

NYSERDA BUSINESS PARTNERS PROGRAM

FINAL Evaluation, Measurement and Verification Plan

August 27, 2009

I. Introduction

The detailed evaluation plan presented in this document builds upon prior evaluation activities conducted for the Business Partners Program. In developing this evaluation plan, NYSERDA has incorporated feedback provided by the Department of Public Service (DPS) and the EEPS Evaluation Advisory Group (EAG), and has worked closely with its team of independent evaluation contractors to select the most appropriate evaluation approaches based on the current design of the program. This plan was developed to conform to the DPS evaluation guidelines released on August 7th, 2008 and to provide the highest level of rigor possible within the available resources.

As the Business Partners Program works to meet its current SBC program goals, NYSERDA and its evaluation contractors will closely monitor aspects of that process such as participation levels, achievement of near-term goals, and other programmatic issues in order to adapt this plan, as needed, to provide the most relevant and useful evaluation. For example, adjustments may be needed to sample sizes or research issues if assumptions about the program do not develop as initially anticipated. As such, NYSERDA views this plan as a flexible, living document that will be updated, as necessary, with appropriate notice to DPS and other interested parties.

This evaluation plan was designed to constitute a comprehensive approach to assessing the entire Business Partners Program supported by SBC funding.

II. Summary of Goals, Cost and Schedule for Evaluation Activities

The overarching goals of NYSERDA's **New York Energy \$martSM** program evaluation efforts are to conduct credible and transparent evaluations, and provide NYSERDA program staff and managers, the New York State Public Service Commission (PSC), Department of Public Service (DPS) staff, and other stakeholders with timely and unbiased information regarding program implementation.

Specifically, goals for the Business Partners Program evaluation are to:

- (1) Establish rigorous estimates of the savings and efficiency that can be attributed to the program (realization rates);
- (2) Construct solid and defensible estimates of all impacts that are program induced. For Business Partners net effects will be measured for participating customers and vendors (freeridership and spillover effects);
- (3) Develop a comprehensive understanding of current and emerging markets (*e.g.*, market structure and market actors);
- (4) Provide baseline and background information required by NYSERDA to define and deliver programs to target markets;

- (5) Track changes over time with a specific focus on market indicators that are likely to be impacted by the Business Partners Program components (Motors, Commercial Lighting, and Building Performance and HVAC);
- (6) Assess the barriers to entry and reasoning for partners relinquishing program activity for each of the Business Partners Program components as well as progress towards program implementation; and
- (7) Assess the non-energy and monetary values of services provided to partners and the overall customer satisfaction with the program services.

The Business Partners Program evaluation budget is comprised of approximately \$1.3 million in SBC funds, and represents approximately 8% of the total \$16.4 million in unspent program funds as of September 30, 2008.¹ The evaluation budget is detailed in Table 1.

Table 1. Business Partners Evaluation Schedule and Budget

Evaluation Element	Estimated Budget and Completion						% of Total Budget
	2009	2010	2011	2012	2013	Total	
Market Characterization & Assessment	\$65,000a	\$166,000b,c	--	--	--	\$231,000	17%
Impact Evaluation	\$302,000	\$91,000	\$226,000	\$346,000	--	\$965,000	73%
Process Evaluation	\$76,100	\$55,850	--	--	--	\$131,950	10%
Total	\$443,100	\$312,850	\$226,000	\$346,000	--	\$1,327,950	100%

a Develop separate program theory and logic model reports for each program component to document current program design and associated market characteristics.

b Primary data collection costs represent approximately 40% of the total proposed evaluation budgets.

c Final population and sample sizes will be determined through conversations with program staff and initial market characterization exercises. For budgeting purposes, it is assumed that the population size of each Target Group is large enough that 70 completed surveys will be required in each of the upstate and downstate regions (*i.e.*, 140 completed surveys per Target Group) to achieve 90/10 absolute confidence/precision criteria on an upstate-downstate regional basis.

III. Business Partners Program Description and Goals

The Business Partners Program is designed to promote the purchase and installation of energy - efficient products and services through working with trade allies. The Program is also aimed at promoting the availability of the most energy efficient products on the market. Part of the goal is to train allies on the

¹ This evaluation budget includes only external contractor costs. Other overarching evaluation costs, including NYSERDA's internal evaluation management and statewide study costs, are additional; however, the total evaluation costs will not exceed 5% of program funding at the portfolio level.

most efficient equipment (a strong market transformation effort tied to the program). **New York Energy \$martSM** business partners allies include building and systems contractors, distributors, vendors, designers and energy service providers. Through the program, business partners gain access to special training, tools, guidelines, and performance incentives. NYSERDA works with its business partners to help them differentiate their businesses in a highly competitive marketplace, while assuring appropriate quality. This is done by creating a brand identity that conveys the theme that mid-market businesses are vital to the growth of the energy efficiency industry as well as to the State's economy. The Business Partners Program is an integration of three prior programs: Motors Systems, Commercial Lighting, and Building Performance and HVAC. NYSERDA has added a Core Services contractor to provide program design, development, and implementation services. The three program components are described below:

Commercial Lighting: Formerly known as the Small Commercial Lighting Program, this effort involved the promotion of effective, energy-efficient lighting known as "The Right Light" - in commercial and industrial spaces up to 25,000 square feet by partnering with lighting practitioners. The program has provided training, field support, project incentives, and demonstration awards to participating lighting practitioner allies (contractors, distributors, manufacturer representatives, lighting designers, architects, and engineers). The program is implemented by ICF International.

Motors Systems: Formerly known as the Premium-Efficiency Motors Program, this effort worked with suppliers and providers of motors and motor repair services to promote sales of NEMA Premium® motors, quality motor repairs, and motor management services. Motor management activities included motor assessments, planning for future repair and replacement, and consideration of drives. The implementation contractor for this component is Applied Proactive Technologies. The Program has worked with vendors to present the case for a motor management program to their customers, to conduct motor assessments, and to facilitate implementation of motor management plans and policies whenever possible. An important aspect of the program is to conduct inventories and promote early replacement of motors.

Building Performance and HVAC: Prior activities under the commercial HVAC Program focused on training and supporting HVAC contractors, distributors and commercial building owners to increase the market share of energy-efficient unitary HVAC units and increase the demand for retro-commissioning services in existing commercial buildings. The Business Partners Building Performance and HVAC program supports green building operations and unitary HVAC advanced diagnostics training for trade unions including the International Union of Operating Engineers (IUOE) Local 94, and Service Employees International Union (SEIU) Local 32BJ, while separate market transformation efforts continue to support benchmarking best practices and retro-commissioning services to improve commercial office building performance. NYSERDA Program Staff are currently soliciting for an Implementation contractor.

Each of the program components activities will improve the awareness and familiarity with targeted technologies and services. By partnering with businesses, market infrastructure is strengthened leading to increased product and service availability and increased demand.

Table 2 displays program goals from the SBC III Operating Plan.² These goals apply to the five year funding period from July 1, 2006 to June 30, 2011.

² System Benefits Charge, Proposed Plan for **New York Energy \$martSM** Programs (2006-2011), As amended March 2, 2006.

Table 2. New York Energy \$martSM Business Partners Goals

Activity	Five-Year Goal (2006 – 2011)
Business Partners Participating	1,500
Demand Reductions (MW)	16
Energy Savings (GWh)	80

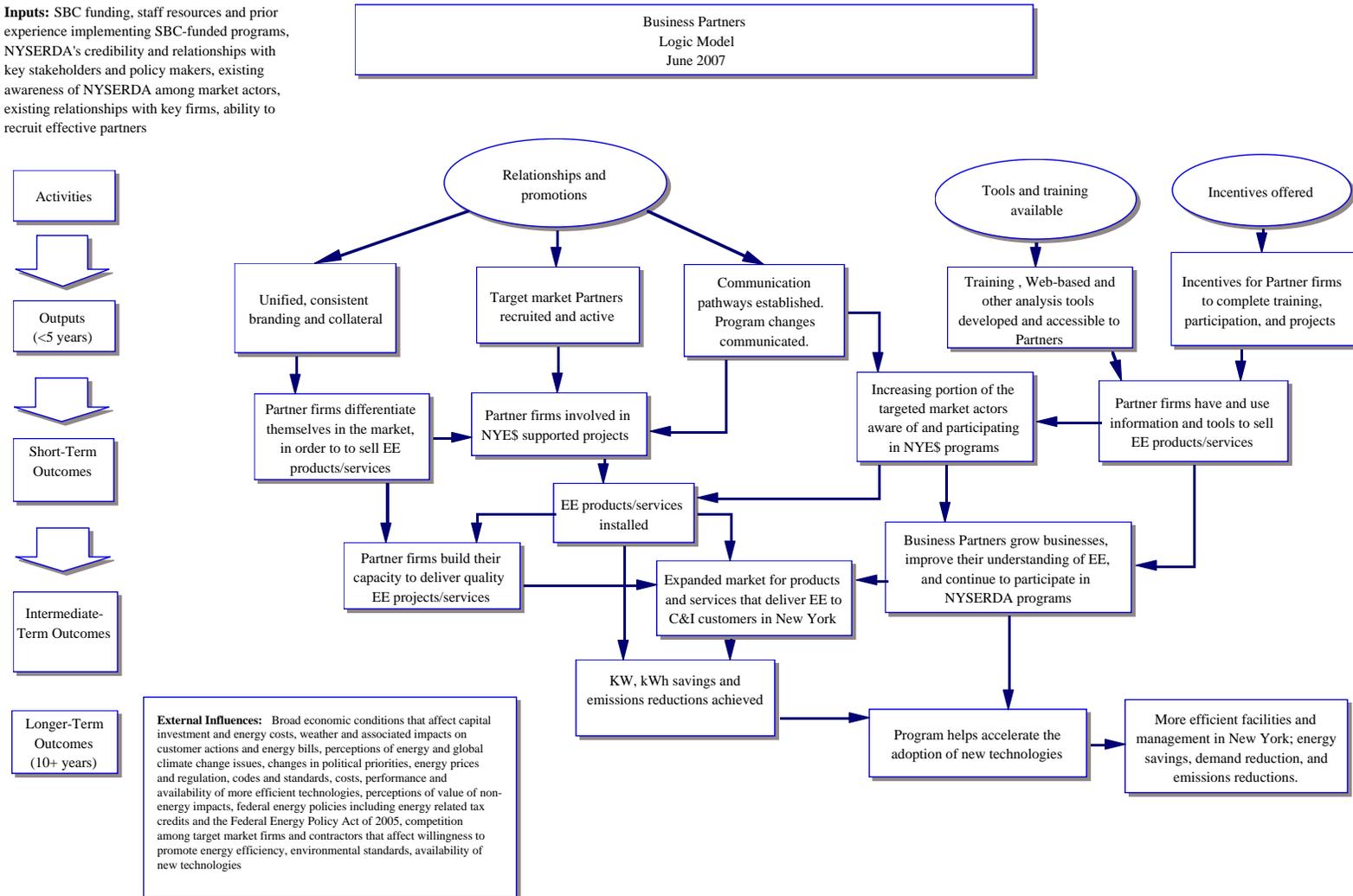
IV. Logic Model/Theory

Figure 1 presents the most recent logic model for this program. As program evaluation efforts begin, a first step in the process will be to for the Summit Blue Consulting team to review the logic model and make updates to the model as necessary (see discussion in Section 5). It may also be necessary to develop independent logic models for each of the components of the Business Partners Program.

Logic modeling activities will occur early in the evaluation process after completion and approval of the Detailed Evaluation Plan. NYSERDA’s evaluation contractors convene logic model “workshops” with program staff to discuss program inputs, activities, outputs, outcomes, external influences and other elements that need to be documented in the logic model. The evaluation contractors then document these discussions in a brief program theory/logic report, which includes a logic model diagram for the program. NYSERDA will invite DPS Staff to participate in logic model workshops and review draft program theory/logic reports.

Figure 1. Business Partners Logic Model

Inputs: SBC funding, staff resources and prior experience implementing SBC-funded programs, NYSERDA's credibility and relationships with key stakeholders and policy makers, existing awareness of NYSERDA among market actors, existing relationships with key firms, ability to recruit effective partners



V. Market Characterization & Assessment Plan

This section presents the Market Characterization and Assessment (MCA) evaluation plan for the Business Partners Program. The work will be conducted by the Summit Blue Consulting team.

Research Objectives

The primary goals of the MCA evaluation effort are: (1) to develop a comprehensive understanding of current and emerging markets (*e.g.*, market structure and market actors); (2) to provide baseline and background information required by NYSERDA to define and deliver programs to target markets; and (3) to track changes in markets over time with a specific focus on market indicators that are likely to be impacted by program offerings.

The proposed MCA evaluation plan was structured to accommodate these overarching research goals with a specific focus placed on the market and context within which the Business Partners Program operates. The plan was designed to validate program assumptions regarding market characteristics, provide additional details regarding market structure and opportunities, and ensure consistency with prior program evaluation activities conducted by NYSERDA. The continuity in approach will enable the MCA Team to build upon prior research findings and ensure that current and subsequent evaluation results can be used to assess progress towards meeting the PSC's public policy goals under which NYSERDA operates as well as the institutional goals NYSERDA has established to move markets towards improved energy efficiency. In addition, the evaluation results can be used by NYSERDA program staff and managers to adjust program implementation as needed to ensure maximum market interest and uptake of program offerings. The MCA Team will evaluate each program component (*i.e.*, Commercial Lighting, Motor Systems, and Building Performance/HVAC) separately and will coordinate efforts, specifically data collection efforts, with the Process Team.

Activities

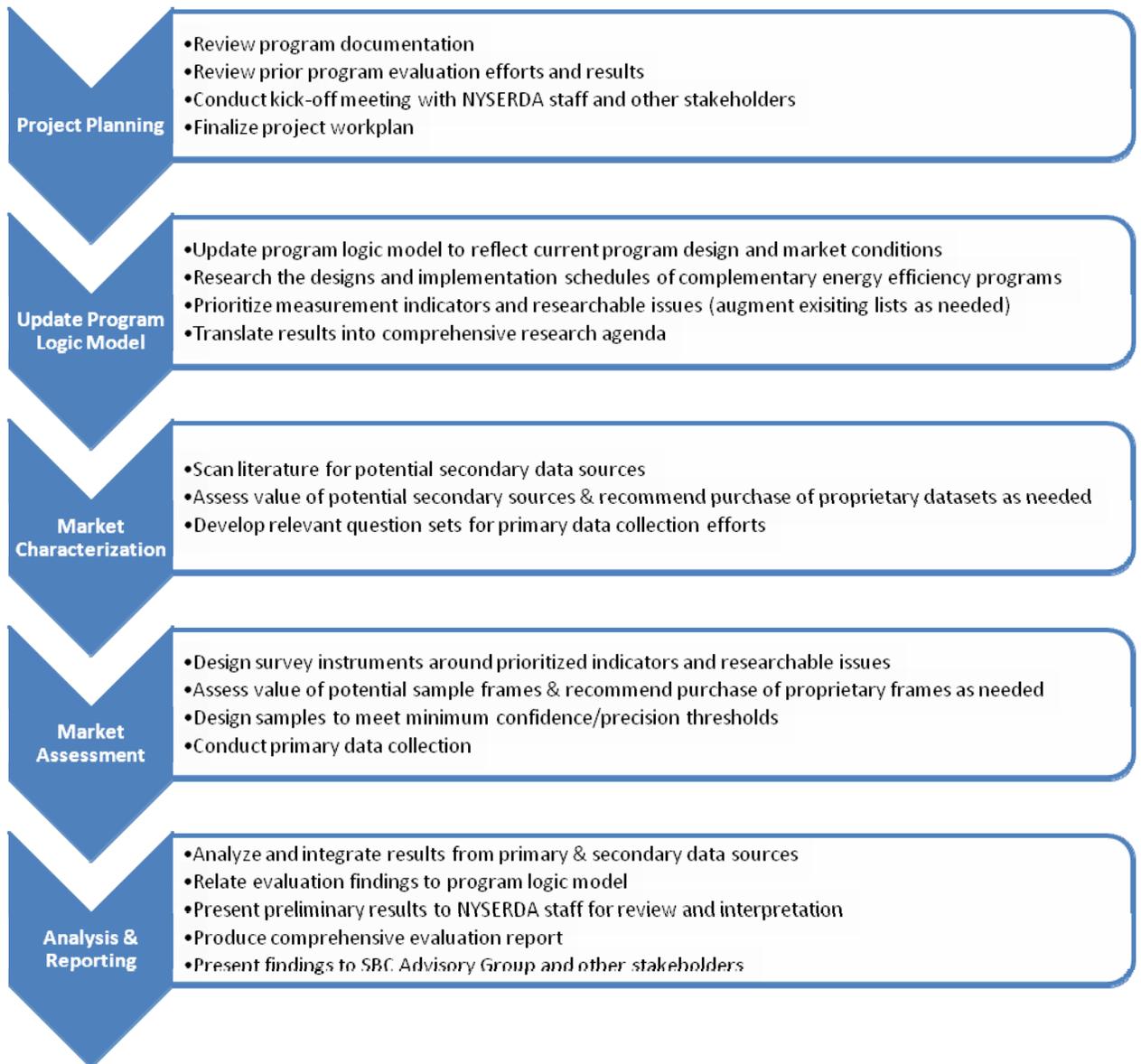
The proposed MCA evaluation plan for the Business Partners Program consists of multiple activities (blue arrows) and associated research tasks (bulleted lists), as shown in Figure 2. The approach will make use of a variety of primary and secondary data sources to generate information on a number of topics relevant to the Business Partners Program including: program accomplishments and market share in terms of participation rates within key market actor groups³; changes in trade ally awareness and understanding of measures and practices promoted by the program; and customer motivations and decision-making criteria related to energy-using systems. The approach is driven primarily by elements and theories presented in the Business Partners *Program Logic Model Report*⁴, and key research findings generated by the evaluation will be related to the outputs and outcomes anticipated by the program logic model. In addition, the approach is intended to encourage a high degree of interaction between the MCA Team and NYSERDA program and evaluation staff as well as DPS staff and other project stakeholders via project planning activities and deliverable review cycles. The MCA Team welcomes active engagement by these parties but is cognizant of the possibility that other demands may limit the parties'

³ The Business Partners Program works with multiple market actor groups involved in various aspects of the sale, promotion, and installation of energy efficiency measures including building and systems contractors, distributors, vendors, designers, energy service providers, and energy companies.

⁴ NYSERDA, *New York Energy \$martSM Program – Program Logic Model Report*, July, 2007. See Section III of this document for additional details regarding the Business Partners Program Logic Model.

contributions during certain points in the evaluation process. Each activity and the associated research tasks are discussed in more detail in the remainder of this section.

Figure 2. Synopsis of MCA evaluation activities and research tasks



Project Planning

This task encompasses a variety of project planning activities including review of available program documentation and prior program evaluation results, meetings and discussions with NYSERDA evaluation staff and other evaluation contractors, a project kick-off meeting with Business Partners Program staff and other project stakeholders, and the development of the final project work plan. An important component of this initial phase of the project is providing Business Partners Program staff an opportunity to discuss research items of interest to ensure development of a research agenda geared toward overcoming any existing gaps in staff’s knowledge of current market conditions and opportunities.

The collaboration with NYSERDA program and evaluation staff and other project stakeholders will continue throughout the evaluation as iterative processes are used to review and finalize interim and final project deliverables (*e.g.*, survey instruments, summary memos and reports, etc.).

Develop Program Logic Models

The Business Partners *Program Logic Model Report* was designed to help guide NYSERDA's program-specific evaluation activities. The current version of the *Program Logic Model Report* presents an overarching view of the Business Partners Program that does not capture differences in implementation strategies and anticipated market outcomes across the various program components.⁵ Thus, an initial activity will be to develop separate program theory and logic model reports for each of the three program components to document current program design and associated market characteristics.⁶ The reports will summarize the context within which the various program components operate, discuss the market barriers and inefficiencies the components seek to address, describe the implementation approaches and anticipated outputs and outcomes, develop logic model diagrams showing the linkages between program operation and anticipated outputs/outcomes, and identify relevant measurement indicators and researchable issues. The reports will also summarize the designs and implementation schedules of complementary energy efficiency programs fielded by utilities and third-party administrators to identify potential leveraging opportunities wherein NYSERDA and the other program administrators can collaborate to achieve broader and deeper program impacts.

Before proceeding, it should be noted that this initial phase of the evaluation will provide an opportunity for the MCA Team to generate feedback regarding proposed program design and implementation strategies. The Team will use the logic model review to suggest opportunities for program improvement, if any are observed, in the hopes of streamlining program delivery processes.

Market Characterization

Market characterization results will be generated primarily from secondary data sources, supplemented by information gathered during primary data collection efforts. Key data sources to be used for this activity include the Business Partners Program tracking databases, previous program evaluation reports prepared for NYSERDA and for similar programs operating in other jurisdictions, NYISO DR program tracking databases, McGraw-Hill Construction Dodge databases, U.S. DOE's Commercial Buildings Energy Consumption Survey (CBECS) data, U.S. Census County Business Patterns Reports, membership lists and other publicly-available data from relevant professional organizations, and other sources identified and deemed valuable during a scan of relevant literature. Where possible, market characterization results will be segmented on an upstate-downstate regional basis and program component⁷ to identify spatial variations in program and market opportunities and barriers throughout New York.

Example market characterization metrics to be developed pending data availability include:

⁵ NYSERDA staff note that the Business Partners Program has three separate program components: Commercial Lighting, Motor Systems, and Building Performance and HVAC.

⁶ Conversations with program staff revealed that it may be necessary to develop separate program theory and logic model reports for the Building Performance and HVAC program component. The MCA Team will make this decision after further review of program implementation strategies and additional discussion with program staff.

⁷ NYSERDA's three mid-stream market development programs - the Small Commercial Lighting, Motors, and Commercial HVAC Programs - were consolidated into the Business Partners Program.

- Firmographic information regarding trade allies participating in the Business Partners Program
- Prevailing business models and relative market capitalizations within targeted trade ally groups
- Program accomplishments and market share in terms of participation rates within targeted trade ally groups
- Customer business cycles and decision-making processes including financial and other non-energy considerations as well as O&M standard practices
- Nature and structure of relationships between customers and trade ally groups
- Information on other market transformation activities or forces in New York⁸
- Other metrics as identified

Market Assessment

Market Assessment results will be generated through primary data collection efforts with nonparticipating trade allies eligible to participate in the program and with end-use customers who have received services from trade allies participating in the program (See next subsection for specific details regarding the proposed data collection efforts).⁹ The data collection instruments will be structured around the prioritized measurement indicators and researchable issues presented in the updated program logic models.¹⁰ Care will be taken to ensure continuity of longitudinal indicator measurements where appropriate so that temporal trends in the measurements can be assessed. Market assessment results will be segmented on an upstate-downstate regional basis and program component to identify spatial variations in responses and associated market conditions.

Example indicators to be measured during the market assessment work include:

- Market awareness of NYSERDA program offerings and broader energy efficiency opportunities
- Market demand for specific energy-efficient products and services promoted by the program
- Growth rate differentials between participant and non-participant trade ally firms
- Trade ally expertise with energy efficiency measures and services including proper equipment selection and installation procedures as well as emerging technologies/designs

⁸ For example, the Northeast Energy Efficiency Partnership (NEEP) has several regional initiatives including a Commercial HVAC Initiative and a Commercial Lighting Initiative. The Commercial HVAC Initiative's long term goal is to "change the market for packaged HVAC equipment and services for commercial and industrial facilities to one in which efficient HVAC systems, quality installation and efficiency-oriented maintenance are standard practice in the Northeast." The Commercial Lighting Initiative's strategy is to "achieve cost-effective energy and demand savings by overcoming market barriers to the availability and widespread market adoption of advanced lighting technologies and quality, energy efficient commercial lighting design including daylighting strategies."

⁹ The MCA and Process Teams will work closely to coordinate data collection efforts. The Process Team will provide the MCA Team access to information obtained from participants and program staff to inform the MCA data collection efforts. This coordination will minimize burden to all respondents and improve integration of evaluation efforts. Note that the MCA Team will not conduct any primary data collection during the 2009 evaluation cycle.

¹⁰ Other evaluation contractors will be able to suggest additions to the instruments to collect data relevant to separate studies and the MCA Team will endeavor to accommodate such requests balancing the additional survey components against the need to minimize impacts on survey respondents.

- Differentials between trade ally groups (such as distributors, contractors, designers and others) with regard to program participation and market success¹¹
- Benefits of trade ally status to the market players¹²
- Other indicators as identified

Analysis and Reporting

Data analysis and reporting will be conducted by the MCA Team using methods approved by NYSERDA. As discussed above, the analytic process will make use of both primary and secondary data sources to generate comprehensive and unbiased information regarding the market eligible to participate in the Business Partners Program as well as the success of program intervention strategies. All data sources used in the analysis and reporting phase of the project will be clearly cited to ensure a transparent record of activities undertaken. In addition, evaluation findings will be related back to the outputs and outcomes anticipated by the program logic models to help NYSERDA staff and other project stakeholders better assess program accomplishments to date.

Before preparing the final evaluation report, the MCA Team will present preliminary results to NYSERDA evaluation staff, Business Partners Program staff, and other project stakeholders to review key findings, clarify discussion points as necessary, and ensure accurate interpretation of results. Feedback generated during this presentation will be incorporated into the initial draft final report submitted to NYSERDA. An iterative process will then be used to finalize the report whereby the MCA Team will address feedback received during the report review cycle(s) until the report is deemed final by NYSERDA staff and other project stakeholders. Final evaluation results will also be presented to DPS and other project stakeholders during scheduled meetings.

Populations/Samples

As discussed previously, the MCA evaluation of the Business Partners Program will involve primary data collection with nonparticipating trade allies eligible to participate in the program and with end-use customers who have received services from trade allies participating in the program.¹³ MCA data collection will occur during 2010.¹⁴ The MCA Team will work closely with NYSERDA's data collection contractor, APPRISE, to identify potential sample frames and to develop sampling procedures to

¹¹ NEEP found that educational efforts directly targeted at distributors have been less successful than those targeting manufacturers' representatives. Energy and Resource Solutions, "Market Research Report prepared for NEEP Commercial Lighting Initiative," sponsored by the Northeast Energy Efficiency Partnership, June 2006.

¹² For example, the Power Smart Alliance is a network of contractors and engineers registered with BC Hydro. Stated benefits of membership include referrals, an industry website, technical resources, rewards, training events and seminars, Power Smart business help desk, recognition, and the ability to leverage the Power Smart brand.

¹³ The MCA Team will explore opportunities to aggregate primary data collection efforts across programs into sector-wide or market-wide efforts. Doing so may help 1) avoid duplication of effort in interviewing sets of market actors common to many programs (*e.g.*, ESCOs) and 2) hedge against the risk of overlooking certain market sectors not explicitly targeted by specific program offerings. In addition, the MCA Team will remain aware of the activities of the EAG's subcommittee on statewide studies to again avoid potential duplication of effort but also to determine how best to supplement any statewide studies approved by the DPS. Results of these efforts will be discussed in the final project workplan.

¹⁴ Should this program be continued beyond 2011, a similar MCA evaluation may occur in 2012.

effectively represent the participant and non-participant populations.¹⁵ The final sample sizes for all market actor groups will be designed to meet 90/10 absolute confidence/precision criteria on an upstate-downstate regional basis.¹⁶

Current estimates regarding sample sizes, expected sampling precision, and anticipated survey fielding dates for the 2010 MCA evaluation are summarized in Table 3. These estimates will be finalized prior to undertaking the planned program evaluations, once the MCA Team more thoroughly analyzes program participation data, and will be documented in the final project workplan.

Table 3. Business Partners Program MCA 2010 Evaluation Specifics

Target Group	Estimated Population Size	Estimated Sample Size	Expected Sampling Precision ¹	Survey Administration By	Expected Start of Fielding
Non-participating Trade Allies – Lighting	TBD	140a	90/7	Survey Contractor	Spring 2010
Each Region (Upstate/Downstate)	TBD	70	90/10	Survey Contractor	Spring 2010
End-use Customers who Received Lighting Services	TBD	140a	90/7	Survey Contractor	Spring 2010
Each Region (Upstate/Downstate)	TBD	70	90/10	Survey Contractor	Spring 2010

¹ Assumes proportional sampling, two-tailed test, finite population correction
 a Should NYSERDA be directed that data collection efforts achieve 90%/10% confidence/precision levels on a utility territory basis, the sample sizes and associated data collection costs will increase accordingly. If this occurs, the results would benefit all EEPS program administrators and NYSERDA would propose that the data collection efforts be undertaken in a jointly-funded manner with all program administrators contributing.

Data Collection

Primary data collection with each market actor group will be managed by NYSERDA’s survey data collection contractor. The data collection process will be conducted by telephone¹⁷ and will consist of the following steps undertaken by NYSERDA’s survey contractor: 1) format the final survey instruments and program them into a CATI system, 2) pretest the final instruments with subsets of the market actor group samples and consult with the MCA Team as needed to resolve any issues that are identified¹⁸, 3) conduct full-scale data collection efforts and provide regular progress updates to the MCA Team during implementation, 4) process the raw survey data into final data files including coding of open-ended

¹⁵ The samples may be segmented by program component – Commercial Lighting, Motor Systems, and Building Performance and HVAC – or some other relevant variable (e.g., total incentives received through the program). This decision will be made after the MCA Team has reviewed program participation metrics.

¹⁶ Should NYSERDA be directed that data collection efforts achieve 90%/10% confidence/precision levels on a utility territory basis, the sample sizes and associated data collection costs will increase accordingly. If this occurs, the results would benefit all EEPS program administrators and NYSERDA would propose that the data collection efforts be undertaken in a jointly-funded manner with all program administrators contributing.

¹⁷ Surveys will be designed to be completed in approximately 15 – 20 minutes.

¹⁸ Pretest interviews will be included as completed interviews unless major revisions to the instruments are made.

responses and general data cleansing, and 5) deliver to the MCA Team final data files in SPSS and SAS formats including all variable names, variable labels, value labels, and weights relevant to each data collection effort along with the associated codebooks.

The MCA Team will coordinate with NYSERDA’s other evaluation contractors to the extent possible to fully leverage other planned data collection efforts. Doing so will achieve economies of scale in terms of minimizing data collection costs, ensure consistency of approach and question wording to facilitate comparison of results across evaluation efforts, and minimize the burden placed on different respondent groups. In addition, the MCA Team will work closely with the impact evaluation contractor team to ensure that final MCA results are considered during the attribution analyses conducted by that team (see discussion in Section 6). The Business Partners Program is designed to have a strong market transformational aspect, and the theory-driven results generated by the MCA evaluations will ensure the program is credited for structural and functional changes in the market that result from program interventions as well as changes that market actors contacted during attribution analyses may not be fully cognizant of.

The proposed MCA evaluation schedule and budget for the Business Partners Program are shown in Table 4. These initial budget estimates will be finalized prior to undertaking the planned evaluations and once the MCA team more thoroughly analyzes program participation data.

Table 4. Business Partners Program Evaluation Schedule and Budget

Evaluation Element	Estimated Budget and Completion					
	2009	2010	2011	2012	2013	Total
Market Characterization & Assessment	\$65,000 ^a	\$166,000 ^{b,c}	--	--	--	\$231,000
^a Develop separate program theory and logic model reports for each program component to document current program design and associated market characteristics. ^b Primary data collection costs represent approximately 40% of the total proposed evaluation budgets. ^c Final population and sample sizes will be determined through conversations with program staff and initial market characterization exercises. For budgeting purposes, it is assumed that the population size of each Target Group is large enough that 70 completed surveys will be required in each of the upstate and downstate regions (<i>i.e.</i> , 140 completed surveys per Target Group) to achieve 90/10 absolute confidence/precision criteria on an upstate-downstate regional basis.						

VI. Impact Evaluation Plan

The primary impact evaluation activity in 2009 will be focused on the premium motors component of the program for program years 2007 and 2008. Megdal & Associates, the Impact Assessment contractor, will be conducting this work. The 2008 Annual Report indicates that 22 vendors participated in the Premium Efficiency Motors component of the program, completing 97 inventories of customers including a total of 8,692 motors. In addition, NYSERDA provided incentives for over 11,000 motors installed through the previous Premium Efficiency Motors vendor incentive program. The next impact evaluation will be conducted in 2010 on projects completed in 2009 and will include projects completed under the Commercial Lighting Program component. The final impact evaluation will be conducted in 2012 evaluating all projects completed in program years 2009 through 2011 in the Building Performance and HVAC component.

Research Objectives

The purpose of impact evaluation is to establish rigorous and defensible estimates of the savings that can be attributed to the efficiency program. One part of this process is to determine the realization rate, *i.e.*, the ratio of the actual verified gross savings to the NYSERDA-reported gross savings (*ex ante* savings estimates). The net effects of the program (attribution) are also necessary to separate the program impacts from naturally occurring efficiency. In both of these aspects of the impact evaluation, the evaluators need to determine how to achieve the desired precision, minimize the possibility of bias in the result, and assess the validity of the results. Each of these key aspects of impact evaluation is discussed briefly below.

Determine Realization Rates for Gross Savings

A critical component of the impact evaluation is to develop rigorous estimates of the realization rates for gross energy and demand savings, which will entail verifying the installation and the estimation of savings for a representative sample of program participants for comparison to an established baseline. The gross savings realization rate is then applied to the program population or NYSERDA-reported gross savings to derive the final savings estimates (evaluation-based estimates, or *ex post* savings). Given that direct incentives to customers are not offered through Business Partners and participants are encouraged to enroll in other NYSERDA implementation programs, one component of the gross savings evaluation will be to assess the potential overlapping savings between Business Partners and Existing Facilities. This assessment will be achieved through a database comparison to determine the amount of savings counted in both program databases. The overlapping savings will be removed from reported savings.

Attribution

An equally important element of assessing impacts is to construct solid and defensible estimates of all impacts that are program-induced (rather than naturally occurring). This is often accomplished through estimation of the ratio of impacts for those that would have taken the actions without the program (free-riders) compared to program savings and the ratio of the savings from actions taken outside NYSERDA programs but due to the program (spillover). The combination of these net-to-gross (NTG) becomes the adjustment factor to derive net impacts.

For Business Partners, net effects will be measured for participating customers and vendors, in an approach termed 'enhanced self-report'. This assessment of net effects will cover participant spillover. Non-participant spillover could easily overlap with NYSERDA's other programs targeting the C/I sector (*e.g.*, Flex Technical Assistance, Existing Facilities), and these effects are planned to be measured through a study of the entire C/I market scheduled for 2009.

Precision and Bias

Sample sizes will be designed to target 90/10 precision at the program level. This program primarily targets mid-stream market players, and the location of the business does not necessarily directly relate to the area covered. Consequently, the Impact Evaluation Team decided that trying to separate program activity into the upstate/downstate regions for this program is likely to be unproductive. Historically, almost 95% of the participating vendors are located in the upstate region, although some activity may extend into the downstate region. However, further efforts to estimate savings and attribution separately by region do not seem to be warranted at this time.

Methods will be selected to minimize self-selection, non-response, and other sources of bias, to the extent possible. For both gross and net impacts, impacts will be estimated using multiple methods (triangulation) whenever feasible to establish construct validity and improve the reliability of the results.

Activities

Gross Savings Impact Evaluation

The Business Partners Program is designed to promote the purchase and installation of efficiency products through working with trade allies including building and systems contractors, distributors, vendors, designers and energy service providers. It includes three components, *i.e.*, HVAC, lighting and motors. In 2009, impact evaluation efforts will focus on the premium motors component as implemented during program years 2007 and 2008.

Following the model of NYSERDA's long-standing Premium-Efficiency Motors Program, this component educates motor vendors on the benefits of NEMA[®] Premium motors. Vendors are trained to develop motor inventories indicating candidate motors for early or normal replacement for specific customers. During 2007 and 2008, no incentives were offered to the vendors, although NYSERDA intends to reinstate the incentives in 2009. As part of program implementation, NYSERDA tracks the numbers of contractors and customers participating, and services rendered. Customers may choose to participate in other NYSERDA implementation programs to receive an incentive for installing efficient motors that meet the program guidelines or may proceed independently.

Given the implementation strategy of using vendors to promote efficiency through providing motor inventories to the end users, the researchable questions are largely tied to the use of the inventories.

- How are these inventories used by the customer?
- How many of the recommendations on the inventories are actually implemented?
- What is the energy savings impact of conducting motor inventories?

A sample of projects in the premium motors component of the program will be selected for analysis, including an M&V site visit. The level of documentation available from the program will affect the sampling and also the range of data that will need to be collected on the M&V site visits. For sampling purposes, a "project" will be defined as a motor inventory developed for a specific site.

After the sampling has been completed, the next step will be to review the program database and determine the available information for each project in the sample, followed by an in-depth review of all relevant NYSERDA program databases, including hand-checking if necessary, to attempt to ascertain whether any motors on the inventories were installed through other NYSERDA implementation programs. This assessment of the data will also include identifying the customer and all contact information required for the site visit.¹⁹

¹⁹ In Nexant's 2005 evaluation of the Premium Motor Program (which was later rolled into the Business Partners Program), Nexant noted that it was difficult to schedule M&V site visits, most likely due to the fact that the program is targeted to mid-stream players. Thus, the customer who installed the efficient motors is not directly connected to the program and does not have any particular incentive to cooperate in the M&V efforts. The Impact Evaluation Team will consider how to approach this issue in sampling and scheduling of the site visits. One possibility will be to offer a financial or other type of incentive to the customer for agreeing to participate in the M&V efforts.

The site visit provides the opportunity to investigate both gross savings and attribution of savings to NYSERDA's programs. The site-specific M&V activities will consist of the following:

- verifying the scope of the inventory
- identifying all motor replacements made as a result of the inventory
 - direct measurement of the hours of operation and the loading of the motor (the two most critical variables in the estimation of savings for this program) for the replaced motors
 - review of baseline and post-installation conditions for motors
 - assessment of whether incentives were received through a NYSERDA implementation program (from the customer's perspective)
- identifying other motor replacements or additions (not on the inventory) made since the inventory was provided
 - verify customer-reports of the hours of operation and the loading of the motor for the replaced motors and review of baseline and post-installation conditions for variable speed drives
 - assess the reasons for the replacement or new motor
 - determine whether incentives were received through a NYSERDA implementation program (from the customer's perspective)
- inquiring about standard practice in reference to motor purchases
- investigating NYSERDA's influence on the installation of efficient motors, whether through the Business Partners program, another NYSERDA program or outside of NYSERDA's programs

NYSERDA initially offered vendor incentives in an earlier version of the premium motor component of the Business Partners program. The incentive was discontinued, and NYSERDA is now planning to reinstate the incentive in 2009. To the extent that this change in implementation strategy was isolated, *i.e.*, there were no other major modifications made to program implementation concurrent with the change in incentive structure, it may be possible to compare program activity during the different periods to assess the impact of the incentives on the installation rates for premium efficiency motors. A potential evaluation activity for 2010 involves comparing the energy savings accrued from the former dealer incentive program to the later program that provided inventories of motors appropriate for replacement through an incentive program.

The Business Partners program is a market transformation initiative which generally require lower program funding and more detailed and complex evaluation plan to address the researchable questions than many resource acquisition programs. Also, each component (Motors, HVAC and Lighting) will require its own evaluation design. Consequently, the evaluation funding is a higher percentage of the total program funding (8%) than budgeted for some other programs.

Later activities expected to occur in the 2010 through 2012 will focus on the other two components: lighting, and building performance and HVAC. An impact evaluation of the lighting component of the program is scheduled for late 2010 to provide time for a sufficient number of projects to be completed under the revised program design, followed by the building performance and HVAC component starting

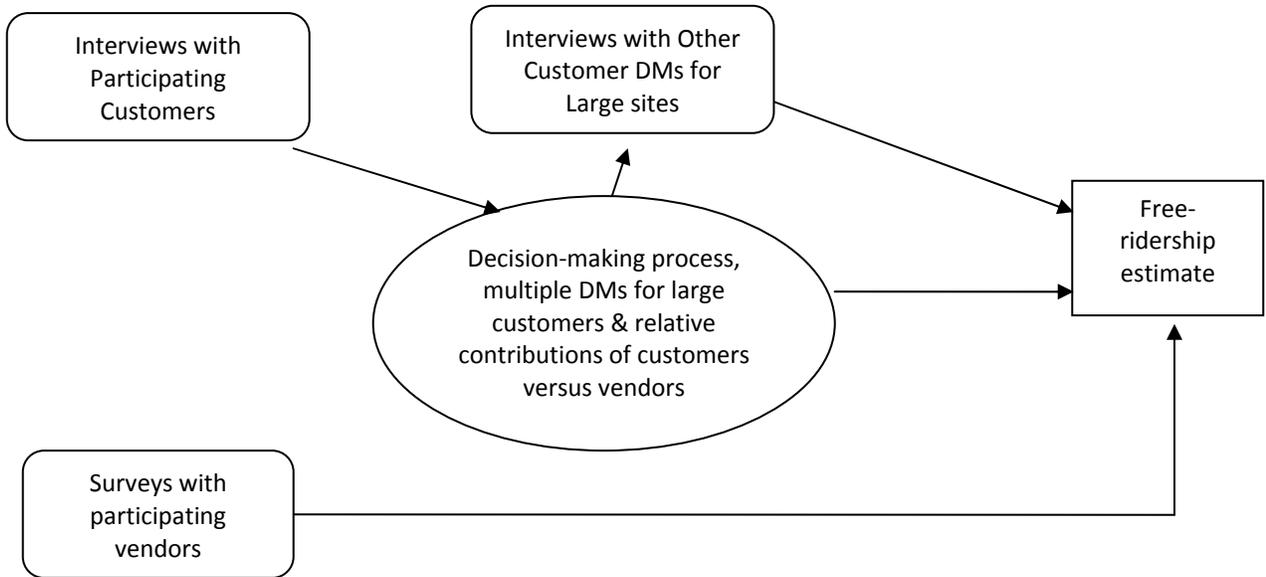
in late 2011. The basic outline provided above, *i.e.*, drawing a representative sample of program participants for further analysis and M&V site work, will be a likely approach for the other program components as well, although unlike in the motors program, the feasibility of billing analysis will be assessed as part of preparing the detailed work plans.

Attribution

As with the gross savings impact evaluation, the 2009 net savings evaluation efforts will be targeted to the premium motors component of the program. The 2005 causality study for the premium motors effort interviewed both participating vendors and participating end-use customers to determine free-ridership. The inquiries and the free-ridership algorithm, similar to the proposals in the Action Plans for most of the other current programs, inquired about and incorporated the influence of the motor vendor as a determinant for whether the motor vendor or customer alternative behavior would have occurred in the absence of the program.

A similar effort will be employed for the 2009 premium motors evaluation. The Impact Evaluation Team intends to explore participant free-ridership and spillover for the motors component of the Business Partners program with vendors and end-users who received motor inventories through an enhanced self-report survey process. The decision-making process will be investigated from both viewpoints to determine the most reliable way to combine free-ridership survey responses from across these two groups. Other decision-makers, such as chief financial officers or vendors, may also be interviewed for the largest projects, if they are found to be heavily influential in the decisions to invest in efficient motors. The components and process for determining free-ridership for the motor component of the Business Partners program is diagrammed in Figure 3.

Figure 3. Enhanced Self-Report Components and Process for Determining Free-Ridership Estimate for the Motor Component of the Business Partner’s Program



Survey design and solicitation will be designed to minimize self-selection to the extent possible. The discussion of sample sizes is included below in the section on population/samples. The reliability for free-ridership, however, relies more on construct validity than on sampling precision. The alternative of what would have occurred cannot be known with certainty. Survey inquiry can be difficult when asking about conjecture of a theoretical alternative. Prior survey experience for specific question wording, measuring free-ridership in more than one way, and obtaining market or other comparatives are several ways to increase the reliability of the attribution estimate. Measuring free-ridership in multiple ways can increase the construct validity of the estimate.

If the statewide baseline studies being proposed by NYSERDA as part of the overarching studies are undertaken, the baseline efficiency found in the market will be compared to the Business Partners participant sample and enhanced self-reports to derive an alternative, market-based estimate of net effects. The results from the primary and alternative methods will be combined to estimate a final, triangulated net-to-gross (NTG) ratio, which will provide a high level of construct validity for the NTG estimates. These draft NTGR results will be reviewed and discussed, along with the Impact Evaluation Team’s recommended triangulation method, with DPS staff and the NYSERDA evaluation project manager. Based upon comments received in this review, the Impact Evaluation Team will finalize the free-ridership and participant spillover estimates.

While spillover for other programs is conceptualized in terms of participant inside and outside spillover, the 2005 market characterization, assessment and causality (MCAC) evaluation indicates that the evaluators did not find this distinction useful for this program due to a program design that is based on intervention with mid-stream market actors rather than with the final end user. Rather, the previous MCAC evaluation team distinguished between savings for motor sales not directly counted by the program and savings for additional efficiency measures influenced by the program (VSDs). Given this

evaluation design approach, the study design for both participant and non-participant spillover may be more of a market study.

The influence of NYSERDA's Business Partners Program on the commercial, industrial and institutional sectors can easily overlap with the influence of the NYSERDA's other commercial and industrial programs. Recognizing this, NYSERDA conducted a commercial and industrial (C/I) non-participant spillover study applicable across C/I programs in 2005. NYSERDA plans to conduct a similar but expanded study in 2009 to derive updated non-participant spillover rates for all its C/I programs. Initial plans are to include the Business Partners Program within the scope of this overall C/I non-participant spillover study. However, this decision will be examined more thoroughly during the detailed evaluation planning process. The motor component of the Business Partners Program could influence spillover in several other markets. Yet, its more direct spillover on the motors market may be best captured through either the method used in the prior 2005 study or a study designed as a market effects evaluation within the motors market. The Impact Evaluation Team will consider these issues in its detailed design of the attribution evaluation.

Populations/Samples

Sampling is necessary to estimate both gross and net impacts, as discussed in more detail below.

Gross Impact Sampling

For the on-site survey, efficient sample sizes will be chosen using stratified ratio estimation (SRE) to meet a 90/10 confidence/precision level for the statewide program. Critical metrics to be estimated will include the installation rate of premium efficiency motors among those identified on the motor inventory and the realization rate between the savings as estimated in the inventory and the actual savings from the site visit. The sample size is estimated to be 46 inventories to achieve a 90/10 confidence/precision level, assuming an error ratio of 0.60.²⁰

Projects will be stratified by size (the number of motors on the inventory or the magnitude of the electricity savings) and possibly by type of measure (*e.g.*, efficient motors v VSDs), or other variables, as indicated. If budget permits, the sample may be expanded to meet 90/10 at the utility territory level. A census of large energy-saving sites and a sample of remaining sites in each stratum will be selected for verification site visits. The smallest savers may be eliminated as site visit candidates.

Attribution Sampling

The evaluation of net impacts is focused on participating customers and vendors. The Impact Evaluation Team will assess the sample to ensure that an adequate sample of the more commonly-used and larger vendors is included in the overall sample. There are currently about 85 active motor vendors participating in this program. Participating customers will be interviewed as part of the gross savings evaluation.

In addition, the Impact Evaluation Team will review the possibility of surveying formerly participating vendors and distributors as a potential source of non-participant spillover. This component could either be incorporated into the Business Partners evaluation or into the cross-program C/I evaluation of non-participation spillover, as appropriate. If it is implemented as part of the Business Partners evaluation, the

²⁰ The 2005 Nexant evaluation of the Premium Efficiency Motors program involved drawing a sample of nine motors (five large ones and four small ones). From the data provided in the report, it appears that the error ratio was approximately 0.64.

Impact Evaluation Team will consider how to assess potential overlap among the Business Partners and the Existing Facilities programs.

Data Collection

NYSERDA's impact evaluators will collect program tracking data from the implementation team, conduct independent surveys, and install instrumentation to collect independent data. The team also plans to make extensive use of additional channels and resources not routinely used in prior NYSERDA evaluations, such as utility-provided bill data. This section details the impact evaluation data collection plans.

Approach

Engineers will perform field instrumentation to determine the gross savings realization rate, defining the instrumentation requirements in M&V plans in accordance with IPMVP terminology. They will estimate and consider engineering uncertainty and the cost associated with increasing or decreasing it for each plan. The approaches to be used are as follows:

- Spot and short-term metering of selected parameters (IPMVP Option A)
- Prior savings claims methodology and data review (Engineering review)

Participant interviews will supplement observed data. The data collection approach will be modified as necessary if a statewide protocol is established, as is anticipated in the *Evaluation Plan Guidance for Program Administrators*.

Resources

Evaluators will collect much of the data directly through measurement and interviews and review of program tracking data. To meet the level of rigor described in the *Evaluation Plan Guidance*, evaluators also will need utilities to provide billing data for participants and potentially a sample of non-participants. Evaluators also will request any tools developed by the vendors for estimating savings.

To be able to conduct the sampling and proceed with the evaluation, the Impact Evaluation Team will need the following information at a minimum, in addition to primary data collected:

- Project level information, including address, contact information for the site owner, the mid-stream vendor, type of business.
- Measure level information, such as a description of the measure, quantity recommended, the energy savings (electric), demand savings, measure life, and incremental costs.

Table 5 displays the survey, target group, sample size and schedule for fielding for the Business Partners Impact Evaluation for 2009.

Table 5. Business Partners Impact Evaluation Survey Specifics

Target Group	Estimated Population Size	Estimated Sample Size	Expected Sampling Precision	Survey Administration By	Expected Start of Fielding
Participating Customers On Site- Motor Inventories	97	46	90/10	Impact Evaluation Team	Winter 2010
Participating Customers' Decision-Makers (Telephone Survey)	97	46a	90/10	Survey Contractor	Winter 2010
Participating Vendors – Motors (Telephone Survey)	85	46 census attempt of vendors associated with the on- site surveys	NA (census)	Survey Contractor	Winter 2010
Formerly-Participating Vendors (Telephone Survey)	Unknown	~30 census, if possible	NA (census)	Survey Contractor	Winter 2010
A Multiple decision-makers may be surveyed for the largest customers. If the customer decision-makers are the same as those for the on-sites, then interviews may be conducted in-person by the Impact Evaluation Team.					

VII. Process Evaluation Plan

The three components of the Business Partners Program are each associated with a specific market channel – Motors, Lighting and HVAC/Building Performance. Each of the components has outreach, training and incentives that are implemented in manners unique to the three market channels. The process evaluation, conducted by Research Into Action, will examine each market channel approach using similar methods in order to provide comparable results for the three efforts. The activities will include interviews with NYSERDA and program implementation contractor staff in summer 2009. This will be followed by interviews or surveys of vendors and participating partners as well as drop-out vendors and partners. In 2009, the process evaluation will focus on the Lighting and Motors components and in 2010 on the HVAC/Building Performance component. Should the program continue, additional process evaluations will be conducted in 2012 and 2013.

Research Objectives

The objectives for the process evaluation are listed below. In order for the process evaluation to provide the greatest value, other relevant or necessary objectives may be added, or the objectives listed below may change somewhat, as the timing of this research draws nearer.

1. Assess barriers to participation in the Business Partners components, including:
 - a. Understanding reasons for nonparticipation
 - b. Understanding reasons for dropouts and inactivity
2. Assess progress toward full-scale program implementation in the areas of:
 - a. NYSERDA and implementation contractor activities

- b. Market awareness, use and perception of training opportunities
 - c. Partners' awareness and engagement with NYSERDA programs and other EEPS programs
 - d. Partners' perception of ability to grow their businesses with energy efficiency products and services
3. Assess the value of services provided to Partners (e.g., non-energy and monetary):
- a. Partners' view of the quality and value of Business Partner training services and incentive offerings
 - b. Ability of Partners' firms to differentiate themselves in the market as a result of program services
 - c. Assess Partners' interest in incentives for motors that are one to two bands higher than NEMA.
 - d. Partners' assessment of the effectiveness of the Program's end user outreach activities
4. Overall value to customers of the services provided by the partners, including:
- a. Customer awareness and knowledge of energy efficiency options
 - b. Examination of customer decision making, including roles of individuals involved and factors influencing the decision
 - c. Customer satisfaction with the information and services provided by partners

Activities

The process evaluation team will begin working with NYSERDA and the Business Partners Program implementation contractors in spring 2009 to develop lists of participating and nonparticipating vendors and business partners. The team will conduct interviews with NYSERDA and program implementation contractor staff to understand their program processes and marketing and outreach efforts to vendors and partners; the interviews will begin in July 2009. Once the interviews are completed and lists compiled, the process team will develop interview guides and survey instruments for each of the Program components. Activities for each of the components are as follows:

Lighting – The Process Evaluation Team will conduct interviews with active and inactive program allies in September 2009.

Motors- The Process Evaluation Team will conduct interviews with active and inactive motor vendors in October 2009.

HVAC/Building Performance – The Process Evaluation Team will conduct interviews with active and inactive qualified HVAC contractors and building performance providers in Fall 2010 and will develop questions for inclusion in the MCA surveys being implemented by the Survey Team in fall and winter 2010 with nonparticipating HVAC contractors and with end-users that received HVAC services from qualified HVAC contractors.

Core Program Services – The Process Evaluation Team will also conduct interviews with the team involved in Core Program Services to the Business Partner Components. These interviews will be conducted in July 2009 and again in July 2010.

Analysis and reporting on the results of the data collection for Lighting and Motors will be completed by March 2010 and for HVAC/Building Performance by March 2011.

Populations/Samples

Table 6 displays the sample sizes anticipated for each survey or interview group, the evaluation contractor team that will implement the data collection and the anticipated date of fielding for the data collection task. The populations for the each of the partner groups are identified on the NYSERDA website. NYSERDA staff and the implementation contractor will identify the partners that are inactive. Lists of customers who have received services from the partners will be requested during the interviews with active partners. The implementation contractor for each program component will also be asked to assist in this request. Given the proprietary nature of ‘customer lists’ the evaluation may not be able to fully achieve this aspect of the plan.

Data Collection

Interviews with NYSERDA and contractor staff will be conducted by phone. Interviews will last at least one hour. Surveys with partners will be conducted by a combined email and phone approach. In either case the instrument will be targeted to be equivalent to a 15 minute phone survey. Some partners are likely to prefer email and others phone; the Process Evaluation Team will work with NYSERDA and the implementation contractors to identify those partner groups that prefer phone (likely HVAC contractors and possibly others) and those that prefer email (likely architects and designers and possibly others) contact. Targeting the approach to the group preference will enhance response rates and help mitigate non-response bias. Phone surveys will be conducted with all nonparticipants and with end-use customers and will be designed to last about 10 minutes. The data collection period is scheduled to avoid the holiday season.

Table 6. Business Partners Process Evaluation Survey Specifics

Target Group	Estimated Population Size	Estimated Sample Size	Expected Sampling Precision	Administration By	Expected Start of Fielding
NYSERDA and Contractor Staff (Core, Lighting & Motors)	6	6	NA	Process Team	July 2009
Lighting Active and Inactive Partners	820	68	90/10a	Process Team	Sept 2009
Motors Active and Inactive Vendors	80	34	90/10b	Process Team	Oct 2009
NYSERDA and Contractor Staff (Core & HVAC/Building Performance)	4	4	NA	Process Team	July 2010
HVAC Active and Inactive Partners	38	24	90/10b	Process Team	Sept 2010

a Assumes proportional sampling, 2-tailed test, absolute precision

b Assumes proportional sampling, 2-tailed test, finite population correction absolute precision.

The Process and MCA teams will work closely together to develop a coordinated survey effort for the HVAC/Building Performance program to obtain data from nonparticipating trade allies and with end users that have received services. The Process Evaluation Team will also provide the MCA team access to information obtained from participants and program staff. These efforts will minimize burden on all respondents and will improve integration and cost-efficiency of the evaluation efforts.

Depending on the nature of approved programs, other EEPS program administrators may be conducting activities with these business partners during the same time period. However, NYSERDA’s evaluation team will alert the other EEPS program administrators of the data collection efforts and will make every effort to clearly define the programs being examined through the NYSERDA evaluation surveys.

Schedule and Budget

Table 7 displays the schedule and budget allocation by year and process evaluation element.

Table 7. Business Partners Process Evaluation Schedule and Budget

Evaluation Element	Estimated Budget and Completion					
	2009	2010	2011	2012 ^a	2013	Total
Process Evaluation	\$76,100	\$55,850	--	--	--	\$131,950

^a Process evaluation may include outlays of \$80,000 in 2012 and \$60,000 in 2013 if the program is continued. These dollars will come from program funds available in those program years.

The process evaluation costs include data collection costs of \$11,000 for interviews in 2009 and \$20,000 for interviews in 2010.

VIII. NYSERDA Evaluation Process

This evaluation plan is an early, but important step in NYSERDA's evaluation planning and implementation process. It is NYSERDA's understanding that DPS Staff wish to be involved as a reviewer/participant in the following parts of the evaluation process: detailed evaluation plans, project kick-off meetings, workplans (including sampling, statistics and modeling issues), data collection instruments, interim results reports (as applicable), presentation of evaluation results, and draft evaluation reports. NYSERDA will conduct evaluation planning and implementation in an open and transparent manner, and will invite DPS Staff participation in the designated aspects of the process and any others upon DPS' request.²¹ Should DPS Staff choose to modify the level or manner of their involvement, NYSERDA should be notified about the change(s). DPS Staff should also choose when and how to involve their evaluation advisor consultant team in NYSERDA's evaluation processes, should directly provide any materials and information necessary for their advisor consultant team to fulfill this role, and should notify NYSERDA about the type and level of advisor consultant involvement.

An important goal of NYSERDA's evaluation effort is to provide early feedback to program staff to help inform and improve program implementation. NYSERDA accomplishes this goal in several ways:

1. Ongoing communications between the NYSERDA evaluation staff and evaluation contractors to identify issues that need to be brought to the attention of NYSERDA program staff, DPS Staff, and other involved parties.
2. Interim results reports may be generated, sometimes at the request of NYSERDA program staff and sometimes by initiative of NYSERDA's evaluation team and contractors, where early results are required or deemed useful prior to completion of the full evaluation effort.
3. Presentations of draft evaluation results held with NYSERDA evaluation contractors, evaluation team, program staff, and DPS Staff before evaluation reports are written provide feedback on the programs as soon as possible, and provide evaluation contractors with additional perspective and context that will be useful in reporting final recommendations.

Upon completion of final evaluation reports, the NYSERDA evaluation team will also provide support and assistance to program staff with regard to implementation of recommendations and program improvements.

IX. Reporting

Final reports will align with requirements set forth in the DPS evaluation guidelines, and will include: methodology, key results, recommendations, summary and conclusions, and appendices with detailed documentation.

²¹ In order to maintain transparency, and allow for confirmation checking and follow-up analysis, evaluation data will be maintained by NYSERDA and made available to DPS on an as-needed basis. NYSERDA will continue to maintain its secure "data warehouse" which includes data files, code books, and analysis files which can be made available in electronic form to DPS upon request. In order to provide a comprehensive record of each study conducted, the data warehouse also holds copies of final evaluation reports and appendices, including blank survey instruments, although these documents will be made available to DPS and publicly upon completion of each evaluation project.

Upon completion of each evaluation study effort, findings and results will be communicated by NYSERDA's evaluation contractors and evaluation staff. Actionable recommendations and information on program progress toward goals will be provided as input to the program design and improvement process. NYSERDA's evaluation staff will follow up regularly with program staff on recommendations arising from the evaluation and the status of their consideration or adoption of these recommendations.

NYSERDA's evaluation staff will prepare quarterly and annual reports to the Public Service Commission, DPS and the EAG summarizing the results on all programs and from all evaluation studies occurring in the most recent quarter or year. The latest evaluated program savings, realization rates, and net-to-gross ratios will be used in compiling data for these overarching reports. Quarterly reports will be provided to the Commission within 60 days of the end of each calendar quarter. The annual reports 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 the end of the calendar year.

X. Total Resource Cost Analysis

Once per year, NYSERDA will update benefit/cost ratios (at a minimum, Total Resource Cost test) for each major program and for the entire portfolio of SBC-funded **New York Energy \$martSM** and EEPS programs. The Total Resource Cost (TRC) test divides the present value of the benefits by the present value of Program and Participant Costs. A benefit-cost ratio greater than 1 indicates benefits exceed NYSERDA and participant costs. The Program Administrator Cost (PAC) test divides the present value of the benefits by the present value of the Program Administrator Costs. A benefit-cost ratio greater than 1 indicates benefits exceed NYSERDA costs. For more detailed definition of benefit/cost terms and a description of NYSERDA's current benefit/cost input sources, including avoided energy, capacity and distribution costs, refer to Appendix A of NYSERDA's September 22, 2008 Energy Efficiency Portfolio Standard Program Administrator Proposal. The latest evaluated program savings, realization rates, and net-to-gross ratios resulting from the evaluation efforts described in this plan will be used in the annual benefit/cost analysis update. If available, NYSERDA will also present benefit/cost scenarios that include non-energy impacts.

NYSERDA will conduct benefit/cost analysis for its programs in a manner consistent with other program administrators, as appropriate. NYSERDA 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.