overarching studies and other higher-level evaluation costs. NYSERDA's estimated evaluation budget for each program includes a set-aside for developing a full evaluation plan with DPS Staff and EEPS EAG involvement. NYSERDA will endeavor to comport with evaluation guidelines and protocols set forth by DPS Staff. NYSERDA will also reference the guidelines put forth by the American Evaluation Association for conducting ethical evaluations.

7.3.2. Budget Considerations

With regard to the evaluation of the five Fast Track programs, NYSERDA arrived at approximate budgets for those efforts based on a consideration of:

- Each individual program's expected electric savings in proportion to NYSERDA's total expected Fast Track portfolio savings;
- Each individual program's expected spending in proportion to NYSERDA's total expected Fast Track portfolio spending;
- Possible program participation levels;
- Expected distribution of electricity savings across the population of program participants;
- Nature of each program's design and intervention strategies;
- Prior evaluation methods, results, level of rigor/reliability attained, and remaining uncertainty;
- Evaluation funding level in proportion to total expected program spending.

Table 7-1. Projected Fast Track Evaluation Budget Allocations ($millions)

Program/Area	(Projected) Fast Track Evaluation Budget Allocation ($ Million)
New Construction Program	$1.90
FlexTech Expansion	$0.80
FlexTech Industrial Process	$2.50
Statewide Point of Sale Residential Lighting Program	$3.50
EmPower NY	$0.50
Overarching Studies and Costs	$2.45
Total Evaluation Budget	$11.65

Based on the above considerations, allocations for program-specific evaluation efforts are not necessarily equal to 5% across the five Fast Track programs. Furthermore, given the current uncertainty about overarching needs for evaluation funding, and without a full picture of future program offerings, the program-specific evaluation plans contained herein are intended to serve as illustrative examples at this early stage in the process. To the extent that the Fast Track programs represent expansions of current SBC3 programs, those programs will be evaluated in total (*i.e.*, both funding sources). Therefore, the preliminary, program-specific evaluation plans for High Performance New Buildings, FlexTech Expansion, and EmPower NY will likely be expanded to address SBC3 funding in the same manner described, and through a single comprehensive evaluation effort. In these cases, funding from the original and enhanced SBC III evaluation budgets will be added to support complete evaluations of the programs. Program impacts will then be allocated to each funding source.

7.3.3. Staff/Consultant Resources and Ethical/Operational Considerations

In order to provide timely evaluation of the five Fast Track programs, and to provide for cost-effective integration of the enhanced SBC evaluation with the Fast Track program evaluations, NYSERDA plans to utilize its current group of evaluation contractors to the extent possible. Current evaluation contracts will be modified, as necessary, to allow for the conduct of this additional work. Should other evaluation contractor support be necessary to provide for the enhanced level of evaluation, NYSERDA will use its

competitive procurement process to obtain these resources. However, selection of new contractors may alter the ultimate timing of evaluations proposed herein.

NYSERDA's current evaluation contractors are organized into three specialty evaluation teams covering: impact evaluation, process evaluation, and market characterization and assessment. All of the major program-specific evaluation activities covered by the DPS evaluation guidelines are represented by these teams. NYSERDA also currently has a survey data collection contractor that serves the large-scale data collection needs of each of the three specialty evaluation contractor teams. Each of NYSERDA's evaluation contractor teams was competitively selected using NYSERDA's rigorous solicitation process.

Management of evaluation contractors, and overall management of the evaluation effort, will be conducted by NYSERDA's Energy Analysis group. The Energy Analysis group has no program administration or implementation functions, and is organizationally separate from NYSERDA's other groups that perform these functions. NYSERDA and its evaluation contractors follow the American Evaluation Association's Guiding Principles for Evaluators. These principles call for: systematic inquiry, competence, integrity, honesty, respect for people, and responsibility for general and public welfare.

7.3.4. New Construction Program Evaluation Plan

The evaluation approach presented in this section was designed based on NYSERDA's current plans for the New Construction Program (NCP), and in the absence of complete knowledge about potential funding set-asides for overarching evaluation projects that would serve the needs of all EEPS program administrators. As such, these plans have been prepared in order to allow NYSERDA flexibility to adapt the approaches that best suit the program as implemented once a greater understanding is in place regarding final evaluation protocols and other evaluation projects for which funding will need to be allocated. To the extent that NYSERDA's original SBC-funded NCP can be evaluated using the same approaches and time lines outlined in this section, NYSERDA will supplement this plan to include additional funding from the enhanced SBC III evaluation funding. NYSERDA's estimated evaluation budget for this program includes a small set-aside for developing a full evaluation plan, an effort that will involve DPS Staff and the EEPS Evaluation Advisory Group.

NCP Fast Track Evaluation Budget

The evaluation budget for the New Construction program was set at approximately $1.9 million. This proposed evaluation budget is less than 5% of program funding; however, NYSERDA believes this level of funding for evaluation is justifiable and adequate to achieve a high level of confidence and precision related to program impacts. The primary driving factors supporting evaluation funding of less than 5% for this program are: the fact that the overall population of new commercial construction in the State is a relatively small market and that the most complex projects, which provide the large majority of the total expected savings for the program and require the most complex evaluation methods, will be a small percentage of the total participating projects.

Evaluation Elements

Impact Assessment

NYSERDA expects that approximately 80% of NCP evaluation funding will be allocated to impact evaluation. A primary activity will be site work for measurement and verification to support high rigor impact evaluation methods. NYSERDA and its contractors have been working, on an ongoing basis, to expand and improve database tracking to better serve the needs of both NCP implementation and evaluation. As the fast track NCP does not differ greatly in terms of program procedures from the current SBC program, NYSERDA does not anticipate significant change to the current suite of metrics that have been collected and improved over time.

Measurement and Verification (M&V). In general, under the SBC program, NCP reported savings have historically been found to be based on sound engineering calculations and sufficient post-installation verification activities. At the same time, the increased evaluation funding and call for higher rigor can significantly add to the overall reliability in the evaluation of savings estimates by supporting significant expansions in the M&V methods. More sophisticated methods with greater measurement support can significantly reduce any risks of potential bias that can be unobserved within more simplistic methods.

The planned impact evaluation will include significant site survey work on comparative samples of participants and matched non-participants. These measurement and verification efforts would then serve as input for the creation of calibrated DOE-2 models for these comparative samples (an expansion on International Performance Measurement and Verification Protocol [IPMVP] Option D). Efficient sample sizes will be chosen using stratified ratio estimation (SRE) to meet a 90/10 confidence/precision level for the statewide program over the entire evaluation cycle. If budget permits, the sample could be expanded to meet 90/10 at the utility territory level. Site visits are planned and utility usage data for participants will be needed to calibrate whole building models. As new construction projects have a long timeframe for project completion, M&V on fast track projects would be completed in 2011 and then repeated once all program benefits from the fast track effort have accrued.

Attribution. NYSERDA intends to explore participant and non-participant spillover and participant free-ridership by using an enhanced self-report survey process with multiple decision-makers including building owners, chief financial officers, vendors, technical assistance providers, etc. involved in adopting energy efficiency and green building measures. Sample sizes will be calculated to meet 90% confidence and 10% precision at the program level. If budget permits, 90/10 confidence could be achieved at the utility level. These results will be compared against the participant and non-participant models conducted for the modeling effort. Examinations will be made to assess self-selection bias between the participating and non-participating matched groups. These alternative methods will be used to derive a final triangulated net-to-gross (NTG) ratio which will provide a high level of construct validity for the NTG estimates. Given the long-term nature of new construction projects, the first attribution analysis will be conducted in 2011. The attribution work could then be updated at the conclusion of accrual of program benefits.

Process Evaluation

Previous process evaluations on the SBC-funded NCP have explored opportunities to streamline program processes, benchmarked the NCP to other programs in North America and assessed opportunities for enhancing marketing efforts. Process evaluations will explore the effectiveness of program outreach to assess how well the program is reaching the right decision makers in the marketplace. Planned activities will likely include interviews with NYSERDA Staff, service providers, and both, participants and non-participants. To the extent possible, the results will be differentiated by downstate and upstate activities. The initial process evaluation will be conducted approximately six months following the beginning of outreach activities to ensure that the evaluation effort can be effective in both identifying opportunities for improvement and documenting progress made in expanding outreach. A second process evaluation could be performed in the third year to further expand on and explore reasons for attrition. Approximately 10% of the overall budget for evaluation of the NCP will be allocated to process evaluation.

Market Characterization and Assessment

An important evaluation element for the NCP, supporting both market and impact evaluation efforts, is a baseline study of current new construction practices in New York for both participants and non-participants. It is assumed that all new buildings are constructed to the current Energy Code when calculating savings. However, given the pace and rigor of increases to ASHRAE standards, this

assumption should be verified as an accurate baseline. The McGraw-Hill Dodge databases can provide recently constructed buildings to serve as a sample. Interviews could then be done with a sample of new building owners to assess common practices on a number of specific energy measures. Then, a sample of those interviewed could be selected to do site visits and assess whether the building is performing as expected. NYSERDA believes this type of baseline study would benefit all EEPS program administrators and therefore proposes that it be undertaken in a jointly-funded manner with all program administrators contributing. The full study, including both the site visit and survey components, cannot be conducted by NYSERDA alone within the evaluation budget for the NCP. If the new construction baseline is not ultimately selected as one of the statewide studies to be funded by all program administrators, then NYSERDA could conduct the phone interview component described above, but not the site visits. Approximately 9% of the overall evaluation budget for NCP will be allocated to the basic telephone interview activities. Additional funding from NYSERDA's set aside for overarching evaluation studies could be used to support a statewide baseline study.

Evaluation Plan Variations

Given the level of uncertainty regarding final evaluation protocols, statewide studies to be conducted by all program administrators, and funding levels needed to support other overarching evaluation activities, the evaluation plans presented in this section should be viewed as scalable and flexible. Specifically, if the total evaluation budget for this program needs to be reduced, NYSERDA would first remove funds from the market and process evaluation work areas. These areas could be limited in terms of their sample sizes and evaluation frequency, if needed. Conversely, if more of NYSERDA's total evaluation funding for fast track programs could be allocated to this program, the additional funds would be allocated to expand and increase the rigor of impact evaluation work.

7.3.5. Flex Tech Expansion Evaluation Plan

The evaluation approach presented in this section was designed based on NYSERDA's current plans for the FlexTech Expansion Program, and in the absence of complete knowledge about potential funding set-asides for overarching evaluation projects that would serve the needs of all EEPS program administrators. As such, these plans have been prepared in order to allow NYSERDA flexibility to adapt the approaches that best suit the program as implemented once a greater understanding is in place regarding final evaluation protocols and other evaluation projects for which funding will need to be allocated. To the extent that NYSERDA's original SBC-funded FlexTech Expansion Program can be evaluated using the same approaches and time lines outlined in this section, NYSERDA will supplement this plan and include additional funding from the enhanced SBC III evaluation funding. NYSERDA's estimated evaluation budget for this program includes a small set-aside for developing a full evaluation plan, an effort that will involve DPS Staff and the EEPS Evaluation Advisory Group.

Flex Tech Expansion Fast Track Evaluation Budget

The evaluation budget for the FlexTech Expansion Program was set at approximately $800,000. This proposed evaluation budget is approximately 5% of program funding. NYSERDA believes this level of funding for evaluation is justifiable and adequate to achieve a high level of confidence and precision related to program impacts. The primary factor supporting evaluation funding of 5% on this program is the expectation that a large majority of the total expected savings from the program will come from a relatively small percentage of the participating projects.

Evaluation Elements

Impact Assessment

NYSERDA expects that approximately 60% of the FlexTech Expansion Program evaluation funding will be allocated to impact evaluation. A primary activity of this evaluation will be measurement and verification of savings.

Measurement and Verification (M&V). Measurement and verification (M&V) will involve site visits and simple engineering modeling of installed measures, as well as an analysis of energy use data for all participants (those that received studies). Because of the potential lag in savings between participation and implementation, no impact evaluation is anticipated in the first year of the expansion.

The FlexTech Expansion Program M&V methodology is designed to address the unique nature of the program, whereby NYSERDA cost shares an investigation and a report of a facility's energy operations, but no action is required by the facility. The realization rate will reflect both the percent of savings from measures recommended in completed studies that have been implemented, and the percent of estimated savings for implemented measures that is actually achieved, as determined by a site visit. A sub-sample of site visits may involve monitoring and/or measurement (meeting as a minimum the standards of IPMVP Option A including the use of direct measurement). The impact evaluation methodology will involve a major direct, on-site verification component that will provide the data necessary for these calculations.

First, participants will be surveyed to determine whether any recommended measures or actions were implemented. The survey sample will be stratified by utility service territory and then the magnitude of potential (recommended) savings within that stratum. Due to the relatively small number of anticipated program participants, it is expected that a 90/10 confidence/precision level by utility service territory can be achieved, even given the smaller overall dollar value allocated to this program evaluation effort. Second, potential site visits will be selected based upon the results of the telephone surveys. A census of large energy-saving sites and a sample (meeting 90/10 confidence/precision levels) of remaining sites in each utility stratum will be selected for verification site visits. The smallest savers may be eliminated as site visit candidates. Savings will be estimated, using simple engineering models at a minimum[13], based on reported baseline conditions (or code assumptions) and as-built conditions. Results will be weighted by utility and for the program as a whole.

Due to the lag time in the implementation of measures for this type of program, impact evaluations would be conducted in 2011 for measures installed/implemented through 2010, and again in 2013 for installation and implementation completed through 2012. Savings are expected to accrue past 2012, but these projects are not expected to differ markedly from those examined in the first two impact evaluations, so follow up will be significantly less intensive. The process evaluation will include conducting calls with participants in each year as part of the attrition analysis. These calls will also be leveraged to identify sites available for M&V activities.

Attribution. Net savings will be estimated at the 90/10 confidence/precision level via an enhanced self-report survey method with key decision-makers (customers, service providers, etc.) for specific measures, using state of the art survey instruments. Savings-weighted free-ridership and spillover will be estimated using these data. Non-participant spillover will be estimated using similar surveys, but these will be

[13] More sophisticated methods may be selected for the largest energy-saving sites and the method selected will depend upon an assessment of the most reliable, and cost-efficient method for the application being examined. For example, a large industrial process measure might best be measured through IPMVP Option B and calibrated DOE-2 modeling (IPMVP Option D) might be most appropriate for a comprehensive large office building application.

implemented as part of the process and market studies. Initially, the survey instruments will be based upon NYSERDA's long-term refinement of these questions, including additions to ensure construct validity and other potential reliability issues to achieve the highest cost-efficient rigor levels.

Market Characterization and Assessment

An important part of any program evaluation is a thorough understanding of the market environment in which it is operating. NYSERDA believes that the best approach to fully characterize the target market for this and other commercial/industrial sector programs includes a large-scale baseline and measure saturation study, coupled with surveys of various market actors such as engineering firms, manufacturers, and specialty contractors.

The large-scale baseline and measure saturation study would be conducted through site visits to fully characterize buildings and facilities in these sectors, the equipment in use, vintage and efficiency levels of motors, HVAC, lighting, etc., to establish an understanding of equipment holding in the sector, and other factors. The survey element should focus on current practice, customer and market response, and decision-making processes.

NYSERDA believes this type of study would benefit all EEPS program administrators, and therefore proposes that it be undertaken in a joint-funded manner with all parties contributing. The full study, including both the site visit and survey components, cannot be conducted by NYSERDA alone as part of the evaluation budget for the FlexTech Expansion Program. However, if it is decided that this type of joint study is not worthy of support by all potential program administrators, NYSERDA plans to allocate approximately 12% of the overall evaluation budget for the FlexTech Expansion Program to conduct the survey component only, in 2009. Although the full value of this effort will be highly diminished, the survey component will still provide valuable information to assist NYSERDA in targeting this program to better serve the industrial market and meet overall electricity savings goals.

Process Evaluation

A full process evaluation of the FlexTech Expansion Program is warranted. Process evaluation activities will include interviews with NYSERDA staff, service providers, and surveys of customers that have participated in the program. A sample of non-participants, matched to the NAICS characteristics of participants, should be surveyed as well. Customers who participated in the program but did not adopt recommendations will also be examined. Specific objectives of the process evaluation could include further examination of the program processes; database adequacy; allocation of resources between program overhead versus direct services to customers; serving both large and small customer needs; an investigation of customer linkages between participation in this program and other implementation programs; and an examination of measure adoption rates by customer type, customer needs, and potential differential marketing and informational approaches.

This process evaluation is expected to be conducted at two points in time. The first study will occur approximately a year after the program start date so as to provide early feedback regarding the program processes and participation rates. The second study will occur in the third year of program implementation to further expand on and explore reasons for attrition. The process evaluation activities will be allocated approximately 25% of the total evaluation budget for this program. Typically, past process evaluation work has achieved 90/10 confidence and precision levels, thus it is expected that future planned process evaluations will attain these levels. Efforts will also be made to eliminate, reduce, or mitigate bias in the research design.

Evaluation Plan Variations

Given the level of uncertainty regarding final evaluation protocols, statewide studies to be conducted by all program administrators, and funding levels needed to support other overarching evaluation activities such as uniform database development, the evaluation plans presented in this section should be viewed as scalable and flexible. Specifically, if the total evaluation budget for this program needs to be reduced, impact evaluation would no longer be able to meet 90/10 at the individual utility level and process evaluation would likely eliminate the non-participant sample and other potential participant groups in an attempt to focus on only the most relevant samples for achieving the highest priority goals of the evaluation. Conversely, if more of NYSERDA's total evaluation funding for fast track programs could be allocated to this program, the additional funds would allow for more site-specific data collection as part of the impact evaluation.

7.3.6. Industrial and Process Efficiency Evaluation Plan

The evaluation approach presented in this section was designed based on NYSERDA's current plans for the Industrial and Process Efficiency Program, in the absence of complete knowledge about potential funding set-asides for overarching evaluation projects that would serve the needs of all EEPS program administrators. As such, these plans have been prepared in order to allow NYSERDA flexibility to adapt the approaches that best suit the program as implemented, once a greater understanding is in place regarding final evaluation protocols and other evaluation projects for which funding will need to be allocated. NYSERDA's estimated evaluation budget for this program includes a small set-aside for developing a full evaluation plan, an effort that will involve DPS Staff and the EEPS Evaluation Advisory Group.

Industrial and Process Efficiency Fast Track Evaluation Budget

The evaluation budget for the Industrial and Process Efficiency program was set at approximately $2.5 million. This proposed evaluation budget is significantly less than 5% of program funding. However, NYSERDA believes this level of funding for evaluation is justifiable and adequate to achieve a high level of confidence and precision related to program impacts. The primary driving factors supporting evaluation funding of less than 5% for this program are: the expectation that a large majority of the total expected savings from the program will come from a relatively small percentage of the participating projects; and the fact that the overall population of industrial facilities in the State is small compared to the commercial or residential markets.

Evaluation Elements

Impact Assessment

NYSERDA expects that approximately 70% of the Industrial and Process Efficiency Program evaluation funding will be allocated to impact evaluation. The primary activity of this evaluation will be measurement and verification of savings.

Measurement & Verification (M&V). A full evaluation of industrial energy and demand savings will produce estimates of gross and net savings using a variety of methodologies varying in complexity related to the magnitude of predicted savings. Savings will be estimated for the time period or periods that the measures are expected to provide significant savings. Post-retrofit conditions will be established using on-site data collection of the as-built-conditions. Post-implementation direct metering will likely be used, following standard IPMVP Option B protocols.

Baseline conditions will be assessed from program data, which could include design reports, pre-metering and program forms required by NYSERDA. If these sources are not available or not adequate, baseline conditions will be established based on existing equipment, production volume, and operating schedule. Where possible, NYSERDA's independent evaluation contractors will be involved in developing requirements for baseline measurement and data collection, and supplemental baseline measurement and metering of a sample of installations.[14]

Process measures such as chillers, adjustable frequency drives, compressed air systems and combustion systems will be evaluated using a combination of short-term measurement and modeling of baseline and as-built systems. In many cases the most reliable measurement and verification methods for process improvements are to measure and provide savings estimates according to IPMVP Option B recommendations. This method will likely be used for the largest sites where equipment and metering configurations allow for it.

Assessing the impacts of lighting measures is expected to involve standard engineering calculations, supplemented by direct time-of-use logging, including current transformer loggers. For HVAC measures, the evaluation will likely involve an initial simple engineering estimate (bin model), accessing on-site energy management or process control systems, or multi-channel loggers recording hourly true power. Depending on the complexity of the facility, DOE-2 or similar simulation modeling might be used.

Sampling for the evaluation will likely be based on stratified ratio estimates, with sample sizes calculated at a relative precision of 90%, using an error ratio derived from previous or related studies. Annual cohorts will be stratified according to projected savings and sampled by strata, with the largest savers being sampled in their entirety (census), which may exclude the very smallest savers from sampling entirely.

Due to the lag time in the implementation of measures for this type of program, impact evaluations are expected to be conducted in 2011 for measures installed/implemented through 2010, and again in 2013 for installation and implementation completed through 2012. Savings are expected to accrue past 2012, but these projects are not expected to differ markedly from those examined in the first two impact evaluations, so follow up will be significantly less intensive. The process evaluation work will be leveraged to the extent possible to conduct calls with participants as part of the attrition analysis. These calls will also be used to identify sites available for measurement and verification (M&V) activities.

Attribution. Net savings will be estimated at 90/10 confidence/precision statewide using an enhanced self-report survey method with key decision-makers (customers, service providers, etc.) for specific measures, using state of the art survey instruments. Savings-weighted free-ridership and spillover will be estimated using these data. If the budget allows, the sample will be expanded to reach 90/10 confidence/precision at the utility territory level. Non-participant spillover will be estimated using similar surveys, and could possibly be combined with market and process survey activities. Initially, the survey instruments will be based upon NYSERDA's long-term examination of refinement of these questionnaires for the SBC Flex Tech Program, including additions to ensure construct validity and other potential reliability issues to best ensure the highest, most cost-efficient rigor levels.

Market Characterization and Assessment.

An important part of any program evaluation is a thorough understanding of the market environment in which it is operating. NYSERDA believes that the best approach to fully characterize the target market for this and other commercial/industrial sector programs consists of a large-scale baseline and measure

[14] Evaluation contractors will also work with program staff to determine if a pre-post evaluation measurement study can be designed to work alongside program operations, allowing both more reliable independent savings estimates and ensuring not to hamper program achievements or significantly affect customer satisfaction.

saturation study, coupled with surveys of various market actors such as engineering firms, manufacturers, and specialty contractors.

The large-scale baseline and measure saturation study would be conducted through site visits to fully characterize buildings and facilities in these sectors, the end-use equipment in use, vintage and efficiency levels, and other factors. The survey element should focus on current practice, customer and market response, and decision-making processes.

NYSERDA believes this type of study would benefit all EEPS program administrators, and therefore proposes that it be jointly-funded with all program administrators contributing. The full study, including both the site visit and survey components, cannot be conducted by NYSERDA alone as part of the evaluation budget for the Industrial and Process Efficiency Program. However, if it is decided that this type of joint study is not worthy of support by all potential program administrators, NYSERDA will allocate approximately 12% of the overall evaluation budget for the Industrial and Process Efficiency Program to conduct the survey component only, in 2009. Although the full value of this effort will be highly diminished, the survey component could still provide valuable information to assist NYSERDA in targeting this program to better serve the industrial market and meet overall electricity savings goals.

Process Evaluation

Process evaluation will focus on the participation and decision-making process in the industrial sector. Those that have not participated in the program or applicants that never installed measures will form the non-participant population. Partial participants (those that implemented some but not all measures) will also likely be interviewed. Areas of inquiry expected for the process evaluation work include:

- Attrition analysis focusing on the reasons for non-participation and drop out at different stages, which will also help identify sites for impact evaluation M&V
- Barriers to participation
- Adequacy of the performance incentive to prompt participation
- Overall customer satisfaction with the program participation process
- Examination of customer decision-making

The process evaluation work will generate actionable recommendations for improvements to the program. It is expected that process evaluation will be conducted at two points in time. The first evaluation will occur approximately a year after the program start date so as to provide early feedback regarding the program processes and participation rates, and the second evaluation will be in approximately the third year to further expand on and explore reasons for attrition. Approximately 15% of the overall evaluation budget for the Industrial and Process Efficiency program will be allocated to process evaluation.

Typically, past process evaluation work has achieved 90/10 confidence and precision levels, thus it is anticipated that future planned process studies will attain these levels. Efforts will also be made to eliminate, reduce, or mitigate bias in the research design.

Evaluation Plan Variations

Given the level of uncertainty regarding final evaluation protocols, statewide studies to be conducted by all program administrators, and funding levels needed to support other overarching evaluation activities, the evaluation plans presented in this section should be viewed as scalable and flexible. Specifically, if the total evaluation budget for this program needs to be reduced, NYSERDA would first remove funds from the market and process evaluation work areas. These areas could be limited in terms of their sample sizes and evaluation frequency if needed. Conversely, if more of NYSERDA's total evaluation funding for fast track programs could be allocated to this program, the additional funds would be allocated to the

market and process evaluation work. Specifically, the second process evaluation could be expanded to address progress in improving program processes and the market characterization surveys could be expanded to include more market actors.

7.3.7. Statewide Residential Point-of-Sale Lighting (CFL Expansion) Program Evaluation Plan

The evaluation approach presented in this section was designed based on NYSERDA's current plans for the CFL Expansion Program and in the absence of complete knowledge about potential funding set-asides for overarching evaluation projects that would serve the needs of all EEPS program administrators. As such, these plans have been prepared in order to allow NYSERDA flexibility to adapt the approaches that best suit the program as implemented, once a greater understanding is in place regarding final evaluation protocols and other evaluation projects for which funding will need to be allocated. NYSERDA's estimated evaluation budget for this program includes a small set-aside for developing a full evaluation plan, an effort that will involve DPS Staff and the EEPS Evaluation Advisory Group.

CFL Expansion Fast Track Evaluation Budget

The CFL Expansion fast track evaluation budget will be approximately $3.5 million through December 31, 2011. The evaluation budget for this program is significantly greater than 5% of program costs, and is based on the program's expected contribution of electric savings toward NYSERDA's fast track portfolio, and market dynamics. Given the pace at which the CFL market is changing - both in New York and nationally – and the need to have a clear understanding of this market with frequent updates, this high level of evaluation funding is necessary.

Evaluation Elements

The CFL Expansion Fast Track Program is a market-level program, as is the successful NYSERDA market transformation program it is based upon, the **New York Energy $mart**[SM] Products Program. These types of programs require market level studies specifically designed to simultaneously measure market characteristics and behavior, and derive estimates of impacts from the market perspective. NYSERDA plans to conduct a combined market and impact evaluation effort for this program. Sample selection and survey implementation for these proposed evaluation activities will be designed to achieve 90/10 confidence and precision for New York State as well as the Upstate and Downstate regions. Achieving this level of confidence and precision at the utility level is possible, depending on the type of evaluation effort. Table 7-2 summarizes evaluation activities described in the following sections.

Table 7-2. Summary of Market Impact and Process Evaluation Activities 2008-2011

	2008	2009	2010	2011
Market and impact				
Random Digit Dial (RDD) consumer survey	X	X	X	X
Saturation/socket count	X		X	
Retailer survey/stocking count	X	X	X	X
Lighting logger studies		X		X
Process				
Staff & implementation contractor interviews		X	X	
Manufacturer interviews		X	X	
Database analysis		X	X	
Analysis of process questions included in market interviews		X	X	

Market and Impact Evaluation

As the national CFL market is changing so rapidly, with large quantities of CFLs being sold in areas without CFL incentive programs, the two most important things to establish early on are: 1) the extent to which program support engenders more sales than are directly supported by the program; and 2) how much remaining potential there is for replacing incandescent bulbs with CFLs. If the answers to both questions are a substantial amount, then it would be important to measure energy and demand savings attributable to the CFL Expansion Program, and to perform a process evaluation to ensure the program, given its rapid expansion, is working properly. Early evaluation studies will be important to shaping the future of this program.

Specific evaluation tasks to fulfill this proposed activity, by evaluation element, are described below. Overarching statewide studies are necessary to support a robust evaluation effort of the CFL Expansion Program and the evaluation plan for this program includes the full cost of all necessary overarching studies. NYSERDA expects that the large majority (approximately 90%) of the CFL Expansion Program's evaluation budget will be allocated to impact and market evaluation work described below.

Net Sales Impact. Measurement of net impact (incorporating principles similar to a net-to-gross ratio on incentive programs) will occur at a market level, focusing initially on net sales rather than net energy and demand savings. This will involve estimating CFL sales in New York (excluding Long Island) and one or more comparison areas. NYSERDA specifically suggests having a separate comparison area for New York City because the types of retailers there differ substantially from those in the rest of the State. NYSERDA suggests two different methods to develop sales estimates which will help ensure data reliability. The first is a shelf space and model count (of both CFLs and other bulb types) at a representative sample of retailers where consumers buy bulbs; store managers will be asked to estimate turnover times for the bulbs that are in stock, which will be converted to an estimate of annual sales. The second method will involve a random-digit dial (RDD) survey of consumers, in which consumers will be asked to estimate the number of CFLs they have purchased. With both methods, NYSERDA will address sales in New York and the comparison areas. To mitigate issues of uncertainty such as self-selection bias and the possible inappropriateness of the selected baseline or comparison areas, NYSERDA may also rely on other sources, such as counts of CFL imports from the U.S. Department of Commerce, and sales estimates from the U.S. EPA. NYSERDA plans to conduct this work in the fall of 2008, 2009, 2010, and 2011.

Saturation. In 2008 and 2010, NYSERDA plans to visit a randomly selected sample of homes in New York (excluding Long Island) and the comparison areas to estimate the number of CFLs out of all eligible sockets that are currently installed, and the number in storage. NYSERDA will examine the results by room type, since hours of use vary. This will provide an estimate of the remaining potential for CFLs.

Gross Impact. Given a positive net-to-gross ratio from the Net Sales Impact task described above, NYSERDA will estimate the energy and demand savings from program-supported CFLs through the sources identified in Table 7-3.

Table 7-3. Summary of Gross Impact Sources for CFLs

Element	Source
Number of program CFLs sold	Program records
Wattage of program CFLs sold	Program records
Installation rates	On-site visits and telephone surveys
Wattage of replaced bulb	On-site visits and telephone surveys
Hours of use	On-site visits
Measure life	Studies from other areas
Demand factor	On-site visits

NYSERDA plans to conduct site visits in 2009 and 2011 for consumers who report buying CFLs that appear to be supported by the program (based on store and price); these site visits will likely include placement of lighting data loggers. The telephone surveys will be conducted in 2008, 2009, 2010, and 2011 as part of the net sales impact analysis task described above, but in the years in which site visits occur, they will involve larger sample sizes to allow recruitment for site visits, specifically visits to homes of those who are identified as likely purchasers of program-supported products. To the extent possible, NYSERDA will use the site visits to validate self-reported purchases and installations from the telephone survey and thus reduce uncertainty.

Net Savings Analysis. NYSERDA will apply the net-to-gross sales estimate to the gross savings estimate in order to arrive at net energy and demand savings attributable to the CFL Expansion Program.

Other Market Characterization and Assessment Activities. During the store shelf space and stocking visits, NYSERDA evaluation contractors will also gather detailed product information on CFLs and other bulb types—such as lumens, wattage, price, three-way capability, etc.—which will be used to estimate incremental costs for CFLs, in both New York and comparison areas. These in-store visits will also verify whether CFLs reported to have been shipped to partner stores are in fact on the shelves. Interviews with store managers will also ask about their perception of the CFL market, the extent to which they promote CFLs independently from the program, how many CFLs have been returned, and their return policy.

Consumer telephone surveys will ask about awareness, use, purchase and attitudes toward CFLs. During the site visits to the homes of those identified (through telephone surveys) as likely buyers of program-supported CFLs, in addition to assessing hours of use, wattage displacement, and installation rate for the gross impact analysis, NYSERDA plans to estimate the number of program-supported CFLs that are in storage, removed, thrown away, or sent outside of NYSERDA territory, etc.

NYSERDA also plans to conduct interviews with CFL manufacturers to assess how they view the market; these interviews can be conducted as part of the process evaluation, but will include market-related questions.

Process Evaluation

Early in 2009, when the program is ramping up, and again in 2010, when it will be at or near its peak, NYSERDA plans to conduct in-depth interviews with program staff, implementation contractors, retailers and consumers. The market surveys of consumers and retailers will involve process-related questions about their experiences with CFLs and the program, which will be analyzed for process evaluation purposes. The process evaluation will involve interviews with manufacturers to assess their views of the program, and to ask some market-related questions. In addition, the process evaluation will also examine up-stream verification efforts, such as determining the ability of the database to track shipments and sales, and to assess the extent to which incentives are tied to sales rather than shipments. Process evaluation activities will be funded at approximately 10% of the CFL Expansion Program evaluation budget.

Evaluation Plan Variations

Should funding levels for the CFL Expansion Program evaluation be decreased, samples for data collection (*e.g.*, subgroup analysis) and the level of effort dedicated to the proposed evaluation activities would subsequently decrease. Discussion will occur to ensure that 90/10 confidence and precision targets are still met for at least aggregate levels (*e.g.*, the **New York Energy $mart**[SM] area or New York State). Given that this program's evaluation budget is already significantly above 5% of program funding, NYSERDA does not expect it to increase.

7.3.8. EmPower Evaluation Plan

The evaluation approach presented in this section was designed based on NYSERDA's current plans for the EmPower Program, and in the absence of complete knowledge about potential funding set-asides for overarching evaluation projects that would serve the needs of all EEPS program administrators. As such, these plans have been prepared in order to allow NYSERDA flexibility to adapt the approaches that best suit the program as implemented once a greater understanding is in place regarding final evaluation protocols and other evaluation projects for which funding will need to be allocated. To the extent that NYSERDA's original SBC-funded EmPower Program can be evaluated using the same approaches and time lines outlined in this section, NYSERDA will supplement this plan to include additional funding from the enhanced SBC III evaluation funding. NYSERDA's estimated evaluation budget for this program includes a small set-aside for developing a full evaluation plan, an effort that will involve DPS Staff and the EEPS Evaluation Advisory Group.

EmPower Fast Track Evaluation Budget

The evaluation budget for the EmPower Program was set at approximately $500,000. This proposed evaluation budget is less than 5% of program funding. However, NYSERDA believes this level of funding for evaluation is appropriate given the contribution of this program to the overall portfolio level savings, and the typically low variance in the residential population, as well as other factors.

Evaluation Elements

Impact Assessment

Given the focus on acquiring kWh reduction under the EEPS Order, NYSERDA expects to spend approximately 70% of the EmPower evaluation budget on impact evaluation. NYSERDA and its contractors have been working, on an ongoing basis, to expand and improve database tracking to better serve the needs of both implementation and evaluation of the EmPower Program. Future evaluations of EmPower, as described in this section, will build on this effort. As the fast track EmPower Program is generally consistent with the current SBC program, NYSERDA will provide the same suite of metrics for EEPS: participation, electricity and non-electricity reductions, etc.

Measurement and Verification. One of the most reliable impact evaluation methods for energy efficiency programs targeting existing buildings is using pre- and post-energy use data to statistically analyze average energy savings, referred to as billing analysis. This method is generally not recommended for programs or measures that are expected to save less than 10% of total energy use as smaller levels can be difficult to isolate statistically. The EmPower Program targets average annual savings of approximately 1,300 kWh per household in the fast track program, or about 20% of use, assuming an average household electricity use of 6,000 kWh per household. This makes this program well suited to use billing analysis to obtain reliable savings estimates at a high rigor level. NYSERDA therefore plans to use billing analysis as the primary method for impact evaluation. In order to conduct this analysis, NYSERDA will require utility account numbers and then pre- and post-energy use data (kWh, kW, therms and interval/advanced meter data), for participants and non-participants, to be automatically provided in easily readable electronic formats. NYSERDA recognizes the importance of protecting confidentiality of the consumer's data and has plans for this protection. In an effort to align with the timing of expected savings, this impact evaluation effort is planned to take place in 2010, and be repeated for later participants in 2012, assuming at least 12 months pre- and post-installation consumption data (24 months of data) are available.

If the consumption data are not provided to NYSERDA, NYSERDA would aim to complete an adequate number of site visits with metering to meet 90/10 confidence and precision at the program level for the estimate of program savings. This would involve pre/post metering, delaying services to customers until after the pre-period metering was complete. Furthermore, NYSERDA may need to offer financial

incentives to help reduce this significant negative impact to customers. If this fall-back option must be implemented, NYSERDA will attempt to meter and use the most rigorons impact evaluation method that can be obtained within budget given the inability to do large-scale billing analysis.

One evaluation enhancement that NYSERDA will consider is an examination of the potential unclaimed energy savings related to household education and resultant long-term behavioral changes. Over 37,000 households have participated in on-site energy education, energy efficiency workshops, and/or financial management workshops. Data are currently being collected on what actions the customers have taken since their project was completed; this data can be used in a regression model for those households with sufficient total data, to estimate savings impacts from education/workshop participation. Also, the 2006 Process evaluation of EmPower indicated that 47% of participants surveyed installed additional energy efficiency measures on their own after participation. The increase in evaluation funding could permit NYSERDA to more completely and accurately quantify electricity savings from this program. It must be noted that consumption data is also necessary for this evaluation; the survey data alone likely will not provide a sufficient basis for counting the full savings impact from this program.

One key population served through EmPower is that of payment-troubled utility customers. If payment and other data are provided by the utilities, NYSERDA can evaluate the level and impact of program-induced reductions in late payments, total arrearage amount accumulations, shut-offs and reconnects, and other costs.

Attribution. EmPower provides services to a population with limited means of purchasing energy-efficiency goods and services on their own. Due to an anticipation of low free-ridership and spillover rates, the SBC-funded EmPower Program has not been examined for attribution of program impacts. With the enhanced and fast track EEPS evaluation funding, NYSERDA plans to conduct a pilot attribution study to explore possible spillover and free ridership among participants during the mid-point impact evaluation conducted in 2010. This pilot self-report study could be conducted to 80/20 confidence and precision standards. If this initial pilot study demonstrates some degree of free-ridership or spillover, an expanded follow-on study could be conducted at the conclusion of the fast track period, conforming to a 90/10 confidence and precision level, if deemed necessary based on results of the mid-point study. This evaluation study would be closely coordinated with the impact work to assess potential additional savings being achieved.

Process and Market Evaluation

NYSERDA plans to devote approximately 25% of the EmPower Program evaluation budget to process and market evaluation. A process evaluation conducted on the EmPower Program in 2006-2007 focused on finding opportunities to improve the programs' cost-effectiveness, reduce its costs, methods to increase the rate of recruitment, increase participant satisfaction with the various services, and extend the program into new markets. The program has since expanded statewide from the initial two pilot utility territories. A second process evaluation is currently exploring reasons for lack of response to invitations to participate, effectiveness of the educational workshop, and effectiveness of quality control/quality assurance systems. The past and current process evaluations can be updated in the early years of the fast track program to provide valuable feedback on how processes are functioning with the additional EEPS funding, and to identify further opportunities for improving efficiency and effectiveness. The primary market assessment issue for EmPower is the varying response rates of eligible customers to outreach conducted by the utilities or other referral agencies. NYSERDA proposes conducting a market assessment, as needed, in conjunction with process evaluation work to further explore issues such as awareness of the program, previous program participation, average tenure of potential participants at their current address, access to various sources of information, and willingness to participate.

Evaluation Plan Variations

Given the level of uncertainty regarding final evaluation protocols, statewide studies to be conducted by all program administrators, and funding levels needed to support other overarching areas of evaluation activities, the evaluation plans presented in this section should be viewed as scalable and flexible. Specifically, if the total evaluation budget for this program needed to be reduced, NYSERDA would first remove funds from the market and process evaluation work areas. These areas could be limited in terms of their sample sizes and evaluation frequency, if needed. Conversely, if more of NYSERDA's total evaluation funding for fast track programs could be allocated to EmPower, the additional funds would be allocated to expand and increase the rigor of impact evaluation work.