Existing Facilities Program

Program Logic Model Report

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Introduction

The **New York Energy $mart[SM]** programs are funded by an electric distribution System Benefits Charge (SBC) paid by customers of Central Hudson Gas and Electric Corporation, Consolidated Edison Company of New York, Inc. (ConEdison), New York State Electric and Gas Corporation, National Grid, Orange and Rockland Utilities, and Rochester Gas and Electric Corporation. The programs are available to all electricity distribution customers that pay into the SBC. The New York State Energy Research and Development Authority (NYSERDA), a public benefit corporation established in 1975, began administering the SBC funds in 1998 through NYSERDA's **New York Energy $mart[SM]** Program.

During 2008, several changes arising from the New York State Public Service Commission's (PSC's) Energy Efficiency Portfolio Standard (EEPS) proceeding have affected NYSERDA's **New York Energy $mart[SM]** program portfolio and evaluation efforts. The PSC's June 23, 2008, EEPS Order called for an increase in System Benefits Charge collections and a ramp-up of program efforts by NYSERDA and the state's six investor-owned electricity transmission and distribution utilities to meet New York State's "15-by-15" electricity reduction goal. The current Existing Facilities Program is operated under EEPS guidelines.

The purpose of this document is to present the overarching logic model for the Existing Facilities Program (EFP). EFP offers incentives for equipment providing a variety of electric and natural gas energy solutions, including prescriptive approaches, performance-based projects, energy storage, demand response, and monitoring-based commissioning.

This document comprises eight sections, as follows:

1. **Program Context, Stakeholders, Intent and Design:** Describes the problem(s) the program is attempting to solve, or issues it will address and the regulatory and stakeholder environments (context) within which the program is working.

2. **Program Objectives**: Describes, at a high level, the program's ultimate purpose and targets.

3. **Program Resources**: Identifies the funding, workforce, partnership, and other resources the program is providing.

4. **Program Activities**: Describes the program's various infrastructure development, outreach, training, and reporting activities.

5. **Program Outputs**: Describes the anticipated immediate results associated with program activities.

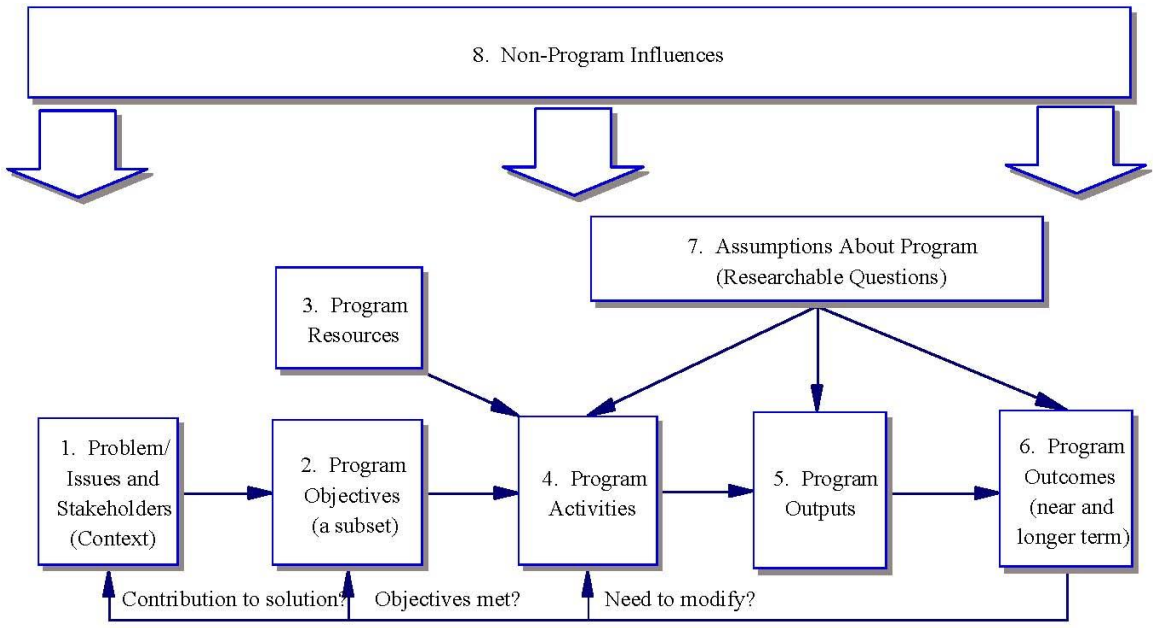
6. **Program Outcomes**: Describes expected achievements in the near-, intermediate- and longer-term.

7. **Assumptions about Program**: Describes assumptions about how program activities and outputs will lead to the desired near-, intermediate- and longer-term outcomes.

8. **External Influences**: Describes factors outside the program that may drive or constrain the achievement of outcomes.

Figure I-1 details the relationship between these eight items.

Figure I-1: Program Design Template



1 Program Context, Stakeholders, Intent, and Design

1.1 Context

NYSERDA's Existing Facilities Program (EFP) addresses New York State-specific building needs and the barriers to full market adoption of improved building technologies and practices that provide the user with the same – if not superior – performance while using use less energy and reducing peak energy demand. It encourages building stakeholders to accelerate the market adoption of underused high-performance technologies and practices and ultimately lower the cost of and increases clean energy options for consumers. EFP supports the following clean energy options:

- High efficiency equipment
- Energy storage
- Demand response (DR)[1]
- Monitoring-based commissioning (MBCx)

NYSERDA makes funding available to EFP applicants through its Program Opportunity Notice (PON) 1219 *Existing Facilities Program*.

Increased energy efficiency and demand reductions contribute to improvements of New York State's energy system reliability and security, while helping businesses and industries reduce their operating costs. NYSERDA's provision of multiple incentive strategies to customers, their agents, and energy service companies (ESCOs) to support their clean energy projects fosters growth of the market for energy efficiency, energy storage, DR, and MBCx in existing buildings.

Most building equipment (such as heating, cooling, ventilation, and distribution systems) currently in use consumes more energy than would be the case if this equipment were replaced with standard new models; these standard new models, in turn, consume more energy than that consumed by the most efficient commercially available technology. EFP encourages customers in the market for new equipment to install highly efficient models, and encourages customers with date equipment to engage in early replacement – that is, to replace equipment prior to failure when the value of the energy savings provide a good return on the investment in upgrade costs.

In addition to promoting energy-efficient models to replace failed or inefficient equipment, the program also promotes clean energy strategies that have low current market share: energy storage equipment and enabling equipment for demand response and for ongoing, monitoring-based commissioning. The MBCx

[1] Demand response is one strategy for reducing peak loads; also called demand management.

incentives offset a portion of the costs of qualifying energy efficiency projects that deliver verifiable annual energy savings resulting from the installation of information gathering technologies that provide critical data to monitor and alter building operation. EFP seeks to promote clear communication of energy usage to the facility occupants, thereby facilitating a coordinated means to reduce consumption and lower costs.

The State's utility ratepayers benefit from increased market adoption of cost-effective, high-efficiency equipment, yet a number of conditions limit the adoption of such equipment below socially desirable levels, including:

- Higher first costs for efficient equipment,
- Limits to customers' decision capacity to select the best new equipment (such as due to staff expertise, staffing constraints, or occasioned by precipitous essential equipment failure),
- Contractors' sales approach of "good, better, best," and reluctance to promote "best" and risk losing the sale, and
- Lack of familiarity with less common technologies and strategies, such as energy storage, DR, and MBCx, leading both contractors and customers to underestimate the benefits and overestimate the risks.

These market conditions limit the adoption of technologies that support the efficient operation of facilities as well as limit the ability of facilities to reduce electricity consumption during high-demand periods, a reduction that would benefit the electricity grid. Technologies that support DR and other customer grid interactions are nascent. Because of the newness of both the technology and the use, it is still difficult to acquire and operate end use appliances with built-in capability to support building monitoring and control. Standardization of protocols that support building-to-network operation centers is also lacking.

Yet energy efficiency and peak load reduction are important for New York State (NYS) and its ratepayers. For example, during peak demand summer hours, electric reliability is strained, costs are high, and generation needs often are met through increased use of older plants that have greater emissions than newer plants. Within New York City, the Hudson Valley and other downstate areas, the issues are particularly acute, leading some observers to recommend costly and difficult-to-site transmission and distribution infrastructure improvements as the best way to meet high demand.[2]

Increasing market penetration of underused technologies that reduce facility energy intensity and peak energy use – the objective of EFP – can help mitigate these conditions and provide significant benefit to

[2] *Operating Plan for Technology and Market Development Programs (2012 – 2016)*, Revised February 15, 2013, NYSERDA, page 9-33.

participating ratepayers and New York State as a whole through improved system load profile, wholesale price moderation, deferral of delivery service cost and improved environmental quality. Increasing load flexibility within buildings, allowing for greater load management by customers, and increased participation in New York State Independent System Operator (NYSIO) and utility DR programs will improve system reliability and mitigate pressures for costly transmission and distribution upgrades.

1.2 Design

EFP provides incentives and technical support to existing nonresidential facilities pursuing energy efficiency, energy storage, DR, and MBCx. EFP targets customers[3] in all nonresidential sectors, including commercial and industrial businesses, state and local government and municipal buildings, healthcare facilities, universities and colleges, schools, and hospitality/hotels. Although the program name explicitly describes the existing facilities market, EFP also provides incentives to nonresidential customers installing pre-qualified lighting measures in their new facilities.

By offering energy efficiency and DR incentives to existing nonresidential facilities, the EFP occupies a central role in NYSERDA's nonresidential portfolio. The following programs complete the portfolio. NYSERDA's Industrial and Process Efficiency Program serves industrial customers, including data centers, seeking assistance for industrial process efficiency; its Multifamily Performance Program serves multifamily establishments of five units or more; its Agricultural Energy Efficiency program serves farm and on-farm producers; and its New Construction Program serves nonresidential customers seeking assistance for new construction or gut renovations. NYSERDA rounds out these offerings with programs assisting nonresidential customers with renewable energy technologies and combined heat and power applications. Wrapping around these programs, NYSERDA's FlexTech Program provides support to nonresidential customers seeking to better understand their efficiency and clean energy opportunities.

1.2.1 Overview of Program Approach

EFP accepts applications from facility owners and non-owners, including management companies, tenants with the authority to make improvements, and energy service companies (ESCOs). It requires the applicant to be the entity receiving the approved incentive amount upon project completion and to be the entity responsible for delivering the energy savings.

EFP staff and outreach contractors (OCs) are available to consult with customers and applicants about eligibility, to assist them with the application process, and to schedule site visits. The *Existing Facilities Program Brochure* provides an email address applicants can use to easily request assistance form EFP staff. EFP staff and its OCs help customers identify and prioritize projects to maximize energy savings.

[3] Customers of New York State's electric and gas utilities that pay into SBC.

EFP has various restrictions to ensure that projects acquire appropriate energy efficiency and DR resources and use ratepayer funds judiciously. For example, total incentives cannot exceed 50% of project costs, with the exception of DR projects (stand-alone or bundled with efficiency projects), whose incentives cannot exceed 75% of project costs. (Project costs may include equipment, labor, and engineering expenses.) Projects must have a simple payback of at least one year for commercial and institutional, yet less than 18 years; project savings must persist for at least five years. DR projects must demonstrate participation in an approved DR program. Equipment must meet any existing ENERGY STAR® minimum efficiency requirements. A given efficiency measure installation may receive either a pre-qualified or a performance-based incentive, but not both, and either a NYSERDA or a utility company incentive, but not both. Fuel-switching projects are ineligible, as are power quality and power factor improvement projects.

EFP offers two types of incentives: pre-qualified and performance-based.

1.2.2 Pre-qualified Incentives

The pre-qualified incentives encourage customers to purchase and install more energy-efficient equipment for small-sized energy upgrades and equipment replacement projects. NYSERDA advertises its pre-qualified incentives by characterizing eligible projects as "small, simple equipment changeouts," and urges applicants to install qualifying measures and then apply for up to $60,000 in incentives.

EFP's pre-qualified incentives provide a specified dollar amount per unit of the equipment. Facilities can receive up to $30,000 in incentives for pre-qualified electric measures and up to the same amount ($30,000) in incentives for pre-qualified natural gas measures per calendar year. To help applicants in this process, EFP has made measure worksheets available through the EFP website.[4] The pre-qualified incentives have no minimum incentive requirement. Prospective applicants must use the Consolidated Funding Application (CFA) and submit their incentive request and project documentation within 90 days after project completion.

Pre-qualified measures include qualifying electric and natural gas equipment and materials of the following types:

- Lighting (ENERGY STAR®- or DesignLights Consortium-qualified)
- Variable frequency drives (VFDs)
- Chillers

[4] The linked page provides links to the measures worksheets: Lighting – New Construction, Lighting – Retrofit, HVAC, Chillers, Interval Meters, Variable Frequency Drives, Commercial Refrigeration, Commercial Kitchen Equipment and Washers, Natural Gas – National Fuel Customers, and Natural Gas – SBC-paying customers. http://www.nyserda.ny.gov/Energy-Efficiency-and-Renewable-Programs/Commercial-and-Industrial/CI-Programs/Existing-Facilities-Program/Pre-Qualified-Incentives.aspx

- HVAC (heating, ventilation, and air conditioning), furnaces and boilers, and space and water heating equipment
- Commercial refrigeration, washers, and kitchen equipment
- Interval meters

1.2.3 Performance-based Incentives

The performance-based incentives encourage customers working on large-scale projects to achieve significant, verifiable electricity or natural gas savings; the incentives also encourage customers to undertake projects facilitating DR and MBCx. NYSERDA advertises its performance-based incentives by characterizing eligible projects as "large, custom improvements," and urges applicants to involve NYSERDA early in project planning. Applicants are eligible for up to $2 Million in incentives. Prospective applicants must apply using the CFA either before or within 90 days of contracting for the project, and prior to the demolition or removal of existing equipment or installation of new equipment relating to the project.

The performance-based incentives are typically higher than incentives for pre-qualified projects.[5] EFP defines its performance-based incentives as a dollar amount per unit of energy saved; the specific amounts vary by measure category.[6] Project savings for the performance-based applications are estimated through engineering analyses.

EFP identifies the following performance-based incentive categories:

- Electric and natural gas efficiency – incentives offset a portion of the capital costs of qualifying, cost-effective energy efficiency projects that reduce energy consumption at an eligible facility
    - Electric measures: lighting, motors, VFDs, energy management systems, HVAC, chillers
    - Natural gas measures: furnaces/boilers, water heaters, steam/hot water distribution piping insulation; heat recovery (such as flue gas economizers)
    - Other measures: EFP staff will consider applications for measures not listed here

[5] When both types of incentives are expressed as a dollar amount per unit of saved energy, performance-based incentives are greater than pre-qualified incentives.

[6] The downstate incentives per unit of saved energy are higher than the upstate ones.

- Demand response and energy storage– incentives offset a portion of the qualifying technology costs that enables facilities to participate in DR programs and energy storage. Such measures include:
    - Load shedding controls
    - Heat or power generation
    - Thermal energy storage
- Monitoring-based commissioning – incentives support the implementation of measurement tools, systems, and enabling technologies that promote persistent and measurable operational-based energy savings. Technologies include:
    - Temperature sensors for chilled water and condensate
    - Wet and dry bulb temperature sensors
    - Flow rate sensors

Applicants for performance-based incentives submit an application that includes, among other things, proposed equipment specification sheets supporting their claims of project eligibility and calculations of anticipated energy savings. NYSERDA conducts an economic evaluation to determine project cost-effectiveness using the Total Resource Cost (TRC) test, and if it passes, NYSERDA issues eligible applicants of qualifying projects purchase orders. Applicants have two years from the purchase order dates to complete the project. EFP staff assigns a Technical Consultant (TC) to the project that contracts with the applicant to conduct an Engineering Analysis (EA). The TC conducts a pre-installation inspection to determine the project's baseline conditions and subsequently completes an analysis that includes detailed energy savings calculations. EFP staff reviews the EA, makes any necessary adjustments to the estimated energy savings or incentives, and then notifies the applicant and facility contact that they can implement the project.

After completion of the performance-based project, the applicant revises the EA to reflect post-installation conditions and submits it to NYSERDA's assigned TC. The TC conducts a post-installation inspection and collects any outstanding relevant documentation. Upon approval of all final deliverables, NYSERDA issues the full incentive to the applicant for projects not requiring measurement and verification (M&V, requirements discussed subsequently) and issues partial payment to applicants for projects requiring M&V. When the applicant completes the M&V in accordance with the approved EA, NYSERDA reviews the results and releases the remaining funds. Final incentive levels may be adjusted based on data gathered during the post-installation inspection and/or with the M&V results.

EFP typically requires M&V for the following types of performance-based projects:

- Lighting projects saving more than 1,000,000 kWh annually
- Electric efficiency projects savings more than 500,000 kWh annually
- Natural gas efficiency projects saving more than 5,000 MMBtu annually

At EFP staff's discretion, M&V may be required or waived for any project. The M&V process is conducted by the applicant, but is closely monitored by NYSERDA's technical assistance contractors. For projects requiring M&V, the Applicant must create an M&V plan in collaboration with NYSERDA's TC. NYSERDA will pay 60% of the incentive upon installation and the balance after NYSERDA receives and approves the final M&V report. Final incentive amounts are based on the M&V results. Projects that fail to meet savings estimates may be required to reimburse NYSERDA for any overpayment.

1.2.4 Program Evolution and Current Offerings

The current design of EFP derives from a program NYSERDA initiated in 1999; the program name and much of its current structure arose from the merger of two prior programs in 2008.[7] Since 2008, EFP and its predecessors have funded projects for thousands of facilities.

NYSERDA revised EFP in 2012, for the 2012-2015 funding period, and added pre-qualified and performance-based incentives for natural gas measures, and full incentives for facilities that pay into the Systems Benefit Charge at a partial rate; prior to this change, these facilities were eligible for pro-rated incentives only. An additional revision affects few customers: starting in 2012 National Fuel Gas customers that use less than 12,000 Mcf annually may also be eligible for pre-qualified or performance-based natural gas incentives through EFP.[8]

NYSERDA is accepting applications to EFP through the CFA process on a first-come, first-served basis through 5:00 p.m. Eastern Standard Time on December 31, 2015, or until funds are exhausted.

1.2.5 Summary of Problems EFP Seeks to Address

Table 1-1 (next page) summarizes the problems EFP seeks to address.

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[7] Peak Load Management Program (PLMP) and Enhanced Commercial and Industrial Performance Program (ECIPP). The latter program evolved from the Commercial/Industrial Performance Program (CIPP), which launched in 1999.

[8] NYSERDA EFP Brochure, Revised June 2012. http://www.nyserda.ny.gov/-/media/Files/EERP/Commercial/Programs/EFP/efp-brochure.pdf

Table 1-1: Problems NYSERDA's Existing Facilities Program Seeks to Address

Problem Area and Barrier Details	Stakeholders Impacted and/or Involved
1. Technical Barriers	
Supply chain firms, seeing limited demand, provide limited supply of efficient equipment and DR and MBCx strategies	Manufacturers, distributors, ESCOs (including designers/specifiers and installers)
Supply chain firms, seeing limited demand, offer insufficient purchasing channels and service networks	Distributors, ESCOs
2. Economic Barriers	
Higher first costs	Facility owners, management companies, tenants with the authority to make improvements
Competing investment priorities, lack of capital	
For buildings with tenants, depending on which party pays for utilities, the party benefiting from an efficiency investment can differ from the party that incurs the cost (known as "split incentives")	
Macro-economic conditions, such as economic recession	
Perceived risk of business disruption due to new equipment, DR or MBCx	
Value proposition poorly understood	Facility owners, management companies, tenants, ESCOs
Perceived performance risk of new equipment or DR and MBCx strategies; perceived risk that costs will exceed benefits	
3. Informational Barriers	
Awareness of which equipment types and models are energy efficient	Facility owners, management companies, tenants, ESCOs
Awareness of DR and MBCx strategies and benefits of these strategies	
Awareness of site-specific opportunities, magnitude of potential savings, and likely costs	
Uncertainty of incentive availability	
Awareness of reputable energy efficiency technical consultants	Facility owners, management companies, tenants
4. Institutional Barriers	
Many businesses are risk averse, not inclined to adopt new facility-related technologies and operations strategies; reluctant to touch what in not broken, rather will focus on other priorities	Facility owners, management companies, tenants
Group decision-making requirements within businesses can slow adoption of new strategies	
Undervaluing renewable energy or energy efficiency and sustainable practices	
Confusion caused by overlap between NYSERDA and other New York State initiatives or other trade groups offering trainings	Facility owners, management companies, tenants, ESCOs
Contractors unwilling/reluctant to learn and perform services outside of their specific trade, or unaware of the benefits of these services	ESCOs

2 Program Objectives

EFP seeks to stimulate the demand for – and supply of – high efficiency equipment as well as equipment to enable facilities to participate in DR programs and MBCx; in addition, it seeks to stimulate the development of energy storage, DR, and MBCx strategies.

The program's target is existing buildings in the nonresidential sector, specifically: SBC-paying customers of New York State's electric and gas utilities in all nonresidential sectors, including commercial and industrial businesses, state and local government and municipal buildings, healthcare facilities, universities and colleges, schools, and hospitality/hotels. An additional program target is nonresidential customers constructing new facilities and seeking to install pre-qualified lighting measures.

Table 2-1 provides the program's objectives and the program features that address them.

Table 2-1: Existing Facilities Program Objectives

Existing Facilities Program Objectives	Program Feature Addressing Objective
Increase awareness of high efficiency equipment and its benefits	Program promotional collateral and activities; trade ally promotion of energy efficiency; outreach and technical consultants interacting with customers and trade allies
Increase awareness of energy storage, DR, and MBCx strategies and benefits of these strategies	Program promotional collateral and activities; trade ally promotion of energy storage, DR and MBCx; outreach and technical consultants interacting with customers and trade allies
Increase the ease with which ESCOs, facility owners, managers, and tenants can identify high efficiency equipment, and energy storage, DR, and MBCx strategies and enabling equipment	List of pre-qualified measures and access to technical consultants
Reduce barriers tenants face in installing in their leased facilities high efficiency equipment and energy storage, DR, and MBCx strategies and enabling equipment	Tenant eligibility
Reduce the first cost of high efficiency equipment and of adoption of energy storage, DR, and MBCx strategies and enabling equipment	Incentives
Increase ease with which facility owners, managers, and tenants can identify incentives available for most common cost-effective high efficiency equipment	Pre-qualified measures
Increase assistance for facility owners, managers, and tenants to undertake atypical, custom upgrades	Performance-based measures
Increase ease with which facility owners, managers, and tenants can connect with reputable technical consultants and obtain trustworthy estimates of site-specific opportunities, magnitude of potential savings, and likely costs	Access to technical consultants
Expand delivery channels for high efficiency equipment and energy storage, DR and MBCx enabling equipment and services	Stimulated demand

3 Program Resources

Table 3-1 identifies the funding, staff resources, and external and intangible resources that will contribute to EFP's effectiveness.

Table 3-1: Existing Facilities Program Resources

SBC Funding
• Funding available through PON 1219 (2012-2015)
NYSERDA Staff and Contract Staff Resources
• EFP staff: – Program management experience – Market knowledge – Efficiency, energy storage, DR, and MBCx technology and strategy knowledge • NYSERDA-contracted Technical Contractors • NYSERDA-contracted Outreach Contractors • NYSERDA marketing department • NYSERDA accounts payable department
External Resources
• Consolidated Funding Application for prospective applicants to submit for EFP incentives • Vendor and external consultant expertise • Energy Efficiency Portfolio Standard • Implementation contractors for other NYSERDA programs • Outreach contractors established through other NYSERDA programs (such as vertical and midstream contractors) • Outreach partnerships established through other NYSERDA programs, such as the Economic Development and Growth Extension (EDGE) and Green Jobs Green New York (GJGNY) programs. These partnerships involve groups, organizations, and/or individuals representing constituency groups such as economic development agencies, business associations, chambers of commerce, trade groups, technology development organizations, industrial development agencies, municipal governments, business leaders, incubators, regional planning boards, not-for-profits, civic groups, utilities, residential associations, municipalities, college and university centers of excellence
Intangible Resources
• NYSERDA's credibility • Staff, agency, and contractor/consultant relationships with key stakeholders • Customers' and ESCOs' experiences based on prior program participation • Increased awareness and building of momentum resulting from NYSERDA's many education and outreach initiatives • New York Department of Public Services reputation for advocacy of energy efficiency policy

4 Program Activities

NYSERDA's Existing Facilities Program offers incentives to electric and gas customers in nonresidential sectors. EFP offers pre-qualified incentives to encourage the purchase and installation of more energy efficient equipment at a fixed "per unit" basis, and offers performance-based incentives that vary depending on potential savings. To support these overall goals, the program engages in multiple activities that fall into the following areas:

1. Outreach
2. Technical services
3. Financial assistance
4. Quality assurance and reporting

4.1 Outreach

EFP and NYSERDA Marketing staffs compose and release the PON to alert customers and ESCOs of the program. EFP staff incorporates the Existing Facilities Program into the CFA web tool. Program and NYSERDA Marketing staffs create and maintain web-accessible EFP marketing collateral including pages on the NYSERDA website, program brochure and fact sheet, and case studies.[9] EFP staff and OCs also conduct outreach and promotional efforts such as informational audio conferences, presentations to trade groups, newsletters, e-mail communication, advertisements in trade journals, and press releases.

Staff and OCs direct program advertising and outreach to both potential participants and contractors, aiming to inform them of the benefits of energy efficiency, energy storage, DR, MBCx, and other cost-effective strategies. EFP staff offers workshops and other tools to inform contractors and potential participants of the benefits of DR opportunities and of monitoring-based ongoing commissioning.

EFP staff and OCs support potential applicants (customers and contractors) through all steps of the participation process by answering questions and providing information. TCs support outreach activities by establishing communication between the program and customers/ESCOs and creating relationships with potential and current participants.

4.2 Technical Services

EFP staff engages in a variety of activities that provide or incorporate technical services deployed to facilitate the development and submittal of qualifying projects. EFP staff also uses technical expertise to assure project quality, activities described in the Section 4.4.

[9] http://www.nyserda.ny.gov/Energy-Efficiency-and-Renewable-Programs/Commercial-and-Industrial/CI-Programs/Existing-Facilities-Program/EFP-Tools-and-Resources.aspx

4.2.1 Pre-qualified Measures

EFP staff periodically reviews and revises pre-qualified measures, savings and program eligibility criteria. This periodic review assuring measures and incentives levels continue to be in line with the leading edge of the market.

Staff maintains Pre-Qualified Measure Worksheets that clearly describe eligible measures; currently, ten worksheets, each pertaining to a different set of measures, are available. These multi-page worksheets provide general instructions for providing the measure data required for applications, general eligibility requirements for the measure category, detailed measure-specific eligibility requirements, graphics illustrating the measures, and a data collection table with specific directions for each data element required.

4.2.2 Performance-based Measures

EFP staff determine the program's technical requirements for the EA and M&V studies to maintain project quality and verify savings. EFP staff and OCs are available to consult with customers and applicants about eligibility, assist customers and applicants with the application process, and schedule site visits. This support can include assisting applicants with the preparation of an EA.

NYSERDA assigns and directs Technical Consultants to review documentation required for performance-based projects, including EAs, M&V plans, and final verified savings reports. Technical Consultants support applicants and the applicants' consultants and contractors as necessary to develop the required documentation.

4.3 Financial Assistance

EFP provides incentives to qualifying pre-qualified and performance-based projects. EFP staff reviews applications to determine if projects meet all necessary criteria (described further in next subsection), approves applications for NYSERDA's payment of the indicated incentive, and directs the accounts payable department to issue the incentive payment to the applicant. EFP staff notify applicants whose EAs have been found satisfactory of the incentives they can expect by sending them a purchase order for the project. EFP staff track completed projects and project pipeline to ensure that the program can fully fund all encumbered projects.

4.4 Quality Assurance and Reporting

EFP staff reviews all submitted project application materials for completeness, accuracy, and conformance to program requirements. Quality assurance activities vary by project type and are described subsequently. Staff tracks, summarizes, and reports on all applications received, energy savings estimates at all project stages, and incentives encumbered and paid.

4.4.1 Pre-qualified Measures

EFP staff reviews the application for completeness, accuracy, and conformity to program requirements. Applications, which applicants submit via the CFA. Applications must include Pre-Qualified Measure Worksheets, utility bills (to verify the facility pays into the System Benefits Charge),[10] equipment specification sheets, and equipment invoices for measure purchase and installation. EFP staff inspects a sample of projects (about 10%) to assure conformity with requirements.

4.4.2 Performance-based Measures

EFP staff reviews the initial project application, submitted via the CFA. Applicants are required to submit this project application before or within 90 days of project contracting. EFP staff reviews, verifies that facilities pay into the System Benefits Charge, and approves the project Engineering Analysis before issuing a purchase order for the project to move forward. EFP staff encumbers funds for all purchase orders they issue.

The EA document includes, but is not limited to, project description, economic evaluation, energy savings calculations, and equipment specification sheets for all measures to be installed. Technical Consultants review the EAs first for completeness and contact applicants to obtain any required, omitted information and to clarify submitted information as needed. If applicants are unresponsive to the requests of Technical Consultants, program staff contact the applicants to facilitate timely review of the EAs. The Technical Consultant conducts a pre-installation inspection to verify conditions and assumptions reported in the EA.

After project completion, which must be within two years of the purchase order date, the applicant submits an updated set of documents, which reflects the post-installation conditions. The required documents may include the M&V results. The Technical Consultant reviews these documents, contacts the applicant as necessary to clarify information or collect missing information. The Technical Consultant schedules and conducts a post-installation inspection for each project. If the post-installation inspection or M&V results indicate fewer savings than anticipated, the EFP staff adjusts the incentive amount. For projects approved by Technical Consultants, EFP staff conducts a final review and submit the project for incentive payment.

EFP staff records the documented savings in the project-tracking database along with installation details and results from projects. Staff uses the information in the database to report on the program and demonstrate the results achieved through the program projects. Documented savings help establish credibility for the program with ESCOs and customers and encourage more energy efficient and DR projects outside of the program.

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[10] The EFP Program Brochure states “To be eligible, a facility must pay into the System Benefits Charge (SBC) as electric and/or natural gas distribution customers” through one of nine utility companies identified in a table that distinguishes between electric and natural gas distribution customers (six utilities are both electric and gas, three are gas only).

4.5 Summary of EFP Activities

Table 4-1 summarizes the activities of the Existing Facilities Program.

Table 4-1: Existing Facilities Program Activities

Activity Area
Outreach Activities
Release PONs (providing guidelines and application materials and informing the market of the incentives available and allowing customers and ESCOs to identify/submit projects); incorporate opportunity into CFA web tool
Develop and maintain program collateral (website, program brochure and fact sheet, case studies, etc.)
Conduct outreach and promotional efforts to inform customers and ESCOs of the program opportunity, incentives available, and program details
Develop and deliver DR workshops, websites, and other tools to inform contractors and potential participants of the benefits of DR opportunities
Develop and deliver MBCx workshops, websites, and other tools to inform contractors and potential participants of the benefits of MBCx opportunities
Provide support to potential applicants
Technical Services Activities
Develop and maintain Pre-Qualified Measure Worksheets
Determine technical requirements for Engineering Analysis and M&V studies
Assign Technical Consultants to projects, oversee their work
Assist customers, as necessary, to develop required project documentation
Financial Assistance Activities
Approve applications for payment of incentives
Pay approved incentives
For performance-based projects, issue purchase orders and track projects completed and in pipeline
Quality Assurance and Reporting Activities
Determine for each pre-qualified measure application whether qualifying criteria are met
Conduct site inspection of sample of pre-qualified projects
Track and report approved pre-qualified projects
Review and approve performance-based project applications and EAs
Conduct pre-installation site inspection of performance-based projects
Issue purchase orders and encumber funds
Field-verify installed performance-based projects and review M&V reports
Adjust performance-based incentives to verified savings as warranted by the post-installation inspection or M&V
Track and report performance-based project installations and outcomes

5 Program Outputs

Table 5-1 documents the outputs related to each EFP activity. Outputs are immediate outcomes resulting from the activities. The table also documents indicator and data sources one may use to identify program progress against those indicators.

EFP addresses New York State-specific building needs and the barriers to full market adoption of improved building technology and practices. It encourages building stakeholders to accelerate the market adoption of underused high-performance building technologies and practices, including energy storage, DR and MBCx. The indicators and data sources focus on the materials, processes, activities, and documentation to support this market acceleration.

For brevity, the table uses the acronym "EE" to refer to energy efficiency projects.

Table 5-1: Existing Facilities Program Outputs, Indicators, and Potential Data Sources

Outputs	Indicators	Data Sources and Potential Collection Approaches
Outputs from Outreach Activities		
PON released, posted on website, and incorporated into CFA	EFP website EFP accessible through CFA	Review of program website and CFA web tool
Program collateral generated	EFP website EFP brochure EFP fact sheet EFP case studies	Review of program website and related files and documents
Marketing collateral describes benefits of EE, energy storage, DR, and MBCx	EFP website EFP brochure EFP fact sheet EFP case studies	Review of program website and related files and documents
Promotional activities conducted: presentations and workshops, newsletters and emails, media buys and earned media	Types of presentations and workshops offered, number of times offered, venues, audience size Types of collateral created (e.g., newsletters, email blasts), number of times disseminated, venues, audience size Types of media buys and earned media, number of occurrences, venues, audience size Number of customers and ESCOs aware of program opportunity	Review of program and marketing databases and related files and documents Market survey of eligible customers and ESCOs
Potential applicants receive any needed support	Number of contacts made and/or questions fielded	Review of program customer relationship management data

continued

Outputs	Indicators	Data Sources and Potential Collection Approaches
Outputs from Technical Services Activities		
Up-to-date Pre-Qualified Measure Worksheets developed	Measure worksheets posted on website	Review of program website
Technical requirements for EA and M&V established	Documentation of EA and M&V technical requirements	Review of program-related files and documents
EFP team relationships with customers	Documentation of M&V requirements Applicants' understanding of Technical Consultant role and program requirements	Review of program-related files and documents Survey of applicants
Customers/project receiving EFP team assistance	Number of contacts made and/or questions fielded Number of applicants assisted with performance-based project documentation Satisfaction of applicants with assistance received	Review of program customer relationship management data Survey of applicants
Outputs from Financial Assistance Activities		
Applications approved for payment	Number and value of applications received, by type (pre-qualified and performance-based) Number and value of applications approved, by time Number of applications refused, with reason for refusal (by type)	Review of program database
Approved incentives paid	Number of applications paid (by type) Geographical distribution, size, and measure types of paid projects (by type)	Review of program database
Purchase orders issued; funds encumbered and spent tracked against program budget	Status tracking of expended funds, funds encumbered, purchase orders, and remaining budget	Review of program database

continued

Outputs	Indicators	Data Sources and Potential Collection Approaches
Quality Assurance and Reporting Activities		
Pre-qualified measure applications reviewed	Status tracking of reviews of pre-qualified projects	Review of program database
Pre-qualified projects tracked in database and program reports	Status tracking of pre-qualified project reviews Program reporting internal to EFP management and to broader agency	Review of program database Review of program reporting
Sample of pre-qualified measures inspected	Status tracking of inspections Documentation of inspection findings	Review of program database and related files and documents
Performance-based applications and EAs reviewed	Status tracking of reviews Documentation of review findings	Review of program database and related files and documents
Pre-installation sites inspected	Status tracking of inspections Documentation of inspection findings	Review of program database and related files and documents
Installed projects field-verified and M&V reports reviewed	Status tracking of field verifications and M&V reviews Documentation of review and verification findings Verified savings realization rates by geography, measure type, and size	Review of program database and related files and documents
Performance-based incentives adjusted to verified savings	Status tracking of incentive adjustments and rationale	Review of program database and related files and documents
Performance-based projects and outcomes tracked in database and reported in program reporting	Status tracking of reviews of performance-based projects Program reporting internal to EFP management and to broader agency	Review of program database Review of program reporting

6 Program Outcomes and Logic Diagram

Table 6-1 presents tables of EFP outcomes, distinguishing between those occurring in the short-term, medium-term, and long-term, along with the indicators and potential data sources for the indicators. The section concludes with a logic model diagram.

For brevity, the table uses the acronym "EE" to refer to energy efficiency projects and the term "clean energy" to encompass the program-targeted technology and services of EE, energy storage, DR, and MBCx.

Table 6-1: Existing Facilities Program Outcomes, Indicators, and Potential Data Sources

Outcomes	Indicators	Data Sources and Potential Collection Approaches
Short-Term Outcomes (1-3 years)		
Customers and ESCOs aware of program opportunity and potential benefits of EE, energy storage, DR, and MBCx; ESCOs use program marketing tools	High or increasing awareness of program and of EE, energy storage, DR, and MBCx benefits among customers and ESCOs	Survey of customers and ESCOs Analytics of EFP web pages views and usage
Customers connected with reputable clean energy consultants and obtain trustworthy estimates of site-specific opportunities and potential savings and costs, including EE, energy storage, DR and MBCx strategies	High or increasing number of customers able to find reputable clean energy consultants Increasing number of clean energy consultants able to identify site-specific opportunities and potential savings and costs ESCOs and customers can identify qualifying opportunities	Market study of nonparticipants investing in facility improvements in recent past to explore knowledge of how to find reputable clean energy consultants Market study of building trades contractors and clean energy consultants to assess capacity to identify qualifying opportunities and likely savings and costs
EFP project applications submitted for EE, energy storage, DR and MBCx opportunities	High or increasing number and variety of participating customers and ESCOs, with large or increasing variety of project types (customer variety by business type, by owner/ manager/ tenant) Prospective applicants understand qualifying measures program requirements, and applying through the CFA Prospective applicants understand how to satisfy EA requirements or how to obtain assistance	Review of program database General population study to gauge proportion of program participation among customers investing in their facilities Market study of nonparticipants investing in their facilities in recent past to explore ease of use and comprehension of program- and application-related materials, requirements, and incentives
EE, energy storage, DR, and MBCx projects incentivized, completed, and providing benefits	High or increasing proportion of projects completed satisfactorily, for all technology types Quality assurance activities assure projects provide savings	Review of program database and related files and documents Review of realization rates as determined by M&V Program impact evaluation

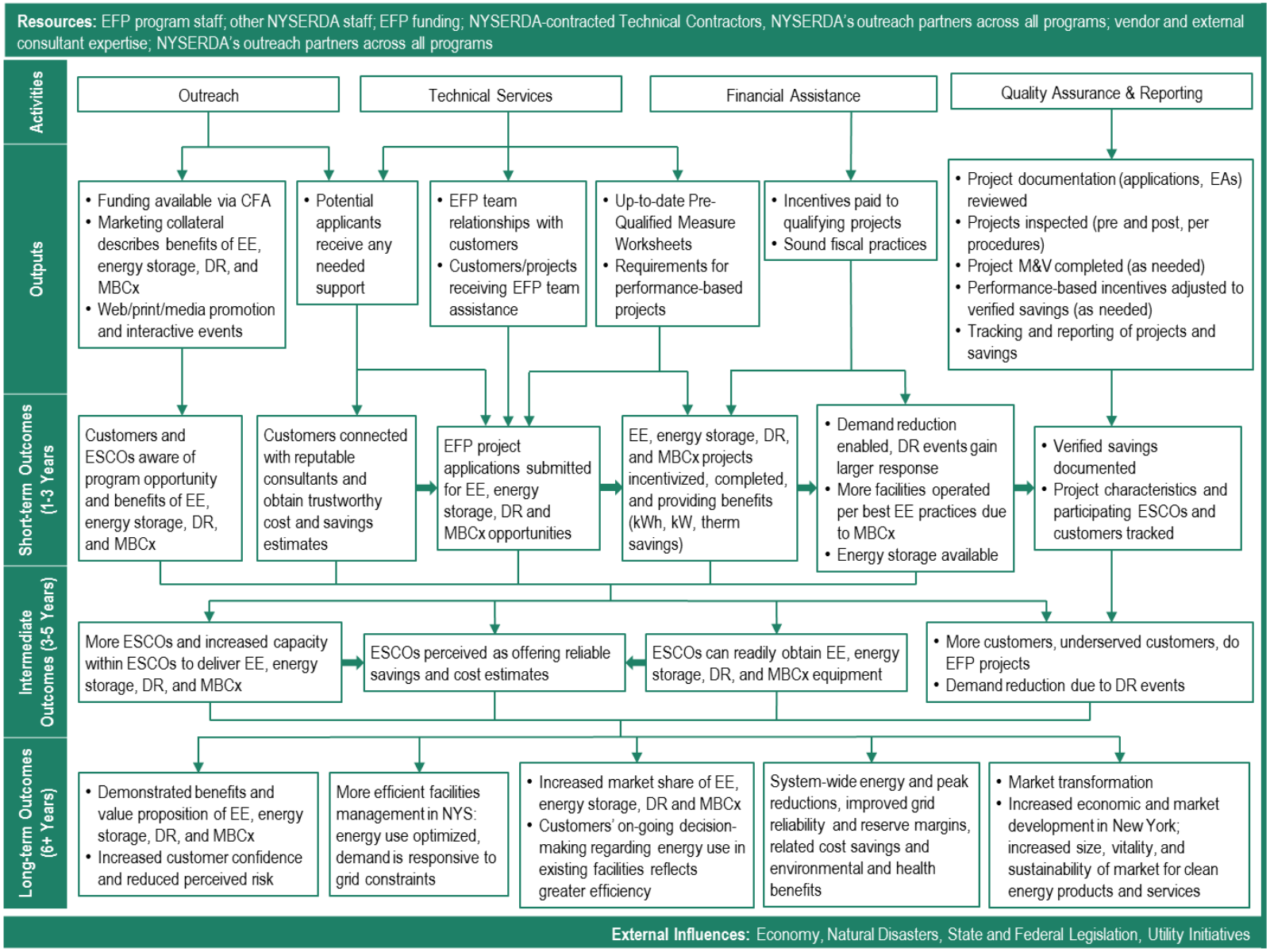
continued

Outcomes	Indicators	Data Sources and Potential Collection Approaches
Short-Term Outcomes (1-3 years) Continued		
kW, kWh, and therm savings	Documented energy use reduction	Review of program database and related files and documents Program impact evaluation
Demand reduction procedures enabled, DR events gain larger response	Increasing number of facilities with DR capabilities and strategies Customers participating in DR programs	Review of program database and related files and documents Program participants in utility and NYISO DR programs
More facilities operated per best EE practices due to MBCx	Increasing number of facilities with commissioning capabilities and strategies MBCx energy savings	Review of program database and related files and documents Program impact evaluation
Energy storage installed and available	Increasing number of facilities with energy storage Capacity of energy storage systems Utilization of energy storage capacity	Review of program database and related files and documents Program impact evaluation
Verified savings documented; project characteristics and participating ESCOs and customers tracked	Program tracking databases up-to-date, accurate, complete	Review of program database
Intermediate-term Outcomes (3-5 years)		
More ESCOs and increased capacity within ESCOs to deliver quality EE, energy storage, DR, and MBCx projects and services	Increased numbers of contractor firms with capacity in EE, energy storage, DR, and MBCx Increased number of individuals in the workforce with clean energy qualifications	Review of program database and related files and documents Survey of ESCO projects, services, and common practices
ESCOs perceived as offering reliable savings and cost estimates	Accuracy of ESCO savings estimates compared to actual savings Customer perception of estimates and satisfaction with results	Review of program database and related files and documents Survey of customers
ESCOs can readily obtain EE, energy storage, DR and MBCx equipment	Decreasing number of projects with delays or modifications due to equipment unavailability	Review of project tracking data Survey of participating ESCOs and applicants
More customers, including underserved customers, bring eligible projects to EFP	Increased variety of participant business types, across EE, energy storage, DR, and MBCx	Review of program database
Participants respond to DR events (utility and NYISO) and reduce demand during peak and based on price signals	Increased effectiveness of DR events: energy savings, number of responding customers	Review of DR program databases Impact evaluation of DR programs

continued

Outcomes	Indicators	Data Sources and Potential Collection Approaches
Long-term Outcomes (6+ years)		
Persisting benefits and value proposition of EE, energy storage, DR, and MBCx demonstrated; increased customer confidence and reduced perceived risk	Increased customer and ESCO confidence that EE, energy storage, DR and MBCx will deliver persisting benefits Reduced perceptions of risk among customers ESCOs	Survey of customers and ESCOs
More efficient facilities management in NYS: energy use optimized, demand is responsive to grid constraints	Reduced unit energy consumption for New York State nonresidential facilities Increased effectiveness of DR events in obtaining needed load reduction	Nonresidential energy use survey NYISO database
Increased market share of EE, energy storage, DR, and MBCx equipment and services	Increased market shares for EE, energy storage, DR, and MBCx equipment and professional services Reduced unit energy consumption for New York State nonresidential facilities	Vendor survey Spillover assessment Nonresidential energy use survey
Customers' on-going decision-making regarding energy use in existing facilities reflects greater efficiency	Reduced unit energy consumption for New York nonresidential facilities	Nonresidential energy use survey
System-wide energy and peak reductions, improved grid reliability and reserve margins, related cost savings and environmental and health benefits	kW, kWh and therm savings Lower demand during peak periods Energy-cost savings Fewer grid-critical events and outages Reduced greenhouse gas emissions Lower particulate and pollution levels Corresponding environmental, health, and community benefits	Impact evaluation Spillover assessment Environmental, health, and community economic studies of net impacts based upon energy savings NYISO data
Increased economic and market development in New York State; increased size, vitality, and sustainability of market for clean energy products and services	Improvement in economic indicators Increased market shares for EE, energy storage, DR and MBCx equipment	Studies of New York State economy Vendor survey

Figure 6-1: Existing Facilities Program Logic Model



7 Assumptions about Strategies

This section describes the testable hypotheses or testable assumptions implicit in the program theory and logic. Evaluation research addressing these hypotheses will help to validate the program theory and will inform NYSERDA EFP staff of program progress and potential areas for program refinement. Research on these key evaluation questions address how EFP program activities and outputs lead to the desired short-, intermediate-, and long-term outcomes.

For brevity, this section uses the term "clean energy" to refer to EE, energy storage, DR, and MBCx.

7.1 Role of Technical Consultants

Technical Consultants in EFP function in the market place in two primary ways:

1. To assist applicants and their contractors/consultants on technical matters, ranging from understanding the site-specific benefits and costs of the clean energy technology to reliably documenting, through M&V, the energy benefits; and

2. To provide a neutral source of information to the applicant, so that the applicant might trust the benefit and cost estimates without worry that the contractor is trying to oversell.

Technical Consultants also function in a program support capacity as an extension of EFP staff; in this role, they provide project quality assurance.

For the program to attain its desired long-term outcomes, it is necessary that Technical Consultants' role in the clean energy market decreases in importance, even though their role in assuring project quality may continue. As the program moves toward successfully attaining its long-term outcomes, EFP target customers (customers with nonresidential existing facilities) should increasingly know where to find contractors and consultants that:

1. Have knowledge of EE, energy storage, DR, and MBCx technologies and their benefits, can estimate the site-specific benefits and costs of these technologies for a specific facility, and can reliably document the resulting energy benefits.

2. Constitute a trusted source of information on these technologies.

The program theory assumes this change will occur due to:

1. Program marketing materials that provide relevant information on the benefits, costs, and applicability of these technologies,

2. Demonstration of these technologies at the sites of program participants (that is, multiple "real world" successful applications throughout the State),

3. Participating customers that have positive experiences with the technologies and share their experiences with members of the business community,

4. The contractors and consultants working for participating customers, that gain experience in all phases of the technologies (scoping, installation, commissioning (as relevant), documentation of savings (as relevant), and maintenance), and

5. Increased supply of these technologies and of information on these technologies coming from manufacturers and distributors (and possibly increased variety of technologies)

Subsequent evaluations can assess the degree to which these five assumptions are occurring and the degree to which the market role (as opposed to the program support role) of Technical Contractors decreases as the market share of these technologies increases throughout the State.

7.2 Role of Participants

The program theory assumes that as participants have successful technology installations through the program, they will have a favorable view of the technologies themselves and will continue to seek out EE and consider the technologies and strategies of energy storage, DR, and MBCx. They will develop increasing confidence that these clean energy technologies are widely applicable and beneficial to their facilities, and increasing confidence that the contractors and consultants that assisted them in their EFP projects have the necessary capabilities to successfully install other clean energy technologies.

For the program to attain its desired long-term outcomes, it is necessary that program participants:

1. Install clean energy technologies independent of the program (spillover),

2. Are a source of increasing demand for the technologies and associated professional services, and

3. Provide demonstrated, identifiable success (that is, other firms can look to their example for assurance the technologies deliver the promised benefits).

Subsequent evaluations can assess the degree to which these three assumptions are occurring.

7.3 Role of Participants' Contractors/Consultants

The program theory assumes that as contractors and consultants working with participants have successful technology installations through the program they have:

1. Increasing confidence that these clean energy technologies are widely applicable and beneficial to their customers,
2. Increasing ability to provide customers with trustworthy information on the technologies' site-specific costs and benefits,
3. Increasing competency in specifying, installing, commissioning (as appropriate), and maintaining the equipment, as well as in documenting actual benefits (as requested by customers), and
4. Increased sales of these technologies/services relative to standard (non-clean energy) technologies

Subsequent evaluations can assess the degree to which these four assumptions are occurring.

7.4 Nonparticipant Actions

The program theory assumes that as participant facilities demonstrate the benefits of EE, energy storage, DR, and MBCx, and as participants' contractors/consultants increasingly promote these technologies to their clients, nonparticipants will have:

1. Increasing confidence that these clean energy technologies are widely applicable and may be beneficial to their facilities,
2. Increasing confidence in the competency of their contractors/consultants to deliver such technologies and services, and
3. Increasing trust in their contractors' estimates of the technologies' site-specific costs and benefits.

Subsequent evaluations can assess the degree to which these three assumptions are occurring.

7.5 Role of Manufacturers and Distributors

The program theory assumes that as participants increasingly demand these clean energy technologies, as contractors/consultants increasingly promote these technologies to their clients, and as nonparticipants increasingly demand these technologies, manufacturers and distributors will:

1. Supply increasing quantities of these technologies to the New York State market,
2. Continue product development to support the increasing market size, and

3. Provide enhanced technical specifications to facilitate the application of the technologies in a variety of settings, additional promotional materials, and increased marketing and other supply-side support.

Subsequent evaluations can assess the degree to which these three assumptions are occurring.

8 Non-Program Influence on Outcomes

External influences, which NYSERDA programs cannot directly influence, can help to enhance or hamper achievement of the program's desired outcomes. These potential external influences include:

1. Economic conditions may improve, leading customers to try to expand their revenues with the expanding economy. Customers adopting this strategy may dedicate their financial resources to support growth in sales, rather than to fund reductions in operating costs.

2. Economic conditions may decline, leading customers to curtail or eliminate all discretionary expenditures, such as expenditures in enhanced building performance.

3. Response to destruction caused by natural disasters may siphon attention and resources away from enhancing building performance.

4. State and federal legislation may increase or diminish market forces for clean energy.

5. Utility initiatives may influence customer and ESCO response to EFP.

9 References

The authors consulted two types of references to develop this logic model report: documents and interviews with EFP program staff.

9.1 Documents

Existing Facilities Fact Sheet, available at http://www.nyserda.org/Energy-Efficiency-and-Renewable-Programs/Commercial-and-Industrial/CI-Programs/Existing-Facilities-Program/EFP-Tools-and-Resources.aspx

Existing Facilities Frequently Asked Questions, available at http://www.nyserda.org/Energy-Efficiency-and-Renewable-Programs/Commercial-and-Industrial/CI-Programs/Existing-Facilities-Program/EFP-Tools-and-Resources.aspx

Existing Facilities Program Brochure, available at http://www.nyserda.org/Energy-Efficiency-and-Renewable-Programs/Commercial-and-Industrial/CI-Programs/Existing-Facilities-Program/EFP-Tools-and-Resources.aspx

Existing Facilities Program landing page: http://www.nyserda.org/Energy-Efficiency-and-Renewable-Programs/Commercial-and-Industrial.aspx

Existing Facilities Program, Market Characterization and Assessment Report, prepared for NYSERDA by Navigant Consulting, Inc., June 19, 2012, available at http://www.nyserda.org/BusinessAreas/Energy-Data-and-Prices-Planning-and-Policy/Program-Evaluation/NYE$-Evaluation-Contractor-Reports/2012-Reports/Market-Analysis.aspx

Industrial and Process Efficiency Program Process Evaluation, prepared for NYSERDA by Research Into Action, Inc., November 2011, available at http://www.nyserda.org/BusinessAreas/Energy-Data-and-Prices-Planning-and-Policy/Program-Evaluation/NYE$-Evaluation-Contractor-Reports/2011-Reports/Process-Evaluation.aspx

New York State Online Consolidated Funding Application, available at http://www.nyserda.org/Energy-Efficiency-and-Renewable-Programs/Commercial-and-Industrial/CI-Programs/Existing-Facilities-Program/EFP-Tools-and-Resources.aspx

NYSERDA's Energy Efficiency and Renewables Programs landing page, and searches conducted of the website: http://www.nyserda.org/Energy-Efficiency-and-Renewable-Programs.aspx

9.2 Interviews

Eric Mazzone, EFP Project Manager, March 17, 2011, interview conducted by M. McRae, Research Into Action

Scott Smith, EFP Program Manager, March 15, 2011, interview conducted by M. McRae, Research Into Action