

New York State Energy Research and Development Authority

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# NYSERDA's Energy Efficiency Portfolio Standard Program

Quarterly Report to the Public Service Commission

Quarter Ending December 31, 2013

February 2014



# NYSERDA's Promise to New Yorkers:

NYSERDA provides resources, expertise, and objective information so New Yorkers can make confident, informed energy decisions.

## **Mission Statement:**

Advance innovative energy solutions in ways that improve New York's economy and environment.

## **Vision Statement:**

Serve as a catalyst—advancing energy innovation and technology, transforming New York's economy, empowering people to choose clean and efficient energy as part of their everyday lives.

## **Core Values:**

Objectivity, integrity, public service, partnership, and innovation.

## Portfolios

NYSERDA programs are organized into five portfolios, each representing a complementary group of offerings with common areas of energy-related focus and objectives.

### **Energy Efficiency and Renewable Energy Deployment**

Helping New York State to achieve its aggressive energy efficiency and renewable energy goals – including programs to motivate increased efficiency in energy consumption by consumers (residential, commercial, municipal, institutional, industrial, and transportation), to increase production by renewable power suppliers, to support market transformation, and to provide financing.

### **Energy Technology Innovation and Business Development**

Helping to stimulate a vibrant innovation ecosystem and a clean-energy economy in New York State – including programs to support product research, development, and demonstrations; clean-energy business development; and the knowledge-based community at the Saratoga Technology + Energy Park® (STEP®).

### **Energy Education and Workforce Development**

Helping to build a generation of New Yorkers ready to lead and work in a clean energy economy – including consumer behavior, youth education, workforce development, and training programs for existing and emerging technologies.

### **Energy and the Environment**

Helping to assess and mitigate the environmental impacts of energy production and use in New York State – including environmental research and development, regional initiatives to improve environmental sustainability, and West Valley Site Management.

### **Energy Data, Planning, and Policy**

Helping to ensure that New York State policymakers and consumers have objective and reliable information to make informed energy decisions – including State Energy Planning, policy analysis to support the Regional Greenhouse Gas Initiative and other energy initiatives, emergency preparedness, and a range of energy data reporting.

# **Energy Efficiency Portfolio Standard Program**

*Final Report*

## **Quarterly Report to the Public Service Commission**

**Quarter Ending December 31, 2013**

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**New York State Public Service Commission**

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# NYSERDA Record of Revision

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# 1 Introduction

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This quarterly report reflects progress on Energy Efficiency Portfolio Standard (EEPS) Program evaluation activities administered by the New York State Energy Research and Development Authority (NYSERDA). This report contains summaries of recently-completed evaluations and updates on evaluation recommendations and status through December 31, 2013. Information contained within this report comports with the guidance received from the New York State Department of Public Service (DPS) and discussed by the EEPS Evaluation Advisory Group (EAG) in July 2012.

## 2 Evaluation Reports Completed

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NYSERDA finalized the following evaluation contractor reports in the fourth quarter of 2013:

Commercial and Industrial Existing Facilities Sector Nonparticipant Spillover and Market Effects Study, Energy Resource Solutions Inc, December 2013.

See Appendix A of this report for a high-level summary of each study listed. The full evaluation reports are available on NYSERDA's website.

### 3 Evaluation Status Update

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Table 3-1 and Table 3-2 provide the anticipated schedule and status of current and upcoming impact, process, and market evaluation activities by program. As applicable, table notes provide further clarification and information about study timing. Planned evaluation projects and timing may change based on input from internal and external stakeholders, and program progress. Likewise, evaluation project schedules are subject to change based on progress in administering the evaluation studies themselves. Future quarterly reports will highlight any timeline revisions. Timeline revisions made this quarter are designated by cell shading. PY denotes program year and Q denotes quarter.



**Table 3-1. Impact Evaluation Schedule and Status**

EEPS Program	Impact Evaluation Schedule					
	Detailed Evaluation Plan Submittal	Project Kick-off	Data Collection Complete	Draft Report	Final Report	Notes
Industrial & Process Efficiency (Phase 2)	Completed	Completed	Q2 2014	Q3 - 2014	Q3/Q4 - 2014	Pre-installation evaluation advisement is ongoing. DPS approved early Measurement & Verification (M&V) field work which is nearly complete. Draft work plan, including attribution approach, under development.
Existing Facilities	Early 2014	TBD	TBD	TBD	Late 2014 - Early 2015	Detailed evaluation plan and work plan in parallel development.
Agriculture	Q1 2014	TBD	TBD	TBD	TBD	Evaluation planning underway.
New Construction	Completed	Completed	TBD	TBD	TBD	Sampling underway.
Agriculture Disaster	Completed	Completed	Completed	Q1 - 2014	Q1 - 2014	Drafting of final report in progress.
Flex Tech	Completed	Completed	Q4 2014	Q2 2015	Q3 2015	Work plan in development. Interim report Q4 2014
Non-Participant Spillover Study	Completed	Completed	Completed	Completed	Completed	Report finalized.
Multifamily Performance Program	Completed	Completed	Completed	Q2 - 2014	Q2 - 2014	All site visits completed. Individual site reports being drafted.

**Table 3-1 continued**

EEPS Program	Impact Evaluation Schedule					
	Detailed Evaluation Plan Submittal		Detailed Evaluation Plan Submittal		Detailed Evaluation Plan Submittal	
Point of Sale Lighting	Completed	Q3 - 2012	Q3 - 2013	Q4 - 2013	Q1 - 2014	Preliminary results from several primary data collection efforts were submitted at the end of Q2 2013. Data collection is complete. Draft comprehensive report submitted in December 2013. Hours Of Use (HOU) analysis still underway with draft planned for early Q1 2014.
EmPower New York	Completed	Completed	Phase 2 TBD	Phase 2 TBD	Phase 2 TBD	Phase 1 billing analysis completed – draft results memo issued and in review. Phase 2 draft work plan being reviewed.
Home Performance with ENERGY STAR®	Completed	Phase 2 Q1 - 2014	Phase 2 TBD	Phase 2 TBD	Phase 2 TBD	Phase 1 billing analysis completed – draft results memo issued and in review. Phase 2 draft work plan in development.
New York ENERGY STAR® Homes	Q1- 2014	TBD	TBD	TBD	2015	There have been multiple program changes which have had substantial impact on the Program. Research is underway to determine on when sufficient time has lapsed to provide evaluation results that will be of value to the Program. Previous impact evaluation of PY 2007 - 2008 completed in September 2012.

**Table 3-2. Process and Market Evaluation Schedule and Status**

EEPS Program	Process and Market Evaluation Schedule					
	Detailed Evaluation Plan Submittal	Project Kick-off	Data Collection Complete	Draft Report	Final Report	Notes
Existing Facilities	Q1-2014	TBD	TBD	TBD	2015	Last process evaluation completed in February 2012. Last market evaluation completed in September 2012.
Agriculture	Q1-2014	TBD	TBD	TBD	2016	Now expected to be a separate evaluation from Existing Facilities.
New Construction	Completed	Q1 - 2013	Q3 - 2013	Q4 - 2013	Q1 - 2014	Work plan and surveys approved and in progress. Market characterization data analysis underway.
Agriculture Disaster	Q4 - 2011	Q4 - 2011	Q3 - 2012	Q3 - 2012	Q3 - 2012	Previous evaluation completed in October 2012. No other evaluations planned or required.
FlexTech	Completed	Q2 - 2013	Q4 - 2013	Q1 - 2014	Q2 - 2014	Last market evaluation completed in August 2011. Study planned in 2012-2014 is a process evaluation only. Benchmarking was removed from this evaluation as there were no Benchmarking activities conducted.
Multifamily Performance Program	Completed	Q1 - 2013	Q4 - 2013	Q1 - 2014	Q2 - 2014	Work plan approved, data collection completed and analysis in process.
Point of Sale Lighting	Completed	Q3 - 2012	Q3 - 2013	Q4 - 2013	Q1 - 2014	Preliminary results from several primary data collection efforts were submitted at the end of Q2 2013. Data collection is complete. Draft comprehensive report submitted in December 2013. Hours of Use (HOU) analysis still underway with draft planned for early Q1 2014.

**Table 3-2 continued**

EEPS Program	Process and Market Evaluation Schedule					
	Detailed Evaluation Plan Submittal	Project Kick-off	Data Collection Complete	Draft Report	Final Report	Notes
EmPower New York	Completed	TBD	TBD	TBD	TBD	Last process evaluation completed in July 2010.
Home Performance with ENERGY STAR®	Completed	Q2 - 2013	Q3 - 2014	Q3 - 2014	Q4 - 2014	Work plan approved, data base analysis occurring, data collection instruments in development, staff interviews underway.
New York ENERGY STAR® Certified Homes	Q1 - 2014	TBD	TBD	TBD	2015	NYSERDA intends to develop work plans in the first half of 2014 for near-term activities that will best inform the next round of programs.
C&I Natural Gas Market Characterization	Completed	Completed	Completed	Q2 - 2012	Q3 - 2012	

### 3.1 New Recommendations

Recommendations generated from the recently-completed (Quarter 4 of 2013) evaluation study described in Section 2 (Evaluation Reports Completed) are listed in Table 3-3 along with their status. The status of each recommendation is characterized as rejected, implemented, or pending based on input from NYSERDA program and evaluation staff. Rejected recommendations will not be implemented by NYSERDA. Implemented recommendations have been incorporated into the NYSERDA programs. Pending recommendations are still awaiting a decision on implementation or rejection. In addition to characterizing new recommendations as rejected, implemented or pending, NYSERDA’s program and evaluation staff’s response and rationale for those characterizations is also provided.

**Table 3-3. New Recommendations as of December 31, 2013**

Program	Source of Recommendation (Contractor, Report Title, Date)	Recommendation	Status (Implemented, Pending or Rejected)	Program Implementer Response to Recommendation and Adoption Decision Rationale
Existing Facilities Commercial/Industrial Sector	Energy Resource Solutions, Inc., Commercial and Industrial Existing Facilities Sector Nonparticipant Spillover (NPSO) and Market Effects Study, December 2013	When establishing program baseline assumptions, the influence of large market actors, including national chains and franchises, should be taken into consideration.	Pending	NYSERDA received these final recommendations in December 2013 and will include a response in next quarter’s report
		NYSERDA should support updating the NYS energy code at least every three years.	Pending	NYSERDA received these final recommendations in December 2013 and will include a response in next quarter’s report
		It may be possible for NYSERDA to identify opportunities to leverage corporate sustainability and efficiency policies and increase the positive influence these appear to be having on the market.	Pending	NYSERDA received these final recommendations in December 2013 and will include a response in next quarter’s report

**Table 3-3. continued**

Program	Source of Recommendation (Contractor, Report Title, Date)	Recommendation	Status (Implemented, Pending or Rejected)	Program Implementer Response to Recommendation and Adoption Decision Rationale
		<p>The Impact Evaluation Team also recommends national evaluations and baseline studies. The cross-state study provided indications that some chains and franchises may be influencing the market for efficient technology. Ignoring the higher efficiency baseline for these projects could result in the overestimation of program savings. Supporting research at the national level in this area could be an important step toward addressing this issue.</p>	<p>Pending</p>	<p>NYSERDA received these final recommendations in December 2013 and will include a response in next quarter's report</p>

## 4 Pending Recommendations

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Recommendations from previous evaluations that have not yet been characterized as implemented or rejected in prior reporting are listed, by program, in Table 4-1 through Table 4-7. These tables also provide NYSERDA program staff's response and rationale for the characterization. Note this section does not cover all EEPS programs that NYSERDA administers; only programs with recommendations not previously reported as implemented or rejected are included in these tables.

**Table 4-1. Pending Recommendations: Existing Facilities Program**

Source of Recommendation (Contractor, Report Title, Date)	Recommendation	Status (Implemented, Pending or Rejected)	Program Implementer Response to Recommendation and Adoption Decision Rationale
<b>Existing Facilities Program (EFP)</b>			
Megdal and Associates Impact Evaluation Team, Energy and Resource Solutions Lead Investigators, September 2012	Apply a common algorithm for tracking demand savings – The high variance in the peak demand savings realized by EFP stems from inconsistencies in algorithms and requirements regarding peak demand calculations. Evaluators recommend that program staff consider requiring that peak demand be calculated in a consistent fashion across projects. Tracking demand savings using algorithms similar to those applied in the evaluation would ensure more consistent peak demand realization rates (RRs) in future evaluations.	Pending	EFP is currently working to update its methodology for calculating peak demand impacts to be consistent with algorithms used in this impact evaluation and to be in compliance with the Technical Manual. Once a new methodology is developed, EFP staff and technical reviewers will be trained on its consistent use.
	Incorporate heating, ventilation, and air conditioning (HVAC) into lighting analysis – The evaluation results showed that the heating and cooling effects of reduced lighting load and run-time hours can be significant, especially in facilities such as data centers with high cooling loads. Such interactive effects were not consistently incorporated into program savings analysis. Evaluators recommend that EFP consider including these impacts in future project savings estimates. The choice to do so for tracking purposes does not necessarily mean that the same choice must be made for the purposes of demand-based incentive calculations.	Pending, with modifications	The determination of site-specific interactive effects of lighting with HVAC systems is both time and resource intensive relative to its accuracy and resulting effect on program-reported impacts. Program staff and Evaluation staff will confer to develop a methodology for applying an adjustment for interactive effects between lighting and HVAC as part of future impact analysis.  Evaluation contractor is considering methods to account for interactive effects.



**Table 4-1 continued**

<b>Source of Recommendation (Contractor, Report Title, Date)</b>	<b>Recommendation</b>	<b>Status (Implemented, Pending or Rejected)</b>	<b>Program Implementer Response to Recommendation and Adoption Decision Rationale</b>
<b>Existing Facilities Program (EFP)</b>			
	<p>Set up a data request mechanism from responsible interface parties (RIPs) for future demand response (DR) evaluations – Acquiring the DR measure data was challenging and required a lot of calendar time and an unexpected level of “volunteer” work by RIPs. It likely would save effort for all if NYSERDA could persuade the RIPs to deliver to NYSERDA the same baseline and performance data they deliver to the New York Independent Systems Operator (NYISO) at the time they send it to the NYISO. Alternately, evaluators and program staff could work with RIPs to establish a different data set and template for routine delivery.</p>	<p>Pending, with modifications</p>	<p>Program staff believes that requiring all incentive recipients to submit DR data routinely would be detrimental to program participation, as the data are sensitive. However, EFP will incorporate into the program language an agreement stating that participants will comply with NYSERDA’s request for event and test performance data if their project is selected in an evaluation sample. Program staff also proposes to work together with Evaluation Staff and contractors earlier in the impact evaluation development to secure the data needed directly from participating DR providers.</p>

**Table 4-1 continued**

Source of Recommendation (Contractor, Report Title, Date)	Recommendation	Status (Implemented, Pending or Rejected)	Program Implementer Response to Recommendation and Adoption Decision Rationale
<b>Existing Facilities Program (EFP)</b>			
	<p>Create and track premise identifiers (IDs) – During the evaluator’s population frame development process, time was required to manually screen the population for recent marketing department, FlexTech impact evaluation, process evaluation, and market characterization research contacts with EFP representatives, to check for multiple staged projects at a single site and to identify multi-site projects. Site names, addresses, and contact names were used in lieu of a common premise identifier. While this was a manageable exercise for the Phase 1 population size of 70 projects, the exercise will be more daunting as the program expands in the future. To help evaluators and likely aid program administrators as well, evaluators recommend that NYSERDA establish unique premise IDs that are constant across programs and that remain constant for a facility in the event of name changes or other turnover. The use of premise IDs is not uncommon in the utility environment, whereby a portion of each customer’s account number can be the unique premise ID number, and the suffix of the number is the only thing that changes with alterations in account ownership. It is conceivable that NYSERDA could use the utility companies’ premise IDs.</p>	<p>Pending</p>	<p>This recommendation will be researched and implemented by NYSERDA at the organization level.</p>

**Table 4-1 continued**

Source of Recommendation (Contractor, Report Title, Date)	Recommendation	Status (Implemented, Pending or Rejected)	Program Implementer Response to Recommendation and Adoption Decision Rationale
<b>Existing Facilities Program (EFP)</b>			
	<p>Aggressively involve the program staff in site recruitment – Recruitment for participation in evaluation activities was more difficult for EFP than for other NYSERDA C&amp;I impact evaluations (FlexTech, Industrial and Process Efficiency, New Construction). Including 10% to 20% backups from the non-census strata in the initial recruitment will help eliminate the late scramble to recruit the backup sites and increase the evaluation participation rate.</p>	Pending	<p>Program staff has requested to be involved early in the process of site recruitment and they will be provided a list of the projects that are in the sample as soon as it is available.</p>
	<p>Use a 0.50 error ratio in the next sample design – The sample design for this evaluation assumed an error ratio of 0.50 on the electric energy savings realization rate (RR). The final calculated error ratios were 0.58 Downstate, 0.46 Upstate, and 0.49 overall. The error ratio on the permanent demand savings RRs was 0.58 for the same projects. Presuming energy savings remains the primary focus and basis of sample designs, 0.50 is a valid assumption to use for electric projects.</p>	Implemented	<p>The evaluation plan has been drafted and utilizes the recommended error ratio of 0.5 for the electric savings sample design. Natural gas measures were not previously evaluated. Because the gas program is relatively new, a slightly more conservative value of 0.6 was used in the design of the natural gas savings sample design.</p>

**Table 4-1 continued**

Source of Recommendation (Contractor, Report Title, Date)	Recommendation	Status (Implemented, Pending or Rejected)	Program Implementer Response to Recommendation and Adoption Decision Rationale
<b>Existing Facilities Program (EFP)</b>			
	<p>Investigate and develop a more reliable method for the estimation of participant inside spillover (ISO) and outside spillover (OSO) for energy efficiency and OSO for demand response - The spillover (SO) rates derived in this evaluation use the same method and survey questions as those in past evaluations. The final ISO and OSO estimates end up being based upon a small number of respondents (after dropping those that report no OSO). The net-to-gross ratio (NTGR) can have a substantial effect on net savings and additional evaluation efforts are needed to reduce the uncertainty in many of its components, particularly in measuring spillover. Surveys used to gather data for SO estimation need to include SO-respondent quotas when possible. Additional validity checks need to be included regarding items that act as multipliers within the calculation formulas.</p>	Implemented	<p>Expanded and rigorous methods to sample, investigate, quantify, and verify SO are included in NYSERDA's Detailed Evaluation Plan; and consequently will be the evaluators' approach in the upcoming evaluation.</p>

**Table 4-1 continued**

Source of Recommendation (Contractor, Report Title, Date)	Recommendation	Status (Implemented, Pending or Rejected)	Program Implementer Response to Recommendation and Adoption Decision Rationale
<b>Existing Facilities Program (EFP)</b>			
	<p>Perform SO estimation work within a design that gives full consideration to conducting related market effects studies and follow-up verification studies for SO surveys - This may mean a timeline with staging of different research elements relating to participant ISO, participating vendor SO, and nonparticipant spillover (NPSO), all within a context of market change and program-induced market effects. Significantly more resources will be needed to conduct this level of research into SO and market effects.</p>	Implemented	<p>The Detailed Evaluation Plan explicitly presents the new spillover approach. The work plan, currently in development, will specifically address the market effects question.</p> <p>The Impact and Process/Market Evaluation teams will closely coordinate efforts to ensure efficient and comprehensive coverage of researchable questions.</p>
	<p>Investigate alternative methods for estimating free ridership (FR) – The Program has recently initiated a more concentrated approach to fostering lasting relationships with large key account customers. Consequently, future evaluations could benefit from research into other potential methods for determining FR that better consider program long-term engagement with key account customers.</p>	Pending	<p>The Impact Evaluation Team will investigate methods used in other jurisdictions that provide credit for long-term program influence caused, in part, by relationships with large key account customers. Such methods, if warranted, will be used where long-term program influence is relevant.</p> <p>The Impact Evaluation Team will address this in the work plan and more fully identify methods in the attribution package (i.e., surveys and the approach for identifying and gathering data).</p>

**Table 4-1 continued**

Source of Recommendation (Contractor, Report Title, Date)	Recommendation	Status (Implemented, Pending or Rejected)	Program Implementer Response to Recommendation and Adoption Decision Rationale
<b>Existing Facilities Program (EFP)</b>			
<p>Navigant Consulting, Existing Facilities Program: Market Characterization and Assessment Summary, June 2012</p>	<p>Seek to increase the number of quality firms engaging end users in performance-based EFP projects. In so doing, the program can drive additional competition among firms working on performance-based projects, potentially leading to higher project volumes, lower costs to end users, or new competitive offerings from service providers (e.g., new approaches to project financing).</p>	<p>Pending</p>	<p>NYSERDA's marketing work continues into 2014 to include a targeted effort directed to participating and non-participating service providers to increase participation among end use customers.</p> <p>To increase direct energy services companies (ESCOs) outreach efforts, program staff has developed a prioritized list of ESCOs and an ESCO relations role has been developed. Staff working to meet regularly with priority ESCO participants to discuss how to increase performance-based work between EFP and the ESCO, and how EFP's design and procedures can be optimized.</p>
	<p>Convince new firms to learn about and undertake projects supported by performance-based incentives by marketing the program's perceived benefits to service providers. Specifically, program participation is an indicator of a firm's advanced capabilities, commitment to maximizing energy savings, and overall higher-quality services. An anticipated increase in demand for high-quality energy efficiency services will create particular opportunities for firms with past performance-based project experience while attracting new firms to attempt performance-based projects.</p>	<p>Pending</p>	<p>NYSERDA's marketing effort continues into 2014 and will reflect a research-based approach to identifying and highlighting relevant value messages that increase levels of engagement and interest in NYSERDA performance-based programs among service providers.</p> <p>Efforts to re-engage these ESCOs and grow the service provider market are about 65% complete.</p>

**Table 4-1 continued**

Source of Recommendation (Contractor, Report Title, Date)	Recommendation	Status (Implemented, Pending or Rejected)	Program Implementer Response to Recommendation and Adoption Decision Rationale
<b>Existing Facilities Program (EFP)</b>			
<p>Research Into Action, Process Evaluation, February 2012</p>	<p>Focus on providing incentive application status updates to service providers most affected by processing delays. Consider providing automated project status updates to free up program staff resources for other purposes. Support service providers by publicizing the typical length of time for each stage of NYSERDA review.</p>	<p>Pending</p>	<p>NYSERDA's effort to provide customer and service providers with an expected timeline for each stage of EFP's business process and 85% completed.</p> <p>NYSERDA is currently integrating its database systems and revising its business process. The new system is planned to include enhanced workflow and applicant communications that will allow service providers access to project status and automate communications at key business process tollgates. To better manage the expectations of its customers and service providers, NYSERDA is also developing:</p> <ul style="list-style-type: none"> <li>• A description of the EFP verification process at each toll gate: Energy Analysis Review, which includes the pre-installation inspection, Project Installation Review and Measurement and Verification (M&amp;V)</li> <li>• A one-page pictorial summary of the verification process that includes a description of deliverables and an estimated timeframe for each toll gate review</li> <li>• These one-page descriptions will be reviewed by Marketing, attached to each contract, handed out at kick-off meetings, and posted on the EFP website.</li> </ul>

**Table 4-2. Pending Recommendations: New Construction Program**

Source of Recommendation (Contractor, Report Title, Date)	Recommendation	Status (Implemented, Pending or Rejected)	Program Implementer Response to Recommendation and Adoption Decision Rationale
<b>New Construction Program (NCP)</b>			
Megdal & Associates – Led by Cx Associates, New Construction Program, Impact Evaluation Report for Program Years 2007 – 2008, September 2012	For projects and measures with large savings, consider including more rigorous commissioning and validation protocols.	Pending (Investigate options for expanded measurement and verification and/or retro/Cx incentives)	Expanded M&V and/or retro-commissioning incentives are still under review. NYSERDA will coordinate with finalization and release of the new State Energy Code, which is delayed until summer 2014. Additional coordination may be necessary depending upon DPS guidance to be provided as a result of the Commission’s December 2013 Order <sup>a</sup> Pre-modeling work for a second project is underway. (Before installation, evaluation contractor discusses energy modeling baselines with staff and Technical Assistants).
	The Impact Evaluation Team requests NYSERDA’s support in enabling the evaluators to work with building management to obtain access to residential units and resident utility releases. This support will increase the effectiveness of the outreach effort, control evaluation costs, and reduce the elapsed time for obtaining this information.	Pending	Review of recent program participants indicates that multifamily projects continue to participate in NCP. As the next round of impact evaluation proceeds the team will work to address this issue.
<p>a. Case 07-M-0548. <i>Order Approving EEPS Program Changes</i>. Issued and effective December 26, 2013</p>			



**Table 4-2 continued**

Source of Recommendation (Contractor, Report Title, Date)	Recommendation	Status (Implemented, Pending or Rejected)	Program Implementer Response to Recommendation and Adoption Decision Rationale
<b>New Construction Program (NCP)</b>			
	<p>Consider conducting a market effects study for the NCP and NYSERDA’s overall impact on the commercial, industrial and institutional new construction markets in New York. The market effects methods need to attempt to include NCP impacts on market structure and operation that may not be directly identifiable by most market participants but influences the operation of the market since NCP interventions. If SO estimation still occurs or is used, future evaluations must ensure that there is not a double counting or overestimation between market effects and SO. Significantly more resources will be needed to conduct an evaluation that provides reliable and rigorous estimates of market effects.</p>	Pending	<p>The completed detailed evaluation plan includes a possible market effects study in 2015. When the slated spillover research is complete, the methods and results will be reviewed by New York State Department of Public Service (DPS), NYSERDA, and the Impact Evaluation Team to determine whether additional research into market effects is needed or whether the market effects have been captured using the new spillover methods. NYSERDA is exploring a market effects protocol for several of its programs.</p>
<p>RIA, New Construction Program (NCP) Process Evaluation, December 2011</p>	<p>While NCP has made substantial progress developing an advanced analysis tool to foster deeper, cost-effective savings for smaller buildings, further steps are needed to finalize and implement the package. Completing this analysis tool should be a high priority, given the surge in smaller building applicants.</p>	Pending	<p>NCP continues to monitor the New Buildings Institute Core Performance Guide (CPG) version 3 and is also monitoring proposed changes to the NYS Energy Code which is planned for release in summer 2014. Implementation into NCP may also be impacted by potentially significant changes to a future round of EEPS funding. Until the changes are finalized, this task remains a low priority.</p>

**Table 4-3. Pending Recommendations: Industrial and Process Efficiency Program**

Source of Recommendation (Contractor, Report Title, Date)	Recommendation	Status (Implemented, Pending or Rejected)	Program Implementer Response to Recommendation and Adoption Decision Rationale
<b>Industrial and Process Efficiency (IPE) Program</b>			
Megdal & Associates – Led by ERS Industrial and Process Efficiency Program: Impact Evaluation Report for Program Years 2009 – 2010, August- September 2012	Reassess non-energy impacts (NEIs) in the next evaluation.	Pending	NYSERDA plans to continue with the assessment of NEIs, similar to the Phase 1 study.
RIA, Industry & Process Efficiency (IPE) Process Evaluation, November 2011	The program would benefit from database and application processing upgrades for staff to improve project management, including implementing electronic signatures and better integration of NEIs and Buildings Portal.	Pending	The Energy Efficiency Services (EES) Operations Unit continues to address changes needed to the multiple database processes currently in place. EES Operations and the Performance Management and Evaluation Systems (PMES) department are integrating staffing and responsibilities to optimize reporting, database, and processing upgrades.  NYSERDA will be implementing a single common system that has consistent controls and data governance for all programs. NYSEDA will also be implementing data quality and data display tools on top of these systems that will help us improve our quality and governance. These new systems will help us to integrate systems as well as improve business processes.

**Table 4-4 Pending Recommendations: New York ENERGY STAR Homes Program**

Source of Recommendation (Contractor, Report Title, Date)	Recommendation	Status (Implemented, Pending or Rejected)	Program Implementer Response to Recommendation and Adoption Decision Rationale
<b>New York ENERGY STAR® Certified Homes Program (NYESCH)</b>			
Megdal and Associates, New York ENERGY STAR Homes Impact Evaluation, September 2012	Consider the establishment of a separate development track for projects that are required to meet higher baseline standards. Some developers may be working under mandates to build toward certain level of efficiency (e.g., EPA ENERGY STAR) to comply with federal directives or satisfy funding requirements set by certain lenders and/or government agencies (e.g., HUD, NY state-housing agencies). This separate track may utilize a baseline (UDRH) that is different than the UDRH used for more traditional projects. This track may also have different program incentive structure that encourages certain end uses or certain savings goals over the baseline for this track.	Rejected	Without the availability of data regarding as-built or “baseline” for residential new construction practices, a reliable means to determine the quality of construction and energy efficiency performance which occurs without program oversight is not available. This concern is inclusive of compliance with state energy code and standards published by various third parties. Program management considered this recommendation and do not believe implementation is warranted at this time. Once the results of the Residential Statewide Baseline Study are available, the program may reconsider this recommendation.
	Consider alternative strategies for estimating net and market effects. The self-report approach used in this evaluation suggests that market transformation may already be well underway.	Pending	Planning for the evaluation of this program is currently underway. As the next round of impact evaluation proceeds, the team will work to address this issue.
	Consider excluding the estimation of homeowner inside spillover in future impact evaluations, unless the homeowner surveys are conducted for other evaluation purposes.	Pending	Planning for the evaluation of this program is currently underway. As the next round of impact evaluation proceeds, the team will work to address this issue.

**Table 4-5. Pending Recommendations: Home Performance with ENERGY STAR**

Source of Recommendation (Contractor, Report Title, Date)	Recommendation	Status (Implemented, Pending or Rejected)	Program Implementer Response to Recommendation and Adoption Decision Rationale
<b>Home Performance with ENERGY STAR®</b>			
Megdal and Associates, Home Performance with ENERGY STAR Impact Evaluation, September 2012	Examine methods for estimating claimed lighting and water heater fuels switching for electricity savings. Further, envelope measures and programmable thermostats for natural gas savings claims should be examined.	Partially implemented 2013	During the report period of 2007-2008, the comparison of actual to modeled consumption was optional. Program contractors are currently required to “true-up” energy models to weather normalized consumption.  Analyses are underway to examine how measure savings are estimated. The estimated completion date is Q1 2014.
	Consider database and data collection enhancements to the Program tracking database as described below. This list of potential enhancements is lengthy and may require substantial time and resources to implement.  The items below are listed in order of importance:		
	Continue to improve methods to increase the reliability of the utility identification and account numbers.	Pending	Best practice would be to ensure accuracy of utility information collected by the household and utilize an ESCO Electronic Data Interface with utilities or a similar product to assure accurate utility account information. NYSERDA’s PMES group continues efforts to secure utility data. Additionally, the PSC’s December 26, 2013 Order <sup>a</sup> on the future of EEPS programs acknowledged that a clearer protocol for sharing utility customer information with NYSERDA is needed and directed NYSERDA and the utilities, facilitated by DPS staff as needed, to develop and present for approval a comprehensive plan for potential sharing of utility data with NYSERDA.

**Table 4-5 continued**

Source of Recommendation (Contractor, Report Title, Date)	Recommendation	Status (Implemented, Pending or Rejected)	Program Implementer Response to Recommendation and Adoption Decision Rationale
<b>Home Performance with ENERGY STAR®</b>			
	Ensure data integrity by improving quality control and error checking procedures for the Program database.	Implemented	Quality control efforts are in place and refinements are on-going.
	Consider adding more detailed household information to the primary program database, such as house type, ownership status, number of occupants, adults and adults 65 and older living in the home most of the year, age of house, presence of central air conditioning (CAC), and approximate age of equipment replaced, rather than keeping this data only in the database maintained by the implementation contractor.	Rejected	The program implementation contractor's database is capable of collecting any data required by NYSERDA and transmitting that data to the Comprehensive Residential Information System (CRIS). Currently available in the program implementation contractor database, but not required program data points, are the age of home and equipment and presence of central air conditioning. CRIS is used by Program staff for reporting and analysis. These data points are not used by the program on a regular basis and therefore not included in CRIS. The collection of these additional recommended data points would add administrative burdens and is not consistent with NYSERDA's plan to streamline program requirements in order to ramp up production.
	Continue efforts to collect more information on customer decision-making regarding equipment and the age of the existing equipment replaced through the Program.	Rejected	The collection of these additional recommended data points would add additional administrative burdens and is not consistent with NYSERDA's plan to streamline the program requirements in order to ramp up production in this program.

**Table 4-5 continued**

Source of Recommendation (Contractor, Report Title, Date)	Recommendation	Status (Implemented, Pending or Rejected)	Program Implementer Response to Recommendation and Adoption Decision Rationale
<b>Home Performance with ENERGY STAR®</b>			
	Continue efforts with the utilities to ensure that billing data is complete, useful and properly interpreted.	Implemented	NYSERDA's Evaluation and Program staffs continue to work with the utilities to access and collect participant utility billing data on a routine basis. See response to the first item above under database and data collection enhancements.
	Paying \$100 incentives to non-participating contractors to complete the survey should be included in the initial evaluation design, the work plan and the evaluation budget.	Implemented	NYSERDA evaluation staff and contractors considered the inclusion of incentives in the Detailed Evaluation Plan (DEP) submitted to and approved by DPS. NYSERDA is also tracking the level of incentive necessary to complete this and other evaluations and the response rates attained to help in planning and budgeting this and future evaluation studies.

**Table 4-5 continued**

Source of Recommendation (Contractor, Report Title, Date)	Recommendation	Status (Implemented, Pending or Rejected)	Program Implementer Response to Recommendation and Adoption Decision Rationale
<b>Home Performance with ENERGY STAR®</b>			
	<p>To increase the reliability of the NTG evaluation, new evaluation designs and verification follow-ups should be explored and implemented and may include:</p> <p>Continue to include non-participant spill over (SO) studies when measuring net effects for HPwES in future impact evaluations. Surveys used to gather data for SO estimation should be designed to meet quotas for the number of respondents reporting SO.</p> <p>Design future SO evaluations with full consideration to conducting related market effects studies and follow-up verification studies. This approach may mean staging different research elements relating to participant ISO, participating vendor SO, and NPSO, within a context of market change and program-induced market effects. Significantly more resources will be needed to conduct this level of research into SO and market effects.</p> <p>Design additional evaluation research to increase the number, depth and breadth of validity checks for the NPSO analysis, as this SO component reflects efficiency efforts in the larger market and has a multiplier effect in the calculations</p>	Implemented	<p>NYSERDA will, to the extent possible, strive to increase the reliability of the NTG component of future evaluations by exploring new evaluation designs and methods. These efforts may include surveys to assess non-participant spillover, market effects and follow-up verification studies, as well as increasing the number, depth, and breadth of validity checks. This approach and the potential estimation of market effects are identified in the DEP and are being considered in the development of the Phase 2 work plan.</p>

**Table 4-5 continued**

Source of Recommendation (Contractor, Report Title, Date)	Recommendation	Status (Implemented, Pending or Rejected)	Program Implementer Response to Recommendation and Adoption Decision Rationale
<b>Home Performance with ENERGY STAR®</b>			
	Develop and implement an enhanced evaluation design to learn more about the decision-making process for replacing major equipment, in future evaluation designs.	Implemented	The evaluation work plan for this program is under development and, to the extent possible, will consider a multi-faceted approach to assess homeowner or participant decision-making criteria for replacing equipment.
	Future evaluations desiring to gather information on non-energy impacts need to include measure quotas in survey and sampling design and evaluation cost estimates.	Implemented	NYSERDA is currently implementing a study on Non-Energy Impacts (NEIs) for small residential buildings. The current study is looking at secondary research, NYSEERDA program data, and New York specific economic and climate factors to identify which measures have the greatest NEIs for HPwES, AHPwES, EmPower, and NYESH programs. This study aims to identify specific measure-level NEIs for further primary research.
	Evaluation Recommendation for the NYS DPS and New York Utilities: Develop a process to store participant billing records for a specified period rather than allowing older data to be placed in archives on the utilities' regular schedule.  Work with NYSEERDA and the utilities' evaluators to develop a standard way to provide billing data thereby placing NYSEERDA and utility evaluations on the same level.	Pending	This recommendation was forwarded to DPS for further consideration.  NYSEERDA continues to work with Con Edison to institute a protocol whereby billing data from participating customers who have signed the required release form would be regularly requested and securely stored by NYSEERDA for use in evaluation studies, thus avoiding the loss of data through Con Edison's archive process. The anticipated implementation for this utility-specific task is Q2 2014.
<sup>a</sup> Case 07-M-0548. <i>Order Approving EEPS Program Changes</i> . Issued and effective December 26, 2013.			



**Table 4-6. Pending Recommendations: EmPower New York Program**

Source of Recommendation (Contractor, Report Title, Date)	Recommendation	Status (Implemented, Pending or Rejected)	Program Implementer Response to Recommendation and Adoption Decision Rationale
<b>EmPower New York Program</b>			
Nexant, EmPower M&V, April 2007	Devise a methodology to automate the electronic transfer of results from the EmPower New York Calculator to the EmPower New York database.	Pending	EmPower will explore adoption of integrated management software.
Megdal and Associates, EmPower Impact Evaluation, April 2012	Methods for estimating savings for envelope measures (both natural gas and electric) and replacement refrigerators should be evaluated.	Pending	<p>July 2007 changes to improve the accuracy of EmPower savings estimates will have a greater impact in the post-evaluation period in the areas of: (1) Attic insulation: increased the estimated R-value of pre-existing fiberglass insulation in poor condition; (2) Wall insulation: lowered savings estimates to account for wall studs, window framing, and estimated 4% voids; (3) EmPower initiated a system for flagging and correcting high estimated savings as appropriate.</p> <p>In 2010, EmPower discontinued the use of fiberglass to insulate rim joists in favor of spray foam for both air leakage reduction and insulation.</p> <p>In 2011, EmPower initiated a practice of core sampling wall insulation to ensure appropriate density.</p> <p>Moving forward, EmPower plans to initiate:</p> <ul style="list-style-type: none"> <li>• Introduction of an advanced air sealing protocol and system for calculating savings based on air leakage reduction. Contractor training is in progress.</li> <li>• Adjustments to energy use thresholds for refrigerator and freezer replacements.</li> </ul>

Table 4-6 continued

Source of Recommendation (Contractor, Report Title, Date)	Recommendation	Status (Implemented, Pending or Rejected)	Program Implementer Response to Recommendation and Adoption Decision Rationale
<b>EmPower New York Program</b>			
	<p>Review policies for compact fluorescent lamp (CFL) installation to assess how to assist participants and achieve cost-effective savings, and monitor change in CFL market to determine whether it is necessary to modify the approach to the installation of CFL's further as CFL's gain greater market acceptance.</p>	Pending	<p>In 2008, EmPower began adjusting the estimated hours of daily usage of a CFL based on the number of CFLs installed. This approach reduces the average daily hours of use as the number of CFLs increases. The approach is more conservative than the one proposed in the NY State Tech Manual or the system recently proposed by DPS staff. In 2008, EmPower tightened enforcement of the installation of CFLs; jobs in which CFLs are given to the occupant but not installed, and yet billed to the program as installed, are scored as Quality Assurance failures for the contractor. Subsequently this practice has become very rare. The program is monitoring CFL market penetration; however, at this time finds that many opportunities remain for assisting low income households through the installation of CFLs.</p>
	<p>Review the fields in the database and data collection processes to assess whether additional information, such as the presence of working air conditioning, could be added to the tracking system. Review the coding of measure descriptions to make it easier to identify fuel switching measures and differentiate attic and wall insulation. Improve error checking methods and frequency to correct tracking system errors in a timely manner.</p>	Pending	<p>EmPower will consider adding data fields to assist future evaluations, including:                      Secondary heating systems.                      Separate fields for attic and wall insulation savings.                      Air conditioning.                      The program has enhanced the process of data checking by the Program Implementer.</p>

**Table 4-6 continued**

Source of Recommendation (Contractor, Report Title, Date)	Recommendation	Status (Implemented, Pending or Rejected)	Program Implementer Response to Recommendation and Adoption Decision Rationale
<b>EmPower New York Program</b>			
	Although the Net-To-Gross (NTG) component of the evaluation may not need to be conducted with every evaluation cycle, continuing to measure net effects for EmPower in the future is warranted.	Implemented	Although evaluation activities currently in development do not include NTG analyses since this study found the NTG to be nearly 1.0, and since most low-income evaluations do not address NTG, NYSERDA will continue to discuss the merits of assessing NTG in future EmPower evaluations with DPS.
	Continue to use survey instruments to inform the billing analysis, assess non-energy benefits and NTG factors	Implemented	Evaluation activities currently in development include use of surveys to inform findings.

**Table 4-7. Pending Recommendations: Green Jobs-Green New York Small Homes<sup>a</sup>**

Source of Recommendation (Contractor, Report Title, Date)	Recommendation	Status (Implemented, Pending or Rejected)	Program Implementer Response to Recommendation and Adoption Decision Rationale
<b>Green Jobs-Green New York Small Homes</b>			
<p>NMR Group, Inc., Process Evaluation and Market Characterization and Assessment, September 2012</p>	<p>Ensure that the marketing message to homeowners emphasizes the program benefits of saving on energy bills or saving energy. In order to support this effort, NYSERDA could provide sample data on potential net savings, in terms of financing costs and monthly savings on energy costs for different types of homes. Design interactive and educational tools to assist and engage the homeowner in understanding the potential efficiencies is another approach that could be taken.</p>	<p>Pending</p>	<p>Program staff continues to investigate and consider the benefits and costs of developing an interactive online energy audit tool for homeowners to learn about energy efficiency and the Home Performance with ENERGY STAR Program.</p>
	<p>Improve the tracking and presentation of HPwES contractor information to customers. Explore incorporating additional software functionality which would allow the NYSERDA website to list or sort contractors by distance from home and languages spoken. Examples of other search criteria that NYSERDA could consider include the number of HPwES projects completed, types of measures implemented, any quality assurance and quality control information that is not confidential, and customer satisfaction rating. For customers lacking web access, NYSERDA could provide such information over the phone or by mail.<sup>b</sup></p>	<p>Partially Implemented</p>	<p>Downstate community based organizations (CBOs) are allowed to make direct referrals to Home Performance with ENERGY STAR (HPwES) contractors. NYSERDA has developed a written process under which NYC-based CBOs may conduct customer referrals.</p> <p>Program staff continues to develop a customer satisfaction survey that would be combined with contractor profile information to offer customers better guidance on selection of a contractor.</p> <p>The HPwES Program launched a new contractor search website in July 2013. This website includes more robust contractor information to assist customers in the contractor selection process. Additional enhancements are planned.</p>

**Table 4-7 continued**

Source of Recommendation (Contractor, Report Title, Date)	Recommendation	Status (Implemented, Pending or Rejected)	Program Implementer Response to Recommendation and Adoption Decision Rationale
<b>Green Jobs-Green New York Small Homes</b>			
	Continue to enhance program data collection, tracking, and cross-contractor integration.	Implemented	A web-based program management software tool was launched in July 2013. This tool tracks projects from customer intake through completion more efficiently and effectively. This tool will be able to provide enhanced reporting capabilities.
	Consider offering additional seminars and webinars to educate HPwES contractors about the GJGNY low-interest loans. NYSERDA could also provide HPwES contractors with more guidance and better tools to sell the loan and help their customers through the application process. Align these approaches with the CBO effort to educate customers about the loans as well. Although EFS offer customer service and pre-screening, consider using an independent firm, such as EFS, to discuss GJGNY financing information with the participants directly.	Implemented	<p>Program staff presented a webinar to CBOs dedicated to financing. In addition, training for call center staff was provided.</p> <p>Energy Finance Solutions (EFS) is available to discuss GJGNY financing information with participants directly.</p> <p>The Building Performance Contractors Association is delivering a series of contractor training sessions across the state to answer contractor questions when it can and offer feedback to NYSERDA.</p> <p>The CBOs are now represented at the monthly meetings sponsored by Efficiency First to bring NYSERDA and contractors to seek solutions to barriers to increased adoption of energy efficiency.</p> <p>On September 5, 2013, the HPwES Program offered a sales and marketing webinar to participating contractors.</p>

**Table 4-7 continued**

Source of Recommendation (Contractor, Report Title, Date)	Recommendation	Status (Implemented, Pending or Rejected)	Program Implementer Response to Recommendation and Adoption Decision Rationale
<b>Green Jobs-Green New York Small Homes</b>			
	Develop marketing and educational materials that promote the benefits of early replacement of energy-consuming equipment. Educate HPwES contractors on how best to offer the consumer guidance about the benefits of early replacement.	Pending	This recommendation requires information to support the benefits of early replacement of equipment.
<p><sup>a</sup> Utilizing the existing infrastructure of the EEPS Home Performance with ENERGY STAR (HPwES) Program, Green Jobs – Green New York (GJGNY) funding provides free or reduced-cost energy audits, and low-interest financing to homeowners for the installation of HPwES-eligible, energy efficiency measures and eligible solar hot water systems. Though the study referenced in this table was supported by the</p> <p><sup>b</sup> CBOs are undertaking “aggregation,” bringing a collection of eligible homes into the program using the same contractor or contractor team, which should also help to address the issue of finding and selecting contractors. For more information, visit <a href="http://www.nyserda.ny.gov/Energy-Data-and-Prices-Planning-and-Policy/Green-Jobs-Green-New-York-Planning/Advisory-Council/-/media/Files/EDPPP/Planning/GJGNY/Advisory-Council-Meetings/GJGNY-draft-aggregation-model-2010May.ashx">http://www.nyserda.ny.gov/Energy-Data-and-Prices-Planning-and-Policy/Green-Jobs-Green-New-York-Planning/Advisory-Council/-/media/Files/EDPPP/Planning/GJGNY/Advisory-Council-Meetings/GJGNY-draft-aggregation-model-2010May.ashx</a> GJGNY evaluation budget, the study is included in this report given its connection with the EEPS HPwES Program.</p>			

## 5 Other

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Per the DPS reporting guidance, this section provides an opportunity to report significant activities or events not already reflected in the report. This section is not for reporting routine activities.

There are no other significant activities requiring explanation for the fourth quarter of 2013.

# Appendix A: Completed Evaluation Summaries

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This appendix contains a high-level summary of each recently-completed evaluation study. The full report on each evaluation study is available on the NYSERDA website. NYSERDA finalized the following evaluation contractor report in the fourth quarter of 2013:

1. Commercial and Industrial Existing Facilities Sector Nonparticipant Spillover and Market Effects Study, Energy Resource Solutions Inc., December 2013.



# NYSERDA 2007 to 2010 Commercial and Industrial Existing Facilities Sector Nonparticipant Spillover and Market Effects Study: Impact Evaluation Summary

*Evaluation Conducted by:* Energy & Resource Solutions, Inc., Impact Evaluation Team  
Lead Investigator: Kathryn Parlin, West Hill Energy & Computing, Inc., December 2013

## **PROGRAM SUMMARY**

The **New York Energy Smart**<sup>SM</sup> programs are designed to increase the adoption of energy efficiency measures in New York State (NYS) through resource acquisition and market transformation. The Nonparticipant Spillover and Market Effects Study was designed to measure nonparticipant spillover (NPSO) and market effects in existing commercial and industrial facilities. The evaluation includes both a traditional means (participant self-reporting) of assessing market effects, as well as exploration of an alternative method (cross-state study). The evaluation period covers projects installed from 2007 to 2010. The following subsections describe the goals, approach and methods, and results of the evaluation.

## **EVALUATION OBJECTIVE**

This study was designed to quantify changes in energy efficiency measure adoption by nonparticipating facility owners and equipment vendors as a result of NYSERDA's Commercial and Industrial (C&I) programs providing services to the existing facilities sector.

Goals of the evaluation were twofold:

To estimate the effects of NPSO in C&I existing facilities from the NYSERDA programs<sup>1</sup> that target these markets, and

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<sup>1</sup> These results should be applied to programs that are providing services for existing buildings in the C&I sector, such as the Existing Facilities Program and FlexTech. It may not be appropriate to apply these results to programs that are targeted toward specific subsets of C&I existing building market, such as the Industrial Process Efficiency program.

To test alternative methods to the self-report approach used to estimate spillover (SO) and free ridership (FR) within the individual program evaluations.

## **DETAILED EVALUATION FINDINGS**

The NPSO rate for existing buildings is 25% with a relative precision of 15% at the 90% confidence level. This value should be incorporated into the formula used by NYSERDA to estimate net savings at the program level:

$$NTGR = 1 - FR + ISO + OSO + NPSO$$

There are two important results that came out of the screener survey and were used in the NPSO calculations: (1) the average size of the facilities in NYS was 57,514 square feet per facility and (2) the annual remodel rate was 14% per year.

The enhanced self-report (ESR) surveys demonstrated the complex interactions between NYSERDA, the contractors, and the end users in the market. The critical insights into the decision-making process are summarized below.

There is a low recognition of NYSERDA among end users, as 76% of NYS end users in this sector were unaware of NYSERDA.

The vast majority of contractors recognizes and works with NYSERDA on some level, with 80% of contractors reporting involvement with NYSERDA.

Contractors estimate that 80% of NYS end users rely on contractors to recommend equipment, either accepting the contractor's assessment entirely or engaging in a discussion on selecting the appropriate equipment.

Eighty-six percent of contractors report that they recommend energy efficient equipment either always or most of the time.

As NPSO is likely to be a subset of market effects, a reality check for the magnitude of the NPSO is to assess whether the total market effects are larger than the NPSO. A cross-state study focusing on high-bay lighting (HBL) was added to this study to provide such a reality check by comparing the NYS market to comparison states (Alabama, Georgia, Mississippi, & South Carolina) that have not had statewide energy efficiency programs.

The results of the cross-state study did not demonstrate that there are market effects from NYSERDA's efforts. Unlike the recent studies conducted for Massachusetts and California, the efficiency of the HBL market in NYS and

the comparison states was very similar. This outcome was a combination of a substantial increase in the efficiency of the HBL market in the comparison area and the determination that the efficiency of the NYS HBL market is lower than found in Massachusetts and California.

There are two major factors that have propelled the comparison states to near the same efficiency level for this application:

1. The adoption and strengthening of codes in several of the comparison states resulted in the minimum efficiency allowed in those states being higher than in NYS during a portion of the study period. Thus the baseline efficiency was higher in the comparison area than in NYS. Not only were code efficiencies more stringent in part of the comparison area from 2008 through 2010, but contractors also reported a stronger influence from the codes in the comparison area (23%) as opposed to NYS (14%).
2. Many corporations have policies regarding sustainability and efficiency levels that are likely impacting upward to 40% of the market for these projects. These policies cut across state lines and tend to raise the average efficiency in the market, regardless of state codes or policies. In particular for corporate entities that use a chain or franchise model, contractors in both NYS and the comparison area reported that over 90% had efficient lighting requirements.

It is also possible that NYSERDA's programs are less focused on HBL than the efficiency programs in California and Massachusetts.

On the other hand, a higher percentage of NYS contractors reported influence by efficiency programs than the comparison area contractors for the recommendation, acceptance, and installation of efficient HBL. NYS contractors also identified NYSERDA incentives as a driving force in the market. These are clear indications that in NYS the NYSERDA programs are a positive influence in the adoption of efficient lighting, despite the comparison area analysis not demonstrating market effects.

## **EVALUATION METHODS AND SAMPLING**

Since 2005, NYSERDA has estimated both net and gross impacts for its efficiency programs, integrating the results through the net-to-gross (NTG) formula to estimate total net program savings. These savings can be impacted by FR, SO from both participants and nonparticipants, and market effects.

In the past, self-reports have been the primary method of estimating the impact of these factors on the NTG performance of NYSERDA's efficiency programs. This study is also largely reliant on self-reports with two additional components initially added: a cross-state study and a nested logit analyses. The cross-state study was

designed to assess market effects for a single technology (HBL) as a reality check on the NPSO findings, while the nested logit analysis was designed to estimate program FR for a specific technology promoted by NYSERDA's C&I programs, allowing comparison of results to earlier FR estimates. The nested logit analysis was eventually dropped due to the difficulty and cost associated with obtaining a sufficient sample size.

NYSERDA provided program data for the target time frame (2007 through 2010) and the Impact Evaluation Team gathered secondary data from the Illuminating Engineering Society of North America (IESNA).

Five surveys efforts were conducted to provide data for the NPSO and the focused HBL market effects studies, as described in Table 1 below.

**Table A-1 Telephone Survey Descriptions**

<b>Evaluation Activity</b>	<b>Survey Completes Obtained</b>	<b>Study Component Informed</b>	<b>Purpose</b>
Screener survey of NYS end users	2,578	ESR <sup>2</sup> and cross-state	Estimate incidence of remodeling, C&I space remodeled and difficulty of obtaining required sample sizes for evaluation components; compare sample frames
Survey of NYS end users	570	ESR and cross-state	Obtain data required for ESR and cross-state analyses
Survey of NYS contractors	225	ESR and cross-state	Obtain data required for ESR and cross-state analyses
Survey of comparison state end users	121	Cross-state	Obtain data required for cross-state analysis
Survey of comparison state contractors	72	Cross-state	Obtain data required for cross-state analysis

**CONCLUSIONS AND RECOMMENDATIONS**

The Impact Evaluation Team’s recommendations for the NYSERDA C&I Programs involve baseline considerations and program planning:

1. When establishing program baseline assumptions, the influence of large market actors, including national chains and franchises, should be taken into consideration.
2. NYSERDA should support the updating of the NYS energy code at least every three years.

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<sup>2</sup> Enhanced Self-Reports

3. It may be possible for NYSERDA to identify opportunities to leverage corporate sustainability and efficiency policies and increase the positive influence these appear to be having on the market.

The Impact Evaluation Team also recommends national evaluations and baseline studies. The cross-state study provided indications that some chains and franchises may be influencing the market for efficient technology. Ignoring the higher efficiency baseline for these projects could result in the overestimation of program savings. Supporting research at the national level in this area could be an important step toward addressing this issue.

NYSERDA, a public benefit corporation, offers objective information and analysis, innovative programs, technical expertise, and funding to help New Yorkers increase energy efficiency, save money, use renewable energy, and reduce reliance on fossil fuels. NYSERDA professionals work to protect the environment and create clean-energy jobs. NYSERDA has been developing partnerships to advance innovative energy solutions in New York State since 1975.

*To learn more about NYSERDA's programs and funding opportunities, visit [nyserda.ny.gov](http://nyserda.ny.gov) or follow us on Twitter, Facebook, YouTube, or Instagram.*

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**State of New York**  
Andrew M. Cuomo, Governor

## NYSEERDA's Energy Efficiency Portfolio Standard Program

Quarterly Report to the Public Service Commission  
Quarter Ending December 31, 2013

**New York State Energy Research and Development Authority**  
Richard L. Kauffman, Chairman | John B. Rhodes, President and CEO