

**Existing Facilities Program  
Program Logic Model Report**

Final Report

Prepared for

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

Prepared by

**GDS Associates, Inc.**

**NYSERDA**

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**NEW YORK STATE ENERGY RESEARCH AND DEVELOPMENT AUTHORITY**  
**EXISTING FACILITIES PROGRAM**  
**PROGRAM LOGIC MODEL REPORT**  
**(FINAL NOVEMBER 2, 2010)**

**INTRODUCTION**

This report identifies and documents key elements (inputs, market actors, barriers, goals, activities, outputs, outcomes, potential external influences and researchable issues) associated with the Existing Facilities Program. This logic model addresses NYSERDA's expanded activities occurring as a result of recently added Energy Efficiency Portfolio Standard (EEPS) funding.

This document provides:

- 1) A table showing a list of documents relating to NYSERDA's Existing Facilities Program that were used to provide insight during development of this program logic model report;
- 2) A high level summary of the program, and the context of the markets within which this program operates. Information is also presented in this section on other complementary NYSERDA programs and other potentially complimentary and/or competing programs being offered through investor owned utilities in New York and the NY-ISO. Available market characterization information is also presented in this section, including a description of baseline conditions, technical energy and demand potential reductions, and the portion of that potential that the program is expected to achieve;
- 3) Key program-specific elements, including the ultimate goals of the program, market barriers, targeted market actors, program activities, inputs, anticipated outputs/outcomes, and potential external influences. Information on how program activities are expected to change the behavior of market(s)' actors is also presented in this section;
- 4) A program logic model diagram showing the linkages between inputs, program activities, outputs and outcomes, and identifying potential external influences;
- 5) A table listing the key outputs and outcomes, including identification of relevant measurement indicators and potential data collection approaches to guide later prioritization, and development of a monitoring and evaluation plan, and
- 6) A list of potential researchable issues for consideration within evaluation planning.

Section 1: **RELATED NYSERDA DOCUMENTS**

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Table 1 identifies NYSERDA and other potentially relevant documents that were reviewed for this report:

**Table 1. Relevant Documents Reviewed**

<b>NYSERDA Document Description</b>
GDS Associates. <b>New York Energy \$mart<sup>SM</sup></b> Enhanced Commercial Industrial Performance Program Logic Model Report. June 2007.
GDS Associates. <b>New York Energy \$mart<sup>SM</sup></b> Peak Load Management Program Logic Model Report. July 2007.
<b>New York Energy \$mart<sup>SM</sup></b> Commercial and Industrial Performance Program MCAC Report. Summit Blue Consulting. March 2005.
<b>New York Energy \$mart<sup>SM</sup></b> Peak Load Reduction Program MCAC Report. Summit Blue Consulting. June 2004.
New York's System Benefits Charge Programs Evaluation and Status Report, Year Ending December 31, 2009
<a href="http://www.nyserda.org/Programs/Existing_Facilities/default.html">NYSERDA Existing Facilities Program Website</a> , <a href="http://www.nyserda.org/Programs/Existing_Facilities/default.html">http://www.nyserda.org/Programs/Existing_Facilities/default.html</a>
NYSERDA, New York System Benefits Charge Programs Evaluation and Status Report, August 2010
NYSERDA PON 1219 – Existing Facilities Program
NYSERDA Supplemental Revision to SBC Operating Plan, Revised September 16, 2010
Optimal Energy, Achievable Electric Energy Efficiency in New York State DRAFT November 2008.
Optimal Energy. Natural Gas Energy Efficiency Resource Development Potential in New York. Prepared for New York Department of Public Service. October 31, 2006.

## Section 2: CONTEXT AND PROGRAM DESCRIPTION

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### 2.1 Program Description

The Existing Facilities Program (EFP) promotes energy efficiency and demand management within existing commercial and industrial buildings. This program is a consolidation of two prior NYSERDA programs – the Peak Load Management Program (PLMP) and the Enhanced Commercial and Industrial Performance Program (ECIPP), and provides incentives for projects with both gas and electric savings<sup>1</sup>. Building upon the success of these two programs, the July 1, 2008 merger provides a less complicated, more accessible program presentation to potential customers in the marketplace. EFP targets sectors of customers that include commercial and industrial businesses, healthcare facilities, universities and colleges, state and local governments, schools, hospitality/hotels, data centers and communications facilities.

There are two types of EFP incentives: prequalified and performance-based:

- **Pre-qualified** electric incentives encourage customers working on small-sized energy projects and equipment replacement projects to purchase and install more energy efficient measures. Some of the electric measures available to qualifying customers are lighting, heating, ventilation and air conditioning (HVAC), chillers, motors, variable frequency drives, and interval meters.
- **Performance-based** incentives are for customers or Energy Service Companies (ESCOs) working on large-scale projects achieving significant gas or electric consumption reductions. The incentives are typically higher than those for pre-qualified projects, and the performance-based projects require an engineering analysis, and are potentially subject to measurement and verification requirements. The various types of performance-based incentives are expected to result in the following impacts:
  - Electric efficiency incentives encourage the implementation of projects that deliver verifiable annual electric savings.
  - Combined heat and power (CHP) incentives contribute to the installation cost of clean, efficient, and commercially available CHP systems.
  - Industrial and data center process efficiency incentives help offset the costs of projects focused on increasing productivity, and decreasing electricity consumption on a per-unit of production basis.
  - Demand response provides help with a portion of the cost for technology, such as load curtailment and shifting (LC/S) and distributed generation (DG), that enable facilities to participate in the New York Independent System Operator demand response programs (which reduce electricity load in response to emergency and/or market-based price signals).

Energy demand reduction contributes to improvements of New York's energy system reliability and security, while helping businesses and industries to reduce operating costs. Allowing customers, ESCOs, and contractors access to multiple incentive strategies to support their energy projects will enable the New York ESCO community to continue to grow the market for energy efficiency in existing buildings, process equipment, and non-building efficiency measures.

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<sup>1</sup> Conversations with NYSERDA Staff indicate that EFP is also developing two new program initiatives (not yet launched), including Monitoring-Based Commissioning and Agricultural Initiatives.

### 2.1.1 Program Budget

The EFP EEPS Program budget for 2010 through 2014 is presented in Table 2 below, incorporating both gas and electrical funding.<sup>2</sup>

**Table 2. EEPS funding (Thousands of Dollars)**

	2010	2011	2012	2013	2014	Total
Electricity	\$2,912,000	\$3,852,000	\$8,162,000	\$8,162,000	\$3,300,000	\$23,476,000
Gas	\$66,501	\$1,321,540	\$2,347,506	\$304,418	\$0	\$4,039,965
Total	\$2,978,501	\$5,173,540	\$10,509,506	\$8,466,418	\$3,300,000	\$27,515,965

Note: The outreach budget for EFP for 2010-2014 is approximately \$1.52 million, reflecting \$1.32 million and \$201,899 approved for the electric and gas portions, respectively.

Note: As the original ECIPP and PLMP each had SBC funding for the period 2006-2011, some projects may receive SBC funding as well in 2010 and 2011.

The program also includes **New York Energy \$mart<sup>SM</sup>** (NYE\$) funding. The NYE\$ budget for the program is \$308 million dollars of which \$76 million of this funding remains available for the program to supplement EEPS dollars.<sup>3</sup>

## 2.2 Market Assessment

The most recent full Market Characterization, Assessment and Causality Evaluation (MCAC) report for the elements of the Existing Facilities Program was completed 2005 for ECIPP (then called the Commercial and Industrial Performance Program, or CIPP), and 2004 for PLMP (then called the Peak Load Reduction Program, or PLRP). All data in this section, unless otherwise noted, are from Sections 3 and 4 of these MCAC reports, and describe the state of energy efficiency in New York in 2004 and 2005. A full MCAC evaluation of the Existing Facilities Program began in Fall 2009.

### 2.2.1 Description of Baseline Condition

#### *Savings Already Achieved<sup>4</sup>*

As of June 30, 2010 the Existing Facilities Program reported a total savings of 487,200 MWh/year, and 384.3 MW of on-peak demand reduction.<sup>5</sup> It should be noted that EFP is the product of merging the PLMP and ECIPP programs, and EFP cumulative annual savings is now tracked as a combination of the savings achieved under these two programs. Results from projects with signed contracts prior to July 1, 2008 will be reflected under the earlier separate programs.

### 2.2.2 Expected Savings and Statewide Technical Potential

As shown in Table 3 and Table 4 below, between 2010 and 2014, the Existing Facilities Program is estimated to save approximately five (5%) percent of the achievable potential electric energy savings and two (2%) percent of the achievable potential gas savings estimated within New York's (excluding Long Island) existing commercial and industrial sectors. These numbers come from Optimal Energy's assessment of technical potential savings in New York for 2009-2015 and the Supplemental Revision to

<sup>2</sup> NYSERDA Supplemental Revision to SBC Operating Plan, revised September 16, 2010

<sup>3</sup> NYSERDA, New York System Benefits Charge Programs Evaluation and Status Report, August 2010

<sup>4</sup> NYSERDA, New York System Benefits Charge Programs Evaluation and Status Report, August 2010

<sup>5</sup> These numbers include EEPS cumulative savings of 8500 MWh per year and 2.3 MW of on-peak demand reductions

the SBC Operating Plan detailing expected program savings between 2010 and 2014.<sup>6</sup> While all future EFP projects will be funded through EEPS, some projects in 2010 and 2011 will continue to receive funding through (and have their savings attributed to) SBC III.

**Table 3. Achievable Potential Savings and Existing Facilities Program Expected Savings Totals<sup>7</sup>**

<b>Achievable Potential Savings, 2009-2014</b>		
<b>Sector</b>	<b>Annual Cumulative Energy Savings</b>	<b>Annual Cumulative Summer Peak Demand Savings</b>
Commercial Existing Buildings and Industrial, NYC & Upstate- Electric	10,642 GWh	2,347MW
Industrial, NYC & Upstate – Electric	2,749 GWh	400 MW
Total - Electric	13,391GWh	2,747 MW
Existing C& I - Gas	7,607,000 MMBtu	-
<b>Existing Facilities Program Expected Savings, 2009-2014</b>		
<b>Program</b>	<b>Cumulative Energy Savings 2009-2014</b>	<b>Percentage of Achievable Potential</b>
Existing Facilities- Electric Savings	682.8GWh	5%
Existing Facilities- Gas Savings	155,927 MMBtu	2%

**Table 4. Cumulative Year by Year Annual Energy Savings (GWh)**

	<b>2009</b>	<b>2010</b>	<b>2011</b>	<b>2012</b>	<b>2013</b>	<b>2014</b>
<b>Electric-Energy</b>						
<b>Achievable Potential Total Energy (In Relevant Sectors)</b>	<b>1,094</b>	<b>3,010</b>	<b>5,650</b>	<b>8,172</b>	<b>10,785</b>	<b>13,391</b>
Commercial Existing Buildings (GWh)	722	2,083	4,060	6,035	8,294	10,642
Industrial (GWh)	372	927	1,590	2,137	2,491	2,749
Existing Facilities Program (GWh)	536.4	548.6	573.	621.8	670.5	682.8
<b>Achievable Potential Total Demand (In Relevant Sectors)</b>	<b>210</b>	<b>585</b>	<b>1,108</b>	<b>1,626</b>	<b>2,184</b>	<b>2,747</b>
Commercial Existing Buildings (MW)	156	450	877	1,316	1,822	2,347
Industrial (MW)	54	135	231	310	362	400
<b>Gas</b>						
<b>Achievable Potential Existing C/I Sector (1,000 MMBtu)</b>	<b>7,109</b>	<b>8,675</b>	<b>10,386</b>	<b>9,012</b>	<b>7,641</b>	<b>7,607</b>
Existing Facilities Program (1,000 MMBTU)	0	1.6	49.3	134.0	155.9	0

<sup>6</sup> Optimal Energy, Achievable Electric Energy Efficiency in New York State DRAFT November 2008. EFP projections include EEPS numbers from the September 16 Supplemental Revision to the SBC Operating Plan.

<sup>7</sup> Table 3 and Table 4 taken from: Optimal Energy, Achievable Electric Energy Efficiency in New York State DRAFT November 2008. EFP projections include EEPS numbers from the September 16, 2010 Supplemental Revision to the SBC Operating Plan. SBC projections are obtained from the New York Energy Smart Program Evaluation and Status March 2009 Report: Year Ending December 31, 2008.

### 2.2.3 Awareness

In 2005, CIPP participants were asked about their awareness of energy-efficient measures and equipment. Participating end-use customers were found to be much more familiar with these technologies than those who were not participants. For participating end-use customers, 97% described themselves as being “extremely familiar” or “somewhat familiar” with energy-efficient measures and equipment. Non-participant end users responded with 68% indicating that their familiarity fell into these same highest awareness categories.

Energy Service Company (ESCO) contractors participating in CIPP reported a significantly higher level of knowledge regarding energy efficiency measures and equipment when compared to the non-participant ESCO contractors: Eighty percent (80%) of participating ESCO respondents stated that they were extremely familiar with energy efficiency measures, equipment, and services, compared to only 11% of the non-participant ESCO contractors. Similarly, 46% of participating ESCOs believed their familiarity with energy efficiency measures and equipment had increased significantly during the past five years, compared to only 21% of the non-participating contractors.

Participating ESCOs stated that the primary reasons for their increasing awareness of energy efficiency measures and equipment were advances in technology, and NYSERDA programs.

### 2.2.4 Availability

Over half of the end-use customers (55%) and 41% of participating ESCOs in 2005 stated that the availability of energy efficiency measures was becoming less of a market barrier over the past five years.

The availability of energy efficiency measures is also improving as ESCOs increase their marketing of energy efficiency measures, and their recommendations of these measures. ESCOs participating in the CIPP exhibited a substantial difference from the non-participant group, with 43% of participating ESCOs reporting that they were significantly increasing the frequency with which they recommend energy efficiency measures, equipment, and services, compared to only 15% of the non-participant contractor group. The participating ESCOs cited NYSERDA incentives as the most important reason for their increased recommendation of energy efficiency measures.

### 2.2.5 Cost and Pricing

In 2005, participating end-use customers and ESCOs reported that pricing and incremental cost remains the most significant market barrier to the installation of energy efficiency measures. Many of the end-use customers (34%) and ESCOs (33%) even stated that cost was increasing as a barrier, citing tighter financial situations in their organizations.

The pricing barrier is somewhat mitigated, however, when end-use customers factor energy cost savings into their analyses (*i.e.*, the incremental costs are offset somewhat by annual cost savings realized by installing energy-efficient measures and equipment). Both participating (100%) and non-participating (79%) end-use customers reported that they take energy cost savings into account when considering purchasing energy-efficient equipment.

Operations and maintenance (O&M) savings from energy efficiency measures and equipment represent another potential offset to the higher incremental costs associated with energy-efficient measures and equipment. Three quarters of participating ESCOs believed that all of their projects achieved O&M benefits in addition to the energy efficiency and financial benefits realized at the project sites. Only 10% of participating ESCO respondents felt that none of their projects achieved O&M savings.

## 2.2.6 Market Share

Increasing numbers and sizes of ESCOs (in terms of dollars/sales) in the market are an indicator, or proxy, for increasing sales of energy efficiency measures to end-use customers. The MCAC Team, through discussions with ESCOs in New York, probed for perceived changes in the size and activity in the State's ESCO market.

Although 37% of participating ESCOs believed that the number of ESCOs active in New York had increased significantly or somewhat during the past five years, 24% stated that the number had decreased somewhat. Another 22% of the participant ESCO group was unable to answer the question. The non-participant ESCO contractor group was similarly split, with 33% stating that the number of ESCOs active in New York had increased, 32% stating the number had stayed the same, and 28% unable to answer the question.

Both participating (46%) and non-participating contractors (43%) believed that ESCO activity in New York had increased during the past five years. However, a substantial number of respondents were unable to answer the question (22% of participants and 28% of non-participants).

## 2.3 Relevant NYSERDA, NY Utility and ISO-Sponsored Programs

In addition to NYSERDA's Existing Facilities Program, there are a number of other potentially relevant and complementary programs being implemented or soon-to-be implemented in New York, including other NYSERDA programs, New York area utility programs, and potential ISO-Sponsored programs. These programs are included in Section 3.5- Program Inputs and Potential External Influences of this report and are identified in Table 6 – Market Barriers, Table 8 – Program Inputs, Table 9. - Potential External Influences, and the program logic diagram (**Error! Reference source not found.**) as factors with the potential to impact (help or hinder) achievements of NYSERDA's Existing Facility Program goals.

### 2.3.1 NYSERDA Programs

NYSERDA is currently engaged in an effort to refine its overall messaging and communication strategy to increase the organizations' value among customers, align business activities, maximize awareness of its mission and programs, and provide clear, consistent communications to target audiences. This refined NYSERDA identity will be completed in concert with the development and implementation of several program marketing initiatives including the FlexTech, Industrial and Process Efficiency, New Commercial Buildings and Existing Facilities Programs. In addition, outreach activities to inform equipment suppliers, trade associations, and installation contractors about the Existing Facilities Program electric and gas program will be coordinated with the **New York Energy \$mart<sup>SM</sup>** Business Partners and Workforce Development Programs.<sup>8</sup>

### 2.3.2 New York Area Utility Programs

In addition to the other NYSERDA programs, New York area utility programs also potentially impact (help or hinder) achievements of NYSERDA's Existing Facility Program goals. NYSERDA works with these other program administrators to address coordination issues and potential for direct overlap with other energy efficiency Program Administrators. NYSERDA is developing systems to transfer pertinent project and customer lead information to other Program Administrators in order to minimize confusion where multiple opportunities for incentives are available to customers. Also, to mitigate double counting of savings achieved by different programs, customers applying to the Existing Facilities Program will be

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<sup>8</sup> NYSERDA Supplemental Revision to SBC Operating Plan, Revised September 16, 2010

required to certify upon submission of their application that they are not participating in another program for the same improvements.<sup>9</sup> To this end, New York area utility programs that potential impact achievements of NYSERDA's Existing Facility Program goals, include but are not limited to:

**Central Hudson Gas and Electric Corporation<sup>10</sup>** –

***Business Energy Savings Central Program (Small/ Mid Sized)***

The Business Energy Savings Central program is for non-residential customers of Central Hudson with an average electric demand of less than 350 kilowatts per month. This includes business offices, retail stores, manufacturing facilities, local governments, non-profits, private and public institutions, and healthcare facilities (many of the same customers targeted by NYSERDA's EFP).

The program offers an energy assessment, a report detailing where energy efficiency measures can produce the most savings, the cost and payback period for the upgrades, and rebates up to 70 percent of the equipment cost of the upgrade.

**National Grid Generation d/b/a National Grid<sup>11</sup>**

***Small/Mid Sized Business Energy Efficiency Program (Upstate New York)***

National Grid's Small/Mid-Sized Business Program is for business customers in upstate New York with an average demand of 200 kilowatts or less (or 40,300 kilowatt-hours or less) per month. The program aids qualifying business customers in installing energy efficient equipment. National Grid provides a free energy audit and report of recommended energy efficiency improvements. If the business customer chooses to make the recommended improvements using National Grid's vendor and equipment, National Grid will pay 70% of the cost of the installation of energy efficient equipment. The remaining 30% can be paid through the customer's electric bill, at 0% interest over a maximum period of 24 months. Customers paying their 30% share in a single lump sum are provided a 15% discount. Eligible energy efficient equipment includes: lighting upgrades, energy efficient time clocks, occupancy sensors, programmable thermostats, walk-in and reach-in cooler measures, and other site-specific custom projects (many of the same measures, services and customers provided through NYSERDA's EFP).

***Energy Initiative Program***

The Energy Initiative program would target commercial and industrial customers with a demand of less than 2 MW to promote retrofits of mechanical and electrical systems in commercial, industrial, agriculture, governmental, and institutional buildings. Similar to NYSERDA's EFP, the program would provide technical assistance and incentives to encourage installation of energy efficiency measures and provide recommendations for ways to improve energy efficiency. The program addresses both electric and gas energy efficiency measures using both prescriptive and custom measures and incentives.

Niagara Mohawk proposes that the electric portion of the Energy Initiative program offer three services: financial incentives, technical assistance, and commissioning. Eligible customers could qualify for custom and/or prescriptive incentives. The proposed custom rebates would equate to either 50% of the total installed measure costs, which include labor and equipment, or the cost to buy down the equipment costs to the customer to the equivalent of a one-year payback, whichever cost is less to Niagara Mohawk. The proposed prescriptive measures include lighting systems, lighting controls, energy management

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<sup>9</sup> NYSERDA Supplemental Revision to SBC Operating Plan, Revised September 16, 2010

<sup>10</sup> [Central Hudson Gas & Electric Website](http://www.savingscentral.com/): <http://www.savingscentral.com/>

<sup>11</sup> DSIRE website, New York Incentives/Policies for Energy Efficiency, National Grid – Small/Mid-Sized Business Energy Efficiency Program (Upstate NY), [http://www.dsireusa.org/incentives/incentive.cfm?Incentive\\_Code=NY51F&re=0&ee=1](http://www.dsireusa.org/incentives/incentive.cfm?Incentive_Code=NY51F&re=0&ee=1) and National Grid's "Cut Your Energy Costs, Strategies for Business Customers" [http://thinksmarthinkgreen.com/files/uny\\_small\\_biz.pdf](http://thinksmarthinkgreen.com/files/uny_small_biz.pdf) and [National Grid's Website](#)

systems and economizer controls, efficient motor and drive systems, air compressors, high performance ventilation, and variable frequency drives.

***Commercial High-Efficiency Heating and Water Heating Program***

This program targets many of the same customers served through NYSERDA's EFP and would offer prescriptive rebates to firm commercial customers and multifamily buildings that install high-efficiency heating and water heating equipment. The rebates would be designed to reduce the incremental cost between standard and high-efficiency equipment.

**Consolidated Edison Company of New York, Inc.<sup>12</sup>**

***Small Business Direct Installation Program***

Consolidated Edison is offering free on-site energy surveys and incentives for energy efficient heating, cooling and lighting. Con Edison business customers with an average peak monthly electric demand under 100 kW, qualify for a free energy survey. Con Ed will install energy efficiency measures at no cost such as compact fluorescent lamps (CFLs), low-flow aerators, high pressure rinse sprayers, and a water heater thermostat setback. Customers can also achieve even greater energy and financial savings with incentives of up to 70% when they install high efficiency lighting, ballasts and fixtures; retro commission existing heating, ventilation and cooling (HVAC) systems; install an Energy Star rated programmable thermostat for heating and cooling, and more.

***Commercial and Industrial Equipment Rebate Program***

Similar to NYSERDA's EFP, this proposed program is designed to encourage commercial and industrial customers to purchase and install high-efficiency equipment in their facilities. It would offer customers financial incentives at a rate of up to 70% of either the measure cost or the incremental measure cost (depending on the measures installed) for installing high-efficiency heating, cooling, and ventilation equipment, or for upgrading lighting and motors.

***Commercial & Industrial Custom Efficiency Program*<sup>13</sup>**

This program would provide incentives for energy efficiency measures in existing buildings and for new construction that are not offered through other programs. Incentives would be offered to participants for any measure, process, or operational improvement that provides cost-effective energy savings. Similar to NYSERDA's EFP, C&I customers would be offered financial incentives for upgrading equipment or systems and improving processes (e.g., lean manufacturing, retro-commissioning, or monitoring-based commissioning) not covered specifically by other Con Edison C&I programs. Initially, the program would place special emphasis on data centers and healthcare facilities. Con Edison plans to offer a rebate to cover up to 50% of the cost of a technical survey to identify potential cost-effective measures in a facility. The total survey rebate amount would be capped at \$50,000.

***Commercial & Industrial Custom Gas Efficiency Program***

The proposed program would provide a delivery channel for natural gas efficiency measures that are not available through Con Edison's other programs. It would offer performance-based financial incentives to customers installing non-traditional or emerging technologies that result in cost-effective energy efficiency savings. Tiered incentives would be offered for an extensive list of eligible measures in the following general categories: space and water heating; heating, ventilation, and air conditioning (HVAC) controls; space conditioning; cooking; building envelope; and commercial laundries.

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<sup>12</sup> [Con Edison Website](http://www.coned.com/energyefficiency/business.asp): <http://www.coned.com/energyefficiency/business.asp>

<sup>13</sup> State of New York Public Service Commission, Order Approving Certain Commercial and Industrial Customer Energy Efficiency Programs with Modifications, November 12, 2009

## **Consolidated Edison- Demand Response Programs**<sup>14</sup>

### **Residential/Commercial**

- Direct Load Control (Central Air-Conditioning Program) – Con Edison offers a free programmable thermostat that enables the user to control the temperature in their home or business manually or via the internet. The thermostat is provided at no cost and gifts of \$25 or \$50 are given to residential and business customers respectively. The thermostat enables Con Edison to adjust the air conditioner temperature at critical times. An override feature is included. NYSERDA supports this program as Con Edison as the aggregator/applicant under the Demand Response component, requiring Con Edison to enroll the aggregated load into the NYISO's ICAP/SCR program.

### **Commercial/Industrial**

- Distribution Load Relief Program – Con Edison offers incentives for temporary load reduction of at least 50kW. The voluntary option offers energy payments and the mandatory option offers energy and capacity payments. NYSERDA supports the voluntary option with meters only and supports the mandatory option with meters and/or offsetting the costs of enabling infrastructure.
- Commercial System Relief Program – Con Edison offers incentives for temporary load reduction of at least 50kW, facilities must be located in New York City. Incentives include payment for energy and capacity plus distribution adders depending on how many curtailment calls are made. NYSERDA supports this program offsetting the costs for meters and/or enabling infrastructure.
- Critical Peak Rebate Program –A 3.8 megawatt pilot program for all customer classes. Participants who reduce 25 kW or more will receive an end of year payment of \$1.50/kW-hr for reductions during events. NYSERDA supports the commercial program with meter incentives provided they enable at least 40 kW reductions.

## **New York State Electric and Gas and Rochester Gas & Electric Corporations**<sup>15</sup> –

### ***Non- Residential Commercial and Industrial Prescriptive Rebate Program***

NYSEG/RG&E propose a prescriptive rebate program for their non-residential electric and gas customers. The program is designed to serve commercial, industrial, institutional, and municipal customers with an electric load of less than 2 MW, although customers with demand of 2 MW or greater would also be eligible to participate (many of the same customers targeted by NYSERDA's EFP). Electric rebates would be available for: air conditioning, chillers, heat pumps, lighting and lighting controls, electric motors, and variable speed drives. Rebates have been proposed on the basis of the measure type and/or efficiency rating. Eligible heating (gas) equipment and controls would receive rebates on the basis of type, size, and efficiency rating.

### ***Non- Residential Commercial and Industrial Custom Rebate Program***

These proposed programs are directed toward commercial, industrial, institutional, and municipal customers with an electric load of less than 2 MW, although customers with load greater than 2 MW would also be eligible to participate. Similar to NYSERDA's EFP, the programs are designed to encourage customers to identify and implement energy efficiency improvements in their facilities. NYSEG/RG&E propose general categories of eligible measures for rebates that may include, but are not limited to: energy management systems, building thermal envelope upgrades, energy recovery systems and economizers, variable-speed air compressors, energy efficient process improvements, geothermal heating and cooling, day-lighting systems, infrared radiant heaters, steam traps, grain dryers, and heat-recovery systems. Rebates would be paid on the basis of either 50% of the incremental difference

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<sup>14</sup> [Consolidated Edison's Demand Response Programs Website](http://www.coned.com/energyefficiency/demand_response.asp) [http://www.coned.com/energyefficiency/demand\\_response.asp](http://www.coned.com/energyefficiency/demand_response.asp)

<sup>15</sup> [NYSEG and RG&E Websites](http://www.lookupstateny.com/assistance_rge2.htm): [http://www.lookupstateny.com/assistance\\_rge2.htm](http://www.lookupstateny.com/assistance_rge2.htm)

between the cost of a standard equipment measure and the comparable energy efficient equipment option or the amount necessary to reach a two-year equipment payback period in energy consumption savings, whichever is less.

### ***Business Energy Efficiency Assistance***

NYSEG and RG&E partner with NYSERDA on several programs to encourage energy efficiency. Under these NYSERDA programs, the applicant will be required to make a financial contribution of at least 33.3% to the total investment made. Through NYSERDA's Energy Audit Program, NYSEG and RG&E will provide up to 50% matching funds, (\$10,000 maximum) toward the total investment made as a result of an energy audit. Through either NYSERDA's Flexible Technical Assistance Program (Flex Tech) or New Construction Program, NYSEG and RG&E will pay up to 33.3% of the cost of a feasibility study or analysis, not to exceed \$20,000 per study/analysis. If the applicant decides to make investments as a result of a study or analysis, RG&E will provide up to \$50,000 toward the total investment made.

### **Orange & Rockland Utilities, Inc.<sup>16</sup>**

#### ***Commercial Existing Buildings Program***

This program would target existing commercial and industrial customers with a peak demand of over 100 kW for retrofit projects and incentives to avoid lost opportunities for installing cost-efficient measures at the time of equipment replacement or facility expansion. The program offers incentives for both prescriptive and custom energy efficiency measures that include, but are not limited to: interior and exterior lighting, HVAC equipment, refrigeration, retro-commissioning, high-efficiency customer-site transformers, water heating measures, and high efficiency kitchen equipment (many of the same measures eligible under NYSERDA's EFP). Incentives for custom measures include all cost-effective measures not offered prescriptively.

### **2.3.3 New York Independent System Operators (NYISO) Programs**

It is possible that participants in the Existing Facilities Program are eligible to participate in several demand-response programs offered by the NYISO. Awareness of and coordination with these programs potentially has many benefits for both end-users and the state. The NYISO has four Demand Response programs: the Emergency Demand Response Program (EDRP), the ICAP Special Case Resources (SCR) program, the Demand Side Ancillary Services Program (DSASP), and the NYISO's Day-Ahead Demand Response Program (DADRP). The programs can be deployed in energy shortage situations to maintain the reliability of the bulk power grid.<sup>17</sup>

- The Emergency Demand Response Program is designed to reduce power usage through the *voluntary* shutting down electrical end-uses (or turning on on-site electric energy generators) within businesses and large power users. Companies, mostly industrial and commercial, sign up to take part in the EDRP. The companies are paid by the NYISO for reducing energy consumption when asked to do so by the NYISO.
- Special Case Resources is a program designed to reduce power usage through the *mandatory* interruption of large electrical end uses within participating businesses and large power users' facilities. Companies, mostly industrial and commercial, sign up to become SCRs. The companies must, as part of their agreement, curtail power usage, usually by shutting down critical end uses when asked by the NYISO. In exchange, they are paid in advance for agreeing to cut power usage upon request.

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<sup>16</sup> [Orange & Rockland Website](http://www.oru.com/programsandservices/incentivesandrebates/): <http://www.oru.com/programsandservices/incentivesandrebates/>

<sup>17</sup> [NYISO Website](http://www.nyiso.com/public/products/demand_response/index.jsp): [http://www.nyiso.com/public/products/demand\\_response/index.jsp](http://www.nyiso.com/public/products/demand_response/index.jsp)

- The Demand Side Ancillary Services Program (DSASP) allows demand side resources to participate in the NYISO's Ancillary Services Markets for Regulation Service and Operation Reserves. For DSASP Reserve resources, there is a minimum 1 MW reduction, sustained for 1 hour, on a five-minute periodicity. For Regulation, the resource must be capable of a 1 MW reduction capable of Regulation response, supplying regulation service continually in both up and down directions for intervals in the scheduled hour, on a six-second periodicity.
- The NYISO's Day-Ahead Demand Response Program (DADRP) also allows energy users to bid their load reductions, or "negawatts", into the Day-Ahead energy market as generators do. Offers determined to be economic are paid at the market clearing price. DADRP allows flexible loads to effectively increase the amount of supply in the market and moderate prices.

Section 3: **KEY ELEMENTS SUMMARY**

Based on a review of relevant NYSERDA documents, below is a summary of some key elements of the Existing Facilities Program.

**3.1 Ultimate Goals:**

The Existing Facilities Program is part of NYSERDA’s Commercial/Industrial (C/I) sector program portfolio. The C/I sector portfolio is designed to address all SBC III & EEPS goals by promoting competitive markets for energy efficiency services and engendering widespread adoption of high-efficiency technologies. The market infrastructure and demand side goals for the broader C/I portfolio are listed in Table 5.<sup>18</sup>

**Table 5– Goals for NYSERDA’s C/I Programs**

Market Infrastructure/Policy	Demand-Side
Expanded delivery channels for energy efficiency and demand response services	Projects demonstrate persistent energy savings and provide other benefits to end-users
Larger, robust and sustainable market for energy efficiency services and products	Customers have reliable information on which to base energy-related decisions
Increased capacity of energy services companies to deliver quality projects that produce reliable benefits	Customers have confidence in energy savings estimates and value the energy efficiency and green building features of their projects
Increased number of firms with experience and confidence in delivering energy efficiency and peak load reduction measures	Access to energy efficiency services is improved for all types of customers including underserved customers

The Existing Facilities Program contributes directly to the achievement of these goals by encouraging ESCOs to expand their services and improve the credibility of ESCOs and other contractors servicing energy-using equipment through technical review and verification. Experience with EFP and the review and verification activities associated with many EFP projects should improve the number and the capacity of energy services firms to deliver quality projects that produce reliable results.

EFP contributes to demand side goals by providing incentives to commercial, industrial and institutional customers for projects that actually save energy and by providing technical review and verification activities that reduce risk to the end-user. Better services and measures offered by increasing numbers of well-qualified firms should result in improved access to energy efficiency services for all types of customers.

The program’s success will be measured through assessing the amount of leveraged funds, the number of customer projects, and in the energy and demand savings achieved. Additionally, EFP works to encourage applications from eligible customers and supports the installation of equipment and technology that allows end users to permanently reduce their demand at system coincident peak or to participate in NYISO Demand Response programs. These programs can involve registering callable load and/or participating in dynamic pricing programs. The activities supported by EFP are designed to reduce coincident peak demand, improve energy efficiency for commercial, industrial and institutional

<sup>18</sup> GDS Associates. *New York Energy Smart<sup>SM</sup> Business and Institutional Programs Sector-Level Logic Model Report*, May 2006.

customers, reduce operating expenses for customers, and provide a cleaner, healthier environment for all New York.

EFP outreach and incentives are intended to build market infrastructure and increase investment in demand response or peak demand reduction projects. EFP provides the technical and financial support that reduce the risk to end-users and offset the higher first cost associated with participation in demand response programs and installation of new technologies or equipment.

### **3.2 Market Barriers/Issues the Program Attempts to Address (“the Problem”)**

The program operates within the larger **New York Energy \$mart<sup>SM</sup>** portfolio designed to create market opportunities and maximize benefit for participants and society. To encourage participation, the Existing Facilities Program works to overcome a variety of market barriers including:

- Higher first cost associated with energy efficient options/undervaluing energy efficiency;
- Higher cost of doing business in the Con Edison utility territory;
- Information costs and lack of information about available technologies and expected savings;
- Uncertainty of savings, reliability, or performance;
- Lack of experience with performance contracting;
- Performance uncertainties on the part of both the consumer and the contractor; and
- Perceptions of risk due to uncertainty, lack of information and/or experience.

Barriers associated with the commercial, industrial and institutional sectors can be broken down into three general categories: barriers affecting the supply side, mid-market/infrastructure barriers, and barriers affecting the demand side market actors. Supply-side and mid-market/infrastructure barriers include business practices and policies that deter the development or delivery of energy-efficient products and services, or indicate an insufficient availability of or commitment to such energy efficient products and services. Demand-side barriers in the commercial and industrial sector primarily revolve around competing needs for capital, performance uncertainties, and information or search costs. .

*Existing Facilities Program Logic*

Table 6 lists specific barriers related to market actors (not ordered by priority) for the commercial, industrial, and institutional sector. An asterisk (\*) is used to identify those barriers directly addressed by EFP.

**Table 6. Commercial, Industrial and Institutional Sector Market Barriers and Actors**

Market Area	Barriers (Priority for Evaluation)	Market Actors
Supply side	S1* – Limited availability of energy efficiency equipment (low) S2* – Lack of demand for energy efficiency equipment (med-high)	Manufacturers and suppliers of energy using equipment
Market Infrastructure / policy	M1* – Information or search costs. Specifically, the lack of expertise among equipment salesmen and installers who are unable to provide the analysis required by commercial and industrial customers in choosing a higher efficiency option (low-med) M2* – Performance uncertainty. Limited experience with energy-efficient equipment, load management equipment, and energy monitoring equipment (med) M3* - Uncertainty about product performance and profit potential for providing energy efficiency services (med) M4 – Service unavailability. Limited availability of sub-consultants with training and experience necessary for efficient equipment/building techniques and optimum energy performance of efficient equipment/building techniques (med) M5* - Undervaluing energy efficiency and sustainability (med-high) M6 - Consultants unwilling to learn and conduct services outside of their specific trade (low) M7* - Lack of knowledge of real-time pricing and other load management options (med) M8* – Increased need for coordination with utilities and other program administrators (med-high)	Engineers and others capable of providing accurate information in an energy audit  Builders, Consultants, retailers, salesmen, and installation consultants  Sub-consultants and building trades
Demand side	D1* - Lack of awareness, knowledge and understanding of energy efficiency, and load management features, products and services (med-high) D2* - Information costs associated with understanding the energy related features and associated benefits (med) D3* - Competing needs for capital (higher first or incremental cost) (high) D4* - Lack of reliable information on energy-efficient choices and how they may apply to a given building or business (high) D5* - Resistance to new and/or innovative technologies (med- high, depending on technology) D6* - Performance uncertainties (uncertainty of savings) (med-high) D7* - Lack of knowledge of real-time pricing and other load management options (high) D8* – Confusion caused by overlapping NYISO, NYSERDA, and utility programs (high) D9 – Many downstate tenants are not sub metered and do not have their energy consumption effectively communicated on a monthly basis. (med – high) D10 – Similarly, many downstate tenants are on lease structures which may put them at odds with the property owner should they pursue energy efficiency. (med) D11* – Cost of doing business is higher in the downstate Con Ed utility territory. (high, but higher incentives try to help with this)	Commercial and industrial business owners and managers Purchasers General consultants hired to oversee renovations or remodels that include energy efficient equipment

\*indicates barriers that the Existing Facilities Program seeks to directly address

### **3.3 Targeted Market Actors**

The Existing Facilities Program targets ESCOs, building owners and lease holders in the existing commercial, industrial and institutional sectors, small businesses, including government facilities, multifamily buildings, and dairy farms. The Existing Facilities Program provides higher incentives in the Con Edison utility territory to offset the higher cost of doing business in the NYC metro area.

### **3.4 Existing Facilities Program Implementation Approach (“Activities”)**

NYSERDA’s Existing Facilities Program provides a number of activities that produce outputs that lead to short- and longer-term outcomes supporting the goals of the EEPS program.

These activities can be aggregated into four main areas:

- 1) Outreach activities;
- 2) Technical services;
- 3) Providing financial incentives and assistance; and
- 4) Quality assurance activities.

All of the EFP activities work to encourage applications from eligible customers and support the installation of quality energy efficiency projects that reduce summer peak demand and improve energy efficiency for commercial, industrial and institutional customers in New York. These investments should reduce operating expenses for customers and provide a cleaner, healthier environment for all New Yorkers.

EFP activities are directed at both market infrastructure and the demand side by providing incentives that encourage ESCOs and other market actors to promote energy-efficient solutions to customers and by providing the technical review and financial support that reduce the risk to end-users and offset the higher first cost associated with new, energy-efficient equipment.

**Table 7. Existing Facilities Program Activities**

<b>Outreach Activities</b>
<p>Promotional efforts (including presentations, e-mail communication, press releases, website information, case studies, and notices in industry newsletters) inform ESCOs and end-users of the program opportunity and incentives available</p> <p>Release of PONs (providing guidelines and application materials and informing the market of the incentives available and allowing end users and ESCOs to identify/submit projects)</p> <p>Development and distribution of marketing and educational brochures for posting on NYSERDA and NYISO websites</p> <p>Demand response workshops, websites, and other tools inform contractors and potential participants of the details of the program and demand response and dynamic pricing opportunities</p> <p>Presentations to trade groups and other marketing efforts, advertisements in trade journals, Heat Index Alerts and case studies</p>
<b>Technical Services</b>
<p>Deemed savings determined</p> <p>Criteria for performance-based technical study determined</p> <p>Technical consultants contracted with NYSERDA</p> <p>Criteria for M&amp;V requirements determined</p> <p>Annual measure review and analysis done to bring measures and incentive levels in line with the market</p>
<b>Financial Support</b>
<p>Incentives for performance based projects through Standard Performance Contract (outlining expected incentives)</p> <p>Prescriptive incentives for other qualified measures</p>
<b>Quality Assurance</b>
<p>Review of the Engineering Analysis (EA)</p> <p>Field verification of installed performance-based projects and review of M&amp;V reports</p> <p>Post inspection of installed projects</p>

### 3.5 Program Inputs and Potential External Influences

The ability of NYSERDA’s Existing Facilities to accomplish the outputs and outcomes likely to result in the program reaching its ultimate goals is dependent on the level and quality/effectiveness of inputs that go into these efforts. There are also external influences that can help or hinder the development of anticipated outcomes. Key Existing Facilities Program inputs and potential external influences are presented in Table 8 and Table 9. .

Specific outputs and outcomes anticipated for the Existing Facilities Program activities are shown in the logic diagram in Section 4: below. More information on these outputs, outcomes and associated measurement indicators can be found in Table 10. and Table 11 immediately following the diagram (Section 5: ).

**Table 8. Existing Facilities Program Inputs**

<b>Program Inputs</b>
<p>EEPS and other potential funding sources (existing SBC, GJGNY, and others)</p> <p>NYSERDA’s program staff resources and prior experience implementing SBC-funded programs targeted to commercial and industrial customers</p> <ul style="list-style-type: none"> <li>• NYSERDA’s credibility and relationship with key stakeholders, policy makers and key market actors</li> <li>• Staff experience implementing the <b>New York Energy \$mart<sup>SM</sup></b> Program</li> </ul> <p>Coordination with other NYSERDA programs</p> <ul style="list-style-type: none"> <li>• Relationship between this program and other NYSERDA programs (cross /coordination) (Including: Industrial and Process Efficiency Program, FlexTech, Business Partners, and Workforce Development Program)</li> </ul> <p>Existing awareness of NYSERDA among market actors</p> <ul style="list-style-type: none"> <li>• See Section 2.2.3for specific awareness levels</li> </ul> <p>Expertise of trade allies and contractors</p>

**Table 9. Existing Facilities Program Potential External Influences**

<b>External Influences and Other Factors</b>
<p>Changes in political priorities</p> <ul style="list-style-type: none"> <li>• Federal energy policies including energy related tax credits and the Federal Energy Independence and Security Act of 2007, American Recovery and Reinvestment Act of 2009</li> <li>• Perceptions of energy and global climate change issues</li> <li>• Codes and standards</li> </ul> <p>Weather and associated impacts on customer actions and energy bills</p> <p>Broad economic conditions that affect capital investment and energy costs (rapidly changing economic conditions)</p> <ul style="list-style-type: none"> <li>• Energy prices and regulation (changes in fuel and energy prices)</li> <li>• Perceptions of the value of “green” buildings and LEED</li> <li>• Activities of public and institutional purchasers and projects</li> </ul> <p>Competition</p> <ul style="list-style-type: none"> <li>• Internal- End-use customer competing priorities</li> <li>• External- Broader market and demand for provision and supply of EE services</li> </ul> <p>Activities of non-NYSERDA energy efficiency and renewable energy programs (See specific programs listed in Section 2.3.2)</p>

#### Section 4: **PROGRAM LOGIC MODEL DIAGRAM**

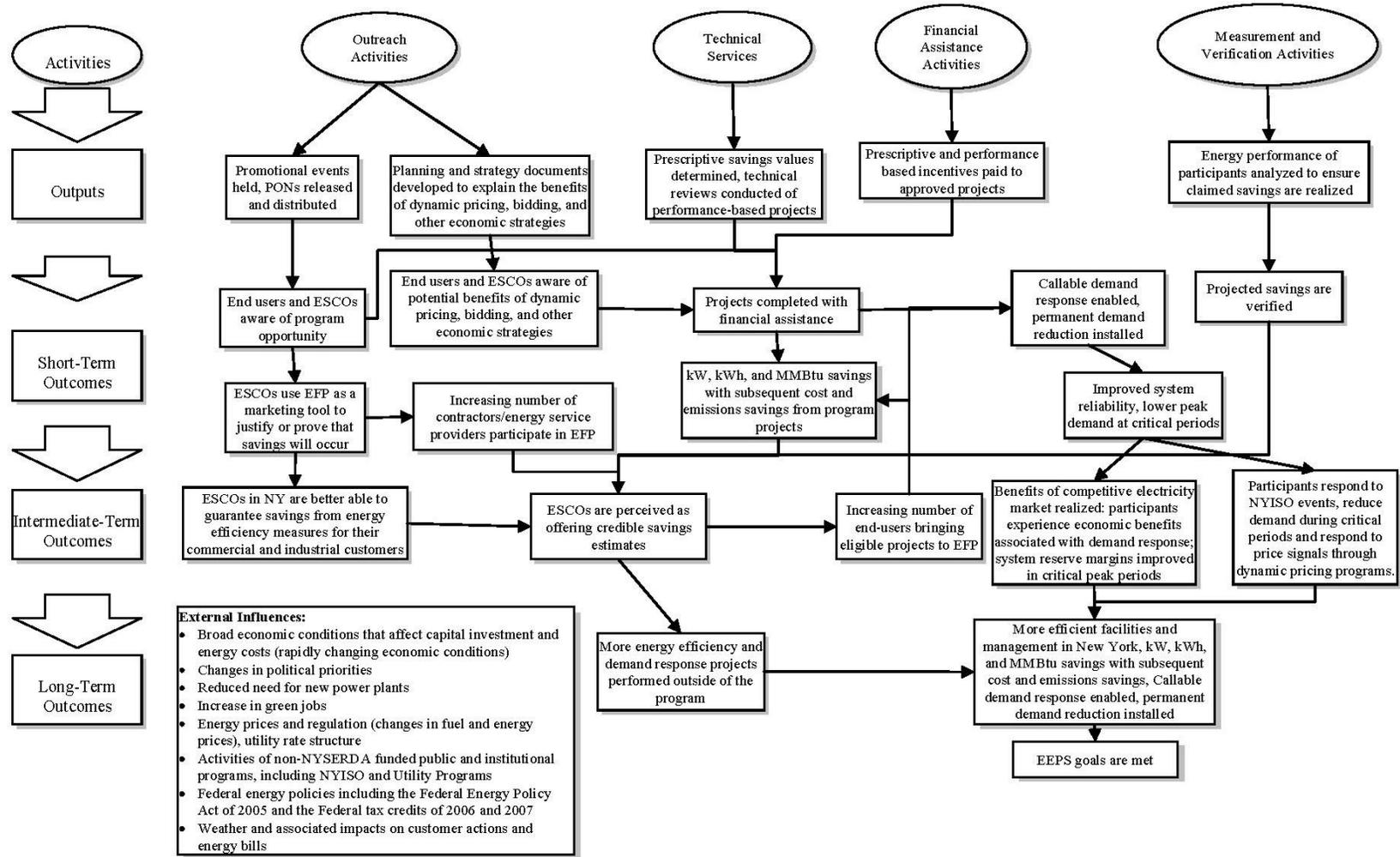
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The following page (**Error! Reference source not found.**) contains NYSERDA's Existing Facilities Program logic model diagram showing the linkages between activities, outputs and outcomes, and identifying inputs and potential external influences. The diagram presents the key features of the program. The logic diagram presented here is at a slightly higher level than the tables in this report, aggregating some of the outcomes, in order to provide a logic model that is easier to read. (Evaluation research should use the more detailed tables, in addition to the diagram, when examining the anticipated linkages and performance through the various outcomes.)

**Inputs:**

- SBC & EEPS funding
- NYSERDA's program staff and related project-specific contract staff and their related C/I expertise
- Relationship between this program and other NYSERDA programs (cross promotion/coordination)
- Trade ally and contractor expertise
- Staff experience implementing the New York Energy Smart<sup>SM</sup> program
- NYSERDA's credibility and relationship with key stakeholders, policy makers and key market actors
- Market knowledge

**Figure 1.  
Existing Facilities Program  
Logic Model Diagram  
November 2010**



## Section 5: **OUTPUTS, OUTCOMES AND ASSOCIATED MEASUREMENT INDICATORS**

It is important to distinguish between outputs and outcomes. For the purposes of this logic document, outputs are defined as the immediate results from specific program activities. These results are typically easily identified and can be counted; often by reviewing program records.

Outcomes are distinguished from outputs by their less direct (and often harder to quantify) results from specific program activities. Outcomes represent anticipated impacts associated with NYSERDA's program activities and will vary depending on the time period being assessed. On a continuum, program activities will lead to immediate outputs that, if successful, will collectively work toward achievement of anticipated short, intermediate and long-term program outcomes.

The following tables list outputs (Table 10. ) and outcomes (Table 11), taken directly from the logic model and associated measurement indicators. For each indicator, a proposed data source or collection approach is presented. When required, the need for baseline data is also noted. Items in this table should be prioritized and subsequently considered as potential areas for investigation as part of a formal program evaluation plan.

**Table 10. Existing Facilities Outputs, Associated Indicators and Potential Data Sources**

<b>Outputs (&lt;1 year)</b>	<b>Indicators</b>	<b>Data Sources and Potential Collection Approaches</b>
<b>Outputs from Outreach Activities</b>		
Promotional and press events held	Numbers of presentations, meetings, press releases by type/geographic region	Program records documenting promotional and press events held
PONs released and distributed	Number and types of PONs released and distributed	Website tracking PONs downloaded and requested
Planning and strategy documents developed to explain the benefits of dynamic pricing, bidding, and other economic strategies	Number and type of planning documents, strategy documents, and guidelines designed to explain and encourage participation in economic approaches to demand response	Program materials in regards to planning and strategy documents NYISO materials in regards to planning and strategy documents
<b>Outputs from Technical Services</b>		
Prescriptive savings values determined, technical reviews conducted of performance-based projects	Number of prescriptive and performance-based applications received Number and type of technical reviews conducted	Interviews with applicants and potential applicants Program records tracking prescriptive and performance-based applications received and technical reviews conducted
<b>Outputs from Financial Assistance Activities</b>		
Prescriptive and performance based incentives paid to approved projects	Number, type and value of incentives provide, by geography and size of project. Number of SPCs executed	Program database/records tracking prescriptive and performance based incentives paid to approved projects
<b>Outputs from Measurement and Verification Activities</b>		
Energy performance of participants analyzed to ensure claimed savings are realized	Number of post inspections conducted Percent of projects that meet post inspection expectations	Program records tracking number of post inspections conducted Program records tracking percent of projects that meet post inspection expectations

**Table 11. Existing Facilities Outcomes, Associated Indicators and Potential Data Sources**

Outcomes	Indicators	Data Sources and Potential Collection Approaches
<b>Short-Term (1-3 years) Outcomes</b>		
End users and ESCOs aware of program opportunity	Proportion of end users and ESCOs aware of EFP by geographic region or service territory	Market Surveys reporting awareness of program opportunities throughout the market
End users and ESCOs aware of potential benefits of dynamic pricing, bidding, and other economic strategies	Change in number of end users aware of the benefits of dynamic pricing, bidding and other economic strategies by geographic region  Change in number of ESCOs aware of potential benefits of dynamic pricing, bidding and other economic strategies, by geographic region	Surveys of targeted end-users and ESCOs
Projects completed with financial assistance	Change in the number and type of projects completed by size, cost, projected savings, type of measures installed and geography  Amount of funds leveraged from ESCOs and end-users to complete projects	Program database tracking projects completed with financial assistance
Callable demand response enabled, permanent demand reduction installed	Change in the number of projects and total available demand reduction created through the project by type (callable DR, permanent installed DR) and geographic region	Program records/database tracking callable demand response enabled and permanent DR installed  NYISO records tracking callable DR enabled and permanent demand reduction installed
Projected savings are verified	Proportion of projects meeting or exceeding projected energy and demand savings  Proportion of projects meeting or exceeding projected energy and demand savings in downstate Con Ed territory vs. Upstate	M&V program records analyzing projected energy and demand savings and impact evaluation results
ESCOs use EFP as a marketing tool to justify or prove that savings will occur	Proportion and change in the number of ESCOs including EFP in marketing materials  Proportion and change in the number of ESCOs reporting EFP as valuable to customers  Proportion and change in the number of ESCOs using EFP savings to sell projects  Change in number of end-users reporting confidence in EFP savings estimates	Review of marketing materials  Surveys with ESCOs analyzing marketing strategies  Interviews with end-users in regards to awareness of ESCO marketing strategies  Market study reporting ESCOs use of EFP as a marketing tool and end-users' confidence in EFP savings estimates
Increasing number of contractors/energy service providers participate in EFP	Change in the number of unique ESCOs participating in EFP and the geographic area and business type of customers they serve/Proportion of contractors acting as ESCOs	Surveys with ESCOs participating in EFP  Program records tracking number of unique ESCOs in EFP and the geographic area and business type of customers they serve  Market study reporting proportion of contractors acting as ESCOs
kW, kWh and MMBtu	Quantity of kW, kWh and MMBtu saved,	Impact Evaluation and M&V

Outcomes	Indicators	Data Sources and Potential Collection Approaches
savings with subsequent cost and emissions savings from program projects	resulting in reduced emissions associated with generation (lbs CO2 and other emissions reductions)	Studies verifying net kW, kWh and MMBtu saved
Improved system reliability, lower peak demand at critical periods	Improved system peak reliability and demand Peak demand at critical periods compared with baseline	Review of reports and studies released by/for NYISO regarding system peak and demand response resources reliability during critical peak periods
<b>Intermediate-Term (3-5 years) Outcomes</b>		
ESCOs in NY are better able to guarantee savings from energy efficiency measures for their commercial and industrial customers	Change in the number of ESCOs reporting an increased ability to guarantee and meet savings for customers	Interviews with end-users and ESCOs, Market studies reporting ECOSs ability to guarantee savings from energy efficiency measures
ESCOs are perceived as offering credible savings estimates	Increase in the number of end-users having confidence in ESCOs' savings estimates	Market studies of end-users and contractors to assess confidence in ESCOs' savings estimates
Increasing number of end-users bringing eligible projects to EFP	Change in the number of eligible projects being brought to NYSERDA's EFP	Program databases tracking number of applications and eligible projects
Benefits of competitive electricity market realized	Demand response aggregators exist ESCOs offer peak load reduction products and services	Survey of market actors (ESCOs and aggregators) offering demand response and peak load reduction services
Participants experience economic benefits associated with demand response	Change in the number of EFP participants reporting benefits from participation in demand response programs EFP participants continue to participate in NYISO programs EFP participants increase their participation in demand response programs	Survey of program participants designed to assess participant benefits, Market studies to assess changes in participation in demand response programs,
System reserve margins improved in critical peak periods	System peak reliability and demand	Review of reports and studies released by/for NYISO regarding system peak and demand response resources reliability during critical peak periods
Participants respond to NYISO events, reduce demand during critical periods and respond to price signals through dynamic pricing programs.	Change in the number of EFP participants reducing peak KW in different ISO programs and magnitude of peak reductions, by program type and geography	Impact evaluation of EFP DR program components Review of reports and studies released by/for NYISO regarding system peak and demand response resources performance

Outcomes	Indicators	Data Sources and Potential Collection Approaches
<b>Long-Term Outcomes (5+ years)</b>		
More energy efficiency and demand response projects performed outside of the program	<p>Number, types and size of energy efficiency and demand response projects performed outside of the program, by size and geography</p> <p>Program spillover (as calculated by Impact Evaluation team) including assessment of increased savings from energy efficiency and demand response services being offered by ESCOs without program subsidies</p>	<p>Market surveys of energy efficiency and demand response activity outside the program,</p> <p>Review of NYISO records and reports tracking demand response projects and associated performance</p>
More efficient facilities and management in New York	<p>Change in the percentage of buildings with capability to respond to demand response calls increases</p> <p>Change in the percentage of buildings with low Energy Use Index increases</p> <p>Change in the proportion of C/I building stock that is energy efficient</p>	Market Study of current practice in demand response and building energy use for NY State buildings
kW, kWh, MMBtu savings with subsequent cost and emissions savings	Change in the amount of energy and demand savings from all projects (program and non-program kW, kWh and MMBtu saved), and associated emissions reductions from avoided generation (lbs CO2 and other emissions reductions)	<p>Impact Evaluation Studies, M&amp;V activities reporting quantity of kW, kWh and MMBtu saved</p> <p>Market surveys reporting results of energy and demand savings from all projects (program and non-program)</p>
Callable demand response enabled and permanent demand reduction installed	Change in the total available demand reduction created both through the EFP and other non EFP activities in the market	<p>Program records/database tracking callable demand response enabled and permanent DR installed</p> <p>NYISO records tracking callable DR enabled and permanent demand reduction installed</p>
Program contributes to achievement of overall EEPS and SBC Commercial/Industrial portfolio goals	Documented contributions from EFP toward EEPS and SBC portfolio goals	<p>Review of results from impact evaluations (highlighting EE savings from EFP toward EEPS % reduction goals)</p> <p>Review of results from Market Characterization and Assessment reports regarding to assess program's contribution to SBC goal achievement</p>

## Section 6: **TESTABLE HYPOTHESES (RESEARCHABLE ISSUES) FOR EVALUATION EFFORT**

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Based on this program logic model assessment for NYSERDA's Existing Facilities Program, a number of researchable issues have been identified and are noted below. Some of these have been investigated and continue to be investigated through NYSERDA evaluation activities.

Research addressing these questions will help to validate the reasonableness of the associated theories and will help inform NYSERDA program staff of progress and potential areas for program enhancement and refinement.

Based on recognition of key underlying program hypotheses, the following issues are proposed for potential testing. These issues are grouped into short-, intermediate-, and long-term periods to represent when they are expected to become important or verifiable.

### Short Term:

- Are more energy efficiency and demand response technologies being used by EFP projects than in non-EFP projects? Does this lead to increased acceptance of technologies in the market place?
- What is the proportion of contractors who offer energy services? How many participate in EFP?
- Do end-users and contractor/ESCOs perceive EFP as a simple program for existing buildings?
- What is the most effective messaging approach to getting customers interested in demand response? Are there particular messages that work best in certain situations or with certain industries?
- Is program activity in regional parity with SBC & EEPS collections (...downstate vs. upstate)

### Intermediate Term:

- Does experience with the EFP and the review and verification activities associated with prescriptive and performance-based projects improve the capacity of energy services firms to deliver quality projects that produce reliable results?
- Is EFP contributing to a better perception of ESCOs and energy efficiency in the marketplace?
- Are an increasing number of project applications coming to EFP? If so, what factors do applicants cite for their participation?
- If a potential applicant has chosen not to participate in EFP, what are the reasons why?

### Long Term:

- Does the existence of and activities associated with EFP lead to changes in the ESCO market? Are increasing numbers of ESCOs active in New York?
- Is there an increased understanding or use of performance contracting? Are ESCOs expanding the number or diversity of services they offer?