



NYSERDA

Green Jobs - Green New York 2016 Annual Report

Reporting Period Ending June 30, 2016

Final Report

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, technology, and investment; transforming New York's economy; and empowering people to choose clean and efficient energy as part of their everyday lives.

Green Jobs - Green New York

2016 Annual Report

Final Report

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New York State Energy Research and Development Authority

Albany, NY

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Summary

Ramping up the rate of participation in energy efficiency projects is recognized as a means to boost New York State's economy by reducing energy bills and creating job opportunities. Both of these objectives are particularly important in economically distressed communities. Additionally, energy efficiency is recognized as one of the most cost-effective means to reduce greenhouse gas emissions, a benefit to the health of the environment and a means to help achieve the State's energy goals. Even so, many households have limited options for undertaking energy efficiency improvements.

On October 9, 2009, the Green Jobs - Green New York Act of 2009 (the Act) was signed into law. Pursuant to Title 9-A of New York State Public Authorities Law Section 1890 "The Green Jobs - Green New York Program" directs the New York State Energy and Research Development Authority (NYSERDA) to:

- Establish a revolving loan fund to provide loans to finance the cost of approved qualified energy efficiency services for residential, multifamily, and nonresidential structures.
- Offer On-Bill Recovery Loans as a means for financing projects.
- Pursue the feasibility of other innovative financing mechanisms.
- Issue one or more competitive opportunities to solicit applications from partnerships or consortia composed of constituency-based organizations (CBOs) that can connect community members to Green Jobs - Green New York (GJGNY).
- Target communities in areas where energy costs are particularly high in relation to a measure of median household income, as determined by NYSERDA, or that have been designated as a nonattainment area for one or more pollutants pursuant to Section 107 of the federal Clean Air Act.
- Give preference in awards to applicants that include significant participation by minority- and women-owned business enterprises and/or to applications intended to serve economically distressed communities.
- Establish standards for energy assessments based on building type and other relevant considerations.
- Establish a schedule of fees for energy assessments, including a sliding scale by which assessment fees shall be waived for residential applicants based on median county income.
- Enter into contracts to provide employment and training services to support GJGNY.
- Establish an Advisory Council.
- Provide annual reports to the Governor, Senate, and Assembly.

On August 4, 2011, Governor Andrew M. Cuomo signed the Power NY Act of 2011, which established an On-Bill Recovery Financing Program (OBR) for GJGNY project financing and increased the maximum loan limits for residential and small business/not-for-profit GJGNY loans, subject to certain project payback criteria. Although the legislation called for the OBR Loans to be available by May 2012, NYSERDA worked with the utilities and Department of Public Service staff to implement OBR Loans for residential consumers commencing January 30, 2012. In April 2012, an amendment to the GJGNY law – Public Authorities Law § 1896(5) – made additional changes to improve the OBR financing mechanism.

An additional amendment to the GJGNY Act of 2009 was signed into law on October 22, 2013, which extended the availability of GJGNY financing to net metered technologies, enabling residential solar electric installations through GJGNY loans.

Section A.3008/S.2008, Part SS, of the New York State 2015–2016 Budget included requirements for NYSERDA related to GJGNY as follows:

- Provide a report to the Executive, Temporary President of the Senate, Speaker of the Assembly, Chair of the Senate Committee on Energy and Telecommunications, and Chair of the Assembly Committee on Energy regarding the financial status of the GJGNY program.
- Continue to offer financing through the GJGNY program for qualified energy efficiency services to all applicants who were eligible on January 1, 2015 through March 31, 2016.
- Develop standards and/or criteria that will encourage and increase participation of, and issuance of loans, to low-to-moderate income (LMI) households statewide for qualified energy efficiency services under the GJGNY program.
- Convene a working group to assist in developing these standards and/or criteria that includes individual representatives of CBOs.
- Consult with and solicit information and recommendations from the working group as to how to increase participation and issuance of loans to low-to-moderate income households seeking qualified energy efficiency services.
- Report the results of consultations with and solicitations of the working group to the Governor, Senate Majority Leader, and Speaker of the Assembly within six months of the March 31, 2015 effective date of the legislation.

This seventh Annual Report submitted for GJGNY was prepared pursuant to Section 1899 of the Act, and provides an update on the progress and achievements of the GJGNY initiative through June 30, 2016. Visit nyserderda.ny.gov/About/Publications/GJGNY-Advisory-Council-Reports to view prior annual reports.

S.1 Stakeholder Input

NYSERDA meets with stakeholders through the Advisory Council at least biannually, but more often if warranted, and provides monthly written reports to Advisory Council members, in addition to ad hoc reports as needed. During this annual reporting period, NYSERDA met with the Advisory Council six times. The general public can, and often do, participate in Advisory Council meetings. Videos of Advisory Council meetings, agendas, notes, presentations, monthly reports, and ad hoc reports are posted on NYSERDA's website.

NYSERDA works with utility representatives, Department of Public Service staff, and program implementation contractors to support the implementation of OBR financing. In addition, NYSERDA meets regularly with stakeholders in the residential energy efficiency sector by scheduling regular calls or meetings, and by participating in the Creating an Industry Working Group (CIWG) to discuss program challenges and opportunities. During the current reporting period, the CIWG provided continual feedback to NYSERDA on program processes and features, the need for expanded lending options for consumers, and opportunities for continued collaboration with the CBOs. Feedback provided by the group, as well as other stakeholders, was factored into program improvements and has had immediate positive impacts on program delivery and participation.

S.2 Funding and Accomplishments to Date

The Act allocated \$112 million in funding from New York State's share of the Regional Greenhouse Gas Initiative (RGGI) to support GJGNY. In consultation with the GJGNY Advisory Council, NYSERDA suballocated the funding, which includes interest earnings, across the various program components prescribed by the GJGNY Act. In addition to the RGGI funds, NYSERDA received a U.S. Department of Energy (DOE) Better Buildings grant in the amount of \$40 million, of which \$18.6 million is used to support GJGNY financing or outreach. NYSERDA has also occasionally supplemented the GJGNY program funding with additional RGGI funds to ensure uninterrupted program services where needed.

By far the greatest demand for GJGNY funding has been from the residential revolving loan fund, which issued loans totaling its original allocation in less than three years. The residential revolving loan fund is now maintained primarily through a combination of short-term financing and proceeds from the sale of bonds:

- In August 2013, NYSERDA issued \$24.3 million in Residential Energy Efficiency Financing Revenue Bonds. The New York State Environmental Facilities Corporation (EFC) provided a guarantee of the principal and interest on the bonds through its Clean Water State Revolving Fund (SRF), enabling the bonds to achieve a AAA rating. The bonds were sold as Qualified Energy Conservation Bonds (QECCB), enabling an even lower interest rate.
- In September 2014, NYSERDA closed on a \$30 million short-term financing facility through EFC to finance additional residential energy efficiency loans. The short-term notes were redeemed in September 2015 with \$46.23 million in long-term bonds issued to EFC, which also provided funding to finance additional energy efficiency loans issued through March 2016. These bonds had no QECCB allocation associated with them, resulting in a slightly higher interest rate.
- In October 2015, NYSERDA closed on a \$50 million credit facility with M&T Bank to finance residential photovoltaic (PV) loans issued through the NY-Sun Program, as these loans were not able to qualify for the Clean Water SRF. The credit facility provides an aggregate \$50 million available through advances which may be drawn through September 2016.

More details regarding the bond issuance process can be found in Section 3.

Even though NYSERDA has had success using bonds to support the residential revolving loan fund, because of the subsidized interest rate offered on a rapidly growing number of GJGNY loans and the inability to include higher-risk loans in the portfolio of loans pledged for securities, the loan fund could not continue operating as it had been. Reduced RGGI auction proceeds and the need to balance GJGNY program needs with other initiatives to achieve the State's goals for reduced greenhouse gas emissions limit NYSERDA's ability to fully mitigate loan fund losses, which have been growing dramatically. The need to address the unsustainability of the residential loan fund became critical in 2015. Working with the Advisory Council, a plan was developed to implement higher interest rates starting on September 1, 2016 for consumers who have sufficient household incomes and who meet traditional market-based underwriting criteria. The need for funding to support overcollateralization is by far the greatest for this sector and in particular for those obtaining loans for solar PV projects. The interest rates offered to these customers will reflect the actual cost of administering the loans, while discounted rates will continue to be offered to consumers who lack access to alternative financing options. The interest rate changes, which will be implemented on September 1, 2016, along with the occasional addition of a limited amount of RGGI funds, are expected to adequately maintain the residential loan fund. However, the impact of the loan fund changes will be closely monitored and reported to the GJGNY Advisory Council, who will also be notified if additional changes need to be discussed. Additional detail regarding interest rate changes can be found in Section 3.

As can be seen in Table S-1, funding allocated to individual components of GJGNY has been nearly fully committed or expended. Reallocations of remaining uncommitted funds to the components most in need will be accomplished in the coming months. (As discussed above, the budget for residential financing is now managed through a combination of short term lending and bond issuances.) In the interest of maintaining initiatives that have been successful, NYSERDA included elements of GJGNY in the planning of the Clean Energy Fund (CEF).¹ NYSERDA is working with stakeholders to incorporate lessons learned from GJGNY into CEF planning and is working to ensure benefits from the GJGNY initiatives, particularly those benefitting the LMI sector, continue.

Additional details regarding funding status at the sector or program level can be found in Sections 3 through 8 and Section 10 of this report.

Table S-1 provides a summary of the GJGNY budget as of June 30, 2016.

¹ The Clean Energy Fund (CEF), one of Reforming the Energy Vision's (REV) three strategic pillars, is designed to deliver on New York State's commitment to reduce ratepayer collections, drive economic development, and accelerate the use of clean energy and energy innovation. It will reshape the State's energy efficiency, clean energy, and energy innovation programs. Visit nysesda.ny.gov/About/Clean-Energy-Fund for more details regarding CEF planning.

Table S-1. GJGNY Budget Summary as of June 30, 2016

Program Area	Budget	Expended*	Encumbered	Committed	Balance
Workforce Development	\$7,337,565	\$6,291,608	\$486,227	\$0	\$559,729
Outreach and Marketing	15,439,161	13,950,382	889,724	0	599,056
One- to Four-Family Residential Buildings	86,738,266	105,928,419	195,271	25,802,151	(45,187,575)
Multifamily Energy Performance	10,342,089	6,424,524	604,726	0	3,312,839
Small Commercial Energy Efficiency	11,935,828	8,343,820	3,067,866	733,862	(209,720)
Program Evaluation	5,600,000	3,058,138	1,394,424	1,000,000	147,438
Program Administration	10,418,137	9,298,700	14,820	0	1,104,617
NYS Cost Recovery Fee	1,904,000	1,985,516	0	0	(81,516)
Unallocated Interest Earnings	99,918				99,918
TOTAL	\$149,814,964	\$155,281,107	\$6,653,058	\$27,536,013	(\$39,655,215)

* Expended amount is net of loan repayments made through reporting period for One- to Four-Family, Multifamily and Small Commercial sectors, and includes bond proceeds, less bond issuance cost.

NOTE: The summary includes certain loans issued, but where proceeds from bonds to finance the pledged loans is received subsequently. The summary also includes pre-encumbrances for approved loans not yet issued, which will be funded from additional funds to be allocated in the FY16-17 RGGI Operating Plan and to be transferred to GJGNY. These are not yet reflected in the budgeted funds shown in this table.

Expended: Contractor Invoices and loans processed for payment by NYSERDA.

Encumbered: Remaining funding obligated under a contract, purchase order, incentive award, or loan.

Committed: Planned funding for contracts awarded and under negotiation; loans approved; and planned funding under active development through open solicitations with upcoming proposal due dates.

Table S-2 provides a summary of program performance metrics. Although specific goals have been established for the number of assessments and projects completed, it is important to note that there are many other indicators of program success that are not captured in the statistics regarding projects. Some of these additional indicators include the growth of participation in the programs in underserved communities, the creation of good jobs within those same communities, improved participation of LMI households in energy efficiency projects, and improved access to financing for households typically unable to qualify for financing. Other indicators of program success are seen in new, up-skilled, and higher waged employment opportunities resulting from the GJGNY program.

The impacts of program activities targeting these objectives are currently under evaluation, and initial progress is discussed in other sections of this report.

Table S-2. GJGNY Summary Performance Metrics

Metric	One- to Four-Family Residential Buildings	Multifamily Energy Performance	Small Commercial Energy Efficiency	Total
Assessment Applications Received (number)	131,887	324	3,296	135,507
Assessments Completed (number)	92,450	324	3,057	95,831
1st Year Net KWh Savings*	11,729,377	44,846,566	13,864,392	70,440,335
1st Year Net MMBtu Savings*	901,562	638,109	153,546	1,693,217
Estimated Annual Bill Savings*	\$23,078,239	\$27,343,568	\$4,757,550	55,179,357
Loans Issued/Closed (number)	11,477	23	50	11,550
Total Value of Loans	\$113,480,963	\$12,099,797	\$2,604,877	\$128,185,637
* Energy and bill savings represents installed to date saving for the One- to Four-Family sector, projected savings upon project completion for the Multifamily sector, and an estimated 44 percent project installation rate, based on historical performance for the Small Commercial sector.				

S.3 Workforce Training and Development

GJGNY workforce development (WFD) activities have expanded New York State’s capacity to deliver training services by working with community-based training organizations and existing training centers, providing much-needed training equipment and tools and minimizing barriers to delivering field testing and certification exams. The initiative has also provided direct entry, on-the-job, apprenticeship, and internship incentives to help defray costs of bringing on new hires.

Work under this initiative was closely coordinated with the New York State Department of Labor (DOL), New York State Homes and Community Renewal, New York State Office of Temporary and Disability Assistance, and others that leverage state, federal, and local funds where possible.

NYSERDA issued a total of seven Program Opportunity Notices (PON) and Requests for Proposals (RFP) designed to advance the WFD goals of GJGNY. Projects support the training objectives of the Act, including, but not limited to: 1) incremental occupational training to unemployed workers; 2) work readiness and entry-level technical training; 3) apprenticeship and labor-management certification training; 4) skills development for incumbent workers; 5) skills development for new workers to support advancement and improve employee retention; and 6) inventory of curriculum related to the objectives of GJGNY; and 7) qualitative research designed to assess skill gaps as identified by employers.

As a result of the solicitations, 20 contracts were awarded for curriculum and certification/accreditation development, representing approximately \$2 million in contract funding. Totalling in excess of \$2.7 million, 66 contracts were awarded to support apprenticeships and internships. In addition, 16 contracts were awarded to support equipment and training infrastructure, totaling \$1.9 million.

Through June 2016, NYSERDA's GJGNY training partners trained 3,869 individuals in courses including solar thermal installation, introductory PV training, advanced air sealing, pressure diagnostics, Building Performance Institute (BPI) basic air sealing and insulation, oil heat technology, and thermography. Training partnerships include public and private educators, professional associations, and nonprofits. The GJGNY-funded portion of the on-the-job training program concluded in December 2014 and resulted in the direct hire of 265 New Yorkers for technical jobs in the energy efficiency and renewable energy fields.

Additional information on WFD and training activities can be found in Section 4.

S.4 Outreach, Education, and Marketing

GJGNY is designed to deliver services in targeted communities through CBOs that target residents, small businesses, not-for-profit organizations, multifamily building owners, and potential workforce participants in designated communities. CBOs encourage participation in energy efficiency programs, facilitate awareness of workforce training opportunities, and assist with enrollment in those efforts. As of June 30, 2016, 11 competitively solicited CBOs are currently under contract to assist with program.

CBOs are providing outreach materials and/or applications translated into Spanish, Burmese, Bengali, and Nepali and have demonstrated a commitment to expanding the number of languages available. Among the CBOs under contract to NYSERDA, there are 30 multilingual staff members who speak Spanish, French, Hindi, Bengali, Bassa, Kru, Urdu, Nepali Tibetan, Creole, Gujarati, and a variety of African dialects. Five CBOs have Spanish-language outreach materials that are presented in addition to those Spanish language materials provided by NYSERDA. Two CBOs conduct Spanish-speaking outreach events. One of the CBOs has created three video guides, available in Spanish and English, demonstrating how to complete the NYSERDA forms for the Residential Home Energy Assessment, the Assisted Home Performance with ENERGY STAR® Program Application (HPwES), and the Residential Credit Application.

Two CBOs are implementing aggregation as part of their initiative. Aggregation is the process of identifying a group of homeowners who agree in advance to have the same contractor or contractor team perform their assessments and any resulting work. Aggregation results in more efficient use of contractor resources and reduced need for contractor marketing. Participating contractors agree to provide certain community benefits, which may include living wages and benefits for workers, local hiring, and preferential pricing, in exchange for receiving an aggregation of potential customers.

NYSERDA's competitively selected marketing contractor, Brand Cool, completed its obligations to the program at the end of May 2015 and since then marketing responsibilities have been handled internally by NYSERDA's Marketing Team. Additional information on outreach and marketing activities can be found in Section 8.

S.5 Energy Retrofits and Financing

GJGNY assessments and unsecured financing for the residential sector were launched in November 2010 through NYSERDA's HPwES program. More than 92,450 assessments were completed through June 2016. Nearly 32 percent of the homeowners who complete an assessment move forward with completing energy efficiency work through GJGNY. OBR became available in January 2012, with customer billing first appearing on utility bills starting in June 2012. In total, 5,490 OBR Loans totaling \$75.2 million and 10,340 Smart Energy Loans (a more traditional unsecured loan) totaling \$112.4 million have been issued through June 30, 2016. Of those loans, 2,442 loans totaling \$28.3 million were for customers who qualified through NYSERDA's alternative qualification, Tier 2 criteria, expanding the reach of the loan program to consumers who otherwise would not have qualified for a loan. On February 3, 2014, NYSERDA launched GJGNY financing for residential solar electric (also known as photovoltaic or PV). Customers of Renewable Portfolio Standard-participating utilities can finance stand-alone solar electric projects or combine solar electric with efficiency upgrades through HPwES. Through a Memorandum of Understanding with PSEG Long Island, as agent of and acting on behalf of the Long Island Power Authority (LIPA), NYSERDA extended GJGNY financing to participants in PSEG Long Island's Solar Pioneer program, who previously could not participate in GJGNY residential financing.

GJGNY assessments have been available in the multifamily sector since September 2010, while financing through participation loans was launched in June 2011. Access to the GJGNY assessments and financing for this sector is available through NYSERDA's Multifamily Energy Performance Program, a comprehensive program that serves market-rate and LMI projects using a common process and relying on a network of participating energy service contractors. As of June 2016, 324 assessments have been completed, and work has been completed on 37,587 projects. Twenty-three loans have been issued at a total value of \$12,099,797, NYSERDA's share of which was \$3,834,685. In addition to assessments and financing, participants have access to incentives through the suite of programs offered by NYSERDA or utilities. Work being accomplished in conjunction with a utility rebate program may be eligible for GJGNY Multifamily Financing if a building assessment has been completed that meets NYSERDA standards.

NYSERDA offers eligible small business and not-for-profit customers Qualified Energy Assessments from competitively selected Qualified Energy Consultants. In accordance with the GJGNY Act of 2009, NYSERDA uses GJGNY funding to provide free energy assessments statewide for small businesses and not-for-profits with 10 employees or fewer. NYSERDA also secured a limited amount of federal American Recovery and Reinvestment Act funds to provide free energy assessments to small businesses and not-for-profits across New York State with more than 10 employees and an average electric demand of 100 kilowatts (kW) or less. In June 2011, NYSERDA began offering Participation Loans to small businesses with 100 employees or fewer and to not-for-profits with any number of employees, which have Qualified Energy Assessments. In June 2012, GJGNY also began offering OBR Loans to small businesses and not-for-profits that meet GJGNY eligibility requirements. Financing may also be available to small business or not-for-profits that receive an assessment from a utility, if the assessment meets NYSERDA's standards.

In February 2012, NYSERDA launched a project expeditor pilot to provide assistance to small business and not-for-profit customers that had obtained energy assessments through GJGNY to encourage implementation of energy assessment recommendations. In addition to the assessments and financing, some participants have access to incentives through programs offered by NYSERDA or utilities. Assistance provided through the Small Commercial Expeditor Program can so far be attributed to 48 NYSERDA-approved participation loan applications and 34 NYSERDA-approved OBR Loan applications. Of these, nine participation loans were closed at an aggregate of \$938,285 in financing, and 11 OBR Loans closed, totaling of \$287,485. Further results of the expeditor pilot will be determined over time.

As of June 2016, 3,906 Qualified Energy Assessments have been completed, of which 3,057 are funded with GJGNY funds, while 849 were funded with American Recovery and Reinvestment Act funds. Overall, 27 participation loans have been closed at a value of \$1.8 million, while 23 OBR Loans have been closed at a value of \$760,461, bringing the total value of Small Commercial loans to \$2.6 million.

Details regarding program activity are included in Sections 3, 5, 6, and 7.

S.6. GJGNY Low to Moderate Income Working Group

As part of the requirements of Section A.3008/S.2008, Part SS, of the New York State 2015–2016 Budget, NYSERDA was directed to convene a working group to develop standards and/or criteria that will encourage and increase participation of and issuance of loans to LMI households statewide for qualified energy efficiency services under the GJGNY program.

In April 2015, NYSERDA established the GJGNY LMI Working Group, which consisted of 19 members representing CBOs, LMI consumer advocates, advocates on utility and housing issues, and stakeholders (including contractors) of the solar electric and home energy services industries. The group was chaired by the president and CEO of NYSERDA. To facilitate consistency and inter-group communication, several members of (or organizations represented on) the GJGNY Advisory Council also served on the GJGNY LMI Working Group. Members of the working group are listed in Table 9-1.

The GJGNY LMI Working group met eight times from April through September 2015. In addition, some members met as small subgroups to discuss and formulate recommendations regarding specific barriers or topics. Recommendations were offered by working group members or subgroups to the entire working group for discussion and consensus.

The working group report² was submitted to the Governor and members of the NYS Legislature on October 1, 2015 as required. It is posted on NYSERDA's web site.

² GJGNY Low- to Moderate-Income Working Group Recommendations Report. September 2015. nyserdanyny.gov/-/media/Files/EDPPP/GJGNY/Advisory-Council-Updates/GJGNY-LMI-Working-Group-Recommendations.pdf

A chart showing each of the recommendations and the status of implementation or resolution³ is also posted on NYSERDA's web site and is updated regularly.

S.7 Program Evaluation

Since the introduction of GJGNY, NYSERDA has engaged its third-party evaluation contractors to develop and implement evaluation plans for GJGNY programs. Each evaluation activity is designed to assess the effectiveness, progress, and outcomes related to each of the GJGNY program initiatives and to provide useful feedback to program staff that can be implemented to improve program performance.

Since not all GJGNY programs were implemented concurrently, early discussions between evaluation staff, program staff, and the evaluation contractors identified the need for initial work focused on residential one- to four-family homes. As GJGNY matured, NYSERDA and its evaluation contractors monitored the program progress and engaged staff to identify future evaluation needs and research objectives. In addition, evaluation staff received input from the Advisory Council on evaluation plans.

The evaluation of the Small Commercial Energy Efficiency Program quantified the measure adoption rate over time, assessed the degree of program influence on the participant decision making and the proportion of installed measures for which customers accessed other NYSERDA funding was completed in December 2015. A finding of this evaluation estimates that 44 percent of the energy savings recommended through program audits were reported to be implemented.

Leveraging the evaluation of the larger HPwES program, NYSERDA conducted an analysis of CBO efforts and an impact evaluation of GJGNY audit-only participants. The assessment of CBO-related efforts identified that CBOs are bringing in households that had not heard of or considered HPwES prior to engagement with the CBO. Further, a large majority of the CBO-affiliated participants would not have moved forward with their HPwES project without CBO support and engagement. The impact assessment of GJGNY audit-only participants includes a pre- and post-consumption billing analysis to assess the energy saving impacts associated with homeowners who received a GJGNY audit and did not pursue participation in the NYSERDA residential programs.

³ GJGNY Low- to Moderate Income Working Group Status of Recommendations. Ongoing.
<http://www.nysERDA.ny.gov/-/media/Files/EDPPP/GJGNY/GJGNY-LMI-Status-of-Recommendations.pdf>

An evaluation of the GJGNY Jobs impacts was launched in February 2016. This study is designed to update the GJGNY Jobs analysis that was conducted in 2013. This GJGNY Jobs assessment is being conducted using a phased approach. Phase 1 involves primary data collection via telephone and web-based surveys of various GJGNY market actors. Launched late April 2016 and continuing through July 2016, Phase 1 includes primary data collection with program participants. Phase 2 includes an update to the 2013 macroeconomic assessment of indirect jobs. Phase 2 analysis, utilizing primary data collected in Phase 1, is planned to begin August 2016. NYSERDA will work toward a final report in November of 2016.

Additional information on evaluation activities can be found in Section 10.

S.8 Improvements to Program Offerings

NYSERDA is committed to an environment of continuous improvement, particularly focused on the customer. Beginning in 2014, NYSERDA has worked with stakeholders to undertake a targeted effort to improve both customer and contractor experience with the HPwES program. Improvements include updates to the website and consumer marketing materials, enhanced contractor profiles, a streamlined assessment application process, faster project approvals, and changes to financing products that make them more accessible to customers. These developments have improved the program throughput and have increased participation rates.

NYSERDA has also completed implementation of a number of recommendations of the GJGNY LMI Working Group, resulting in faster payment of solar PV incentives to installers, a streamlined and combined online loan and subsidy application, improved processes for loan and subsidy applications and approvals, consideration of moderate-income households with up to 120 percent of the State or area median income when designing loan interest rates, and improved information sharing regarding projects associated with CBOs.

S.9 Conclusion

The GJGNY program facilitates community-centered initiatives that increase the reach of GJGNY among disadvantaged populations and households not traditionally participating in energy efficiency programs. Workforce training and development (WFD) funding supports career pathway development within economically challenged communities, whereas multilingual marketing and curriculum materials assist in expanding opportunities for green-building training. Complementary workforce training outreach efforts target areas with high populations of minorities, low-income individuals, and populations with barriers to employment. GJGNY Aggregation Pilot contractor participants agree to provide community benefits such as hiring local workers and providing living wages. NYSERDA has further modified loan underwriting standards in the one- to four-family sector in an effort to improve the accessibility of financing to consumers who would not qualify using traditional underwriting standards, resulting in lower loan denial rates. As a result of these collective efforts, the number of LMI households receiving services through the program has increased.

NYSERDA is undertaking a continuous process of improvements, rooted in the needs of consumers and service providers alike, to streamline programs and make them easier for households, contractors, and CBOs to participate. The implementation of recommendations made by the GJGNY LMI Working Group is ongoing.

A priority for the coming year is the evaluation and analysis of GJGNY initiatives, learning from successes and challenges, and developing plans to transition successful strategies and activities to the proposed CEF. In particular, discussions regarding how to improve the impact of community outreach and workforce development initiatives are underway. A plan for ensuring the residential loan fund is sustainable has been developed and implementation has commenced. These actions will help ensure successful components of the GJGNY program continue into the future.

1 Introduction

Ramping up the rate of participation in energy projects is recognized as a means to boost New York State's economy by reducing energy bills and by creating job opportunities. Both of these objectives are particularly important in economically distressed communities, where so much investment in energy efficiency and renewable energy resources is needed. Additionally, energy efficiency is recognized as one of the most cost-effective means to reduce greenhouse gas emissions, a benefit to the health of the environment and a means to help achieve the State's energy goals. Even so, many households have limited options for financing energy efficiency improvements.

To successfully grow the energy services industry, there needs to be investments on many fronts – homeowner and building-owner investments in property, business investments in cost-effective process improvements, public and private investments in creating service delivery infrastructure in addition to public and private investments in educating consumers on the many benefits of energy efficiency and related program opportunities. Public investment in improving access to financing and workforce development and training are also important as the market grows. Significant public investment in energy efficiency is occurring in New York State through the Reforming the Energy Vision (REV) proceeding, including the CEF and Regional Greenhouse Gas Initiative (RGGI), and through federal resources such as the Weatherization Assistance Program (WAP). Simultaneously, New York State residents and commercial industries are making significant investments in energy efficiency and renewable energy, sometimes paying as much as 90 to 100 percent of the cost of work or products supported by public programs. The level of investment is commendable and necessary to overcome energy challenges and to attain the State's aggressive energy and environmental goals.

On October 9, 2009, the Green Jobs - Green New York Act of 2009 (the Act) was signed into law. Pursuant to Title 9-A of New York State Public Authorities Law Section 1890 "The Green Jobs - Green New York Program" directs NYSERDA to:

- Establish a revolving loan fund to provide loans to finance the cost of approved qualified energy efficiency services for residential, multifamily, and nonresidential structures.
- Offer OBR Loans as a means for financing projects.
- Pursue the feasibility of other innovative financing mechanism.
- Issue one or more competitive opportunities to solicit applications from partnerships or consortia composed of CBOs that can connect community members to GJGNY. In issuing contracts to CBOs that:

- Target communities in areas where energy costs are particularly high in relation to a measure of median household income, as determined by NYSERDA, or that have been designated as a nonattainment area for one or more pollutants pursuant to Section 107 of the federal Clean Air Act.
- Give preference in awards to applicants that include significant participation by minority- and women-owned business enterprises and/or to applications intended serve economically distressed communities.
- Establish standards for energy assessments based on building type and other relevant considerations.
- Establish a schedule of fees for energy assessments, including a sliding scale by which assessment fees shall be waived for residential applicants based on median county income.
- Enter into contracts to provide employment and training services to support the GJGNY Program.
- Establish an Advisory Council.
- Provide annual reports to the Governor, Senate, and Assembly.

On August 4, 2011, Governor Andrew M. Cuomo signed the Power NY Act of 2011, which established an OBR financing mechanism for GJGNY project financing and increased the maximum loan limits for residential and small business/not-for-profit GJGNY loans, subject to certain project payback criteria. Although the legislation called for the OBR Loans to be available by May 2012, working with the utilities and Department of Public Service staff, NYSERDA was able to implement OBR Loans for residential consumers commencing January 30, 2012. In April 2012, an amendment to the GJGNY law – Public Authorities Law § 1896(5) – made additional changes to improve the OBR financing mechanism.

An additional amendment to the GJGNY Act of 2009 was signed into law on October 22, 2013. This amendment extended the availability of GJGNY financing to net metered technologies, enabling residential solar electric installations through GJGNY loans.

Section A.3008/S.2008, Part SS, of the New York State 2015–2016 Budget included requirements for NYSERDA related to GJGNY as follows:

- Provide a report to the Executive, Temporary President of the Senate, Speaker of the Assembly, Chair of the Senate Committee on Energy and Telecommunications, and Chair of the Assembly Committee on Energy regarding the financial status of the GJGNY program. This report was submitted on May 1, 2015.
- Continue to offer financing, pursuant to through the GJGNY program for qualified energy efficiency services to all applicants who were eligible on January 1, 2015, through March 31, 2016.
- Develop standards and/or criteria that will encourage and increase participation of and issuance of loans to low-to-moderate income households statewide for qualified energy efficiency services under the GJGNY program.
- Convene a working group to assist in developing these standards and/or criteria that includes individual representatives of CBOs.
- Consult with and solicit information and recommendations from the working group as to how to increase participation and issuance of loans to low-to-moderate income households seeking qualified energy efficiency services.
- Report the results of consultations with and solicitations of the working group to the Governor, Senate Majority Leader, and Speaker of the Assembly within six months of the March 31, 2015 effective date of the legislation.

2 Advisory Council and Public Input

NYSERDA's initial planning process for GJGNY involved significant input from the general public, various interested parties, and program stakeholders. During the initial nine-month planning phase of the program, the GJGNY Advisory Council held meetings every three to four weeks. As the GJGNY program began its deployment phases, meetings of the Advisory Council changed to a quarterly schedule and monthly written reports were added to ensure Advisory Council members have current information on important milestones, achievements, or issues. In 2014, NYSERDA proposed a change to the regular Advisory Council meeting schedule whereby the Council will meet twice a year as opposed to quarterly, and hold additional special meetings as needed to discuss significant program changes or in response to Advisory Council requests on topics that should not wait for the next scheduled meeting. Advisory Council meetings are open to the public, and documentation of the meetings is posted on NYSERDA's website. Visit nysesda.ny.gov/About/Green-Jobs-Green-New-York/Advisory-Council/Meetings to view Advisory Council meeting documentation.

The Advisory Council consists of 10 Ex-Officio Members and 23 Appointed Members who represent: constituency-based community groups; consumer advocates on utility and housing issues; community-based workforce development groups; unions, including building trades and property services; home performance contractors; large-scale construction contractors; and investment market experts. Members of the Advisory Council are listed in Table 2-1. Due to the critical and timely nature of discussions taking place about the residential revolving loan fund over the past year, no changes to membership were proposed, even though some members continue to serve on the Advisory Council in expired terms.

During the 2016 Annual Report reporting period, the Advisory Council met on August 7, 2015; September 22, 2015; October 23, 2015; April 15, 2016; April 27, 2016; May 13, 2016. Agendas for the Advisory Council meetings are provided in Appendix A.

Table 2-1. GJGNY Advisory Council Members

Name	Organization	Term Expires
John B. Rhodes	President and CEO, NYSERDA (Chair)	n/a
Howard Zemsky	Commissioner, New York State Department of Economic Development	n/a
Samuel D. Roberts	Commissioner, New York State Office of Temporary and Disability Assistance	n/a
Audrey Zibelman	Chair, New York State Department of Public Service	n/a
Thomas Falcone	CEO & CFO, Long Island Power Authority	n/a
Basil Seggos	Commissioner, New York State Department of Environmental Conservation	n/a
Rossana Rosado	Secretary of State	n/a
Gil C. Quinines	President and CEO, New York State Power Authority	n/a
Mario J. Musolino	Acting Commissioner, Department of Labor	n/a
James Rubin	Commissioner, New York State Homes and Community Renewal.	n/a
James Barry	Service Employees International Union 32BJ	12/31/2016
Chuck Bell	Consumers Union	12/31/2015
Les Bluestone	Blue Sea Construction	12/31/2015
Tria Case	City University of New York	12/31/2016
Sammy Chu	Suffolk County Department of Labor	12/31/2016
Stephen Edel	Center for Working Families	12/31/2016
Kate Fish	Adirondack North Country Association	12/31/2016
Clarke Gocker	People United for Sustainable Housing - Buffalo	12/31/2016
Ross Gould	Workforce Development Institute	12/31/2016
Dave Hepinstall	Association for Energy Affordability	12/31/2015
Alan Hipps	Housing Assistance Program of Essex County	12/31/2015
David Johnson	Laborers International Union of North America	12/31/2015
William Johnson	Green America Public Private Partnership	12/31/2015
Jennifer Keida	Standard Insulation Co. Inc.	12/31/2015
Jason Kuflik	Green Street Power	12/31/2016
Conrad Metcalf	Building Performance Contractors Assoc.	12/31/2016
Jackson Morris	National Resource Defense Council	12/31/2015
Ellen Redmond	International Brotherhood of Electrical Workers	12/31/2016
Kevin Rooney	Oil Heat Institute of Long Island	12/31/2016
Paul Shatsoff	PS Consulting	12/31/2016
Hal Smith	Home Energy Performance by Halco	12/31/2015
Lisa Tyson	Long Island Progressive Coalition	12/31/2016
Michael Weisberg	Hudson Valley Commercial Bank	12/31/2016

2.1 GJGNY Communities Working Group

As an outcome of the work of the LMI Working Group, at the October 2015 GJGNY Advisory Council meeting, a decision was made to establish a Community Outreach Discussion Working Group to determine how best to leverage valuable community resources toward achieving the best outcome for low- to moderate-income households. The group holds regular meetings and plans to present its final recommendations to the GJGNY Advisory Council in summer 2016.

The Working Group is addressing the following items to inform a future community-based outreach initiative:

- Identify the activities that future community-based outreach organizations will perform to increase LMI participation in clean energy activities.
- Review current LMI outreach efforts by CBOs to determine what has been successful and what has not been successful to inform future program design.
- Identify metrics for each proposed activity future community-based outreach organizations in order to properly measure success of these efforts.
- Identify the characteristics of organizations and personnel that would best support the community-based outreach effort.

Working group members include: Jason Kuflik (Green Street Power), Will Schweiger (Efficiency First New York), Stephan Edel (Center for Working Families), Clarke Gocker (PUSH Buffalo), Hal Smith (Halco), Chris Carrick (CNY Regional Planning and Development Board), Guy Kempe (RUPCO), Jason Kulaszewski (PUSH Green), Kathleen Langton (Affordable Housing Partnership), Conrad Metcalfe (Building Performance Contractors Association), Kevin Rooney (Oil Heat Institute of Long Island), Lisa Tyson (Long Island Progressive Coalition), Jessica Waldorf (NYSERDA), and Kelly Tyler (NYSERDA, convener).

The group met nine times during the current reporting period in 2016: January 5, February 2, February 11, February 25, March 10, March 17, March 24, March 31, and April 7.

2.2 GJGNY Workforce Development Working Group

Also as an outcome of the work of the LMI Working Group, at the October 2015 GJGNY Advisory Council meeting, a decision was made to establish a Workforce Development Working Group to provide recommendations on workforce development initiatives moving forward. The group convenes about once per month and plans to present its final recommendations to the GJGNY Advisory Council in fall 2016.

The Working Group is addressing the following workforce opportunities and needs:

- Role of CBOs.
- Workforce investments and job quality.
- Work with DOL on data collection related to workers.
- Career pathways, training continuum, apprenticeships, direct entry.
- Regional stakeholder advisory groups.
- Communication of issues, lessons learned, etc.
- Labor standards.

Working group members include: Jason Kuflik (Green Street Power), Ellen Redmond (International Brotherhood of Electrical Workers), Ross Gould (Workforce Development Institute), Dave Hepinstall (Association for Energy Affordability), Tony Joseph (NYS Department of Labor), Will Schweiger (Efficiency First New York), Stephan Edel (Center for Working Families), Clarke Gocker (PUSH Buffalo), Hal Smith (Halco), Paul Shatsoff (PS Consulting), Marilyn Oppedisano (National Electrical Contractors Association), and Adele Ferranti (NYSERDA, convener).

The group met six times during the current reporting period in 2016: January 20, February 8, March 21, April 11, May 2, and June 20.

2.3 Creating an Industry Working Group

NYSERDA is part of the Creating an Industry Working Group, a collaborative group established by a trade organization for home performance contractors, Efficiency First New York, and includes NYSERDA, CBOs, and NYSERDA's program implementation contractors. The group discusses opportunities, challenges, and mitigation strategies related to delivering energy efficiency services in the one- to four-family residential sector. Members of the group also review documents and program tools that provide training and information for other program participants. Through the work of this group, and in collaboration with other stakeholders, NYSERDA has been able to provide significant streamlining and improvements to program delivery in the residential sector.

During the current reporting cycle, the group provided continual feedback to NYSERDA on a variety of topics including: HPwES and EmPower NY processes, the impact of the GJGNY home energy assessment program, the need for additional lending options for consumers and engaging with market based lenders, improvements to the GJGNY lending process, and opportunities for continued collaboration with CBOs.

2.4 Website

To ensure transparency and to keep members of the public up-to-date about GJGNY, a section of NYSERDA's website is dedicated to GJGNY.⁴ All GJGNY-related documents, including Advisory Council meeting materials and videos, monthly updates, and annual reports are posted to the website.

⁴ Visit nysesda.ny.gov/About/Green-Jobs-Green-New-York for information about GJGNY.

3 Financing

This section provides information related to various financing activities being undertaken that aide owners of one- to four-family residential buildings, multifamily buildings, and buildings occupied by small businesses and not-for-profit organizations to invest in energy efficiency improvements.

3.1 U.S. Department of Energy Grant Award

In May 2010, NYSERDA received a competitive award from the U.S. Department Energy (DOE) Better Buildings Program Energy Efficiency Conservation Block Grant (EECBG) to leverage new and existing energy efficiency retrofit and finance programs to create large-scale sustainable approaches to financing energy efficiency across the State. From the total award of \$40 million, New York City received a sub-award of \$21.4 million to support financing for commercial customers. An additional \$5 million was sub-granted to a coalition of Long Island towns, through Community Development Center of Long Island, to support energy efficiency outreach programs that encourage energy efficiency retrofits, with financing provided through GJGNY. Of that sub-grant money, \$2 million is being used for loan loss reserve for loans issued. NYSERDA's \$13.6 million portion of the grant is being used to support energy efficiency financing through the GJGNY program and to leverage private capital.

The DOE grant requires no less than 60 percent of the NYSERDA/State funding of \$13.6 million (equaling \$8.16 million) to be sub-granted to small municipalities that are not eligible for EECBG funding. The Bedford/Westchester Consortium Pilot Financing Program, partners in the proposal to DOE, is using \$1,267,864 of the award to administer their own pilot financing program through GJGNY. To meet DOE's grant requirements, a competitive solicitation was released in March 2011 for \$6,892,135. The solicitation resulted in eight awards: seven awards went to municipalities that will serve as host communities for the GJGNY Revolving Loan Fund, and one award went to Oswego County for \$744,825 to administer their own small commercial loan fund. The municipalities awarded as GJGNY host communities will use approximately \$614,730 for outreach and marketing efforts in their regions, and they have re-granted approximately \$5.5 million to NYSERDA: \$5,032,581 to GJGNY Revolving Loan Fund loan loss reserves and \$500,000 for system upgrades to support OBR financing.

NYSERDA has allocated \$8,512,581 of its grant funding approved by the DOE for loan loss and debt service reserves to fund a Collateral Reserve Account, associated with a guarantee provided by the New York State Environmental Facilities Corporation (EFC) through its State Revolving Fund (SRF) program of NYSERDA's \$24.3 million Residential Energy Efficiency Financing Revenue Bonds (Series 2013A) issued in August 2013, which is used to finance certain loans issued through the GJGNY program. The Collateral Reserve Account will be used to reimburse the EFC for any draws upon its guarantee and was instrumental in obtaining the guarantee from EFC (allowing the bonds to achieve a AAA-rating) and protecting the SRF program from shortfalls in pledged loan repayments.

NYSERDA and NY Green Bank also entered into a Letter of Credit Agreement with the Energy Improvement Corporation (EIC), a local development corporation located in Bedford Hills, NY, funded with \$500,000 from the DOE grant funding, to support the Energize NY Benefit Financing Program. This program offers financing for energy efficiency improvements and renewable energy system installations in commercial buildings repaid through a charge collected on property tax bills from participating municipalities, commonly referred to as Property Assessed Clean Energy (PACE) financing. NYSERDA's funding is matched with funding provided by EIC to fund loan loss reserves and debt service reserve funding to cover any shortfalls in the collections of financing repayment charges by the participating municipalities.

A breakdown of the entire budget for this grant funding is provided in Table 3-1.

Table 3-1. U.S. DOE Grant Funding Budget

Grants	New York City	Long Island Consortium	NYSERDA		Total
			Direct	Small Municipalities	
New York City Financing to Commercial Customers	\$21,400,000				\$21,400,000
Long Island Towns Outreach		3,000,000			3,000,000
Town of Bedford/Westchester Consortium Pilot Financing Program				1,267,864	1,267,864
Oswego County (Small Commercial Energy Efficiency Loan Fund)				744,825	744,825
Outreach by local government host communities				614,730	614,730
Reserve used to fund Collateral Reserve Account to secure Guarantee from NYS Environmental Facilities Corporation for NYSERDA Residential Energy Efficiency Revenue Bonds (Series 2013A)		2,000,000	1,980,000	5,032,581	8,512,581
Loan loss and debt service reserve with Energy Improvement Corporation to support Energize NY Benefit Financing Program			500,000		500,000
GJGNY small business energy assessment subsidies			1,700,000		1,700,000
Upgrades to support OBR			400,000	500,000	900,000
Subtotals	21,400,000	5,000,000	4,080,000	8,160,000	38,640,000
NYSERDA administration			1,360,000		1,360,000
TOTAL	\$21,400,000	\$5,000,000	\$13,600,000		\$40,000,000

3.2 Revolving Loan Fund

NYSERDA has established a Revolving Loan Fund to support energy efficiency financing for owners of one- to four-family residential buildings, multifamily buildings, and buildings occupied by small businesses and not-for-profit organizations. The GJGNY Act requires the initial balance of the residential account to be at least 50 percent of the total balance. NYSERDA has allocated the financing across sectors as represented in Table 3-2.

Table 3-2. Revolving Loan Fund Budget by Sector

Program Area	Budget	Loans Issued and Implementation Expenses	Loan Repayments and Bond Proceeds	Encumbered	Committed	Balance
One- to Four-Family Residential Buildings	\$59,551,564	\$196,903,942	\$116,425,093*	\$195,271	\$24,087,500	(\$45,210,056)
Multifamily Performance	4,923,169	3,985,913	1,924,008	154,750	0	2,706,514
Small Commercial Energy Efficiency	2,274,917	1,720,808	238,570	268,536	733,862	(209,719)
TOTAL	\$66,749,650	\$202,610,663	\$118,587,671	\$618,557	\$24,821,362	(\$42,713,261)
<p>* Bond proceeds are reported less bond issuance cost.</p> <p>NOTE: The summary includes certain loans issued, but where proceeds from bonds to finance the pledged loans is received subsequently. The summary also includes pre-encumbrances for approved loans not yet issued, which will be funded from additional funds to be allocated in the FY16-17 RGGI Operating Plan and to be transferred to GJGNY. These are not yet reflected in the budgeted funds shown in this table.</p>						

Pursuant to the GJGNY Act, loans were initially limited to not more than \$13,000 per applicant for one- to four-family residential structures and \$26,000 per applicant for small business and not-for-profit structures. The Power NY Act of 2011 allows loans to exceed \$13,000, up to \$25,000 for residential structures and exceed \$26,000 up to \$50,000 for small business and not-for-profit structures, provided that the project payback is 15 years or less. NYSERDA has established programmatic limits for multifamily structures, not to exceed \$5,000 per unit and \$500,000 per building.

To pursue financing through the Revolving Loan Fund, a customer must have a qualified energy assessment that identifies energy services to be undertaken. Subject to the loan caps, the amount eligible for financing will be the total project cost minus any NYSERDA, utility or other incentives or rebates that

are available. The total cost of the project may include the removal of equipment or systems to be replaced, the purchase and installation of new systems or equipment, the purchase and installation of any required ancillary equipment and related services, including necessary health and safety improvements, and the customer's expense for an energy assessment.

3.2.1 Residential Financing

GJGNY offers two types of loans for one- to four-family residential energy efficiency improvements. An unsecured consumer loan financing product was launched on November 15, 2010. This loan, referred to as the Smart Energy Loan, requires the consumer to make monthly loan payments directly to NYSERDA's master loan servicer, Concord Servicing Corporation. On January 30, 2012, NYSERDA launched OBR Loans, as authorized by the Power NY Act of 2011. This product was implemented four months prior to the May 30, 2012 implementation required by the statute. The OBR Loan allows consumers to repay through an installment charge on a bill from one of the involved electric or gas utilities (Central Hudson, Con Edison, Long Island Power Authority, National Grid [Upstate], New York State Electric and Gas Corporation, Rochester Gas and Electric Corporation, or Orange and Rockland Utilities). The utilities then remit repayments to NYSERDA's master loan servicer, who coordinates data communications with each utility.

The residential loans are originated statewide through Energy Finance Solutions (EFS), a not-for-profit energy efficiency lending organization competitively selected by NYSERDA to provide residential financing services. EFS reviews loan applications and originates loans pursuant to loan underwriting criteria established by NYSERDA. EFS closes on the loan, disburses loan proceeds to the contractor, and submits the loan to NYSERDA's master loan servicer, Concord Servicing Corporation. Then, NYSERDA reimburses EFS for the loan disbursement from the Revolving Loan Fund. Concord Servicing Corporation is responsible for borrower billing and collections on the loan portfolio and also monitors the origination processes on a sample basis to ensure conformance to standards.

Further details of the financing available to this sector are found in Section 5.

3.2.2 Multifamily Building Energy Efficiency Financing

Through a Participation Loan, launched in June 2011, a participating lender issues a loan for a qualifying energy efficiency project. NYSERDA participates in the funding of 50 percent of the loan (up to a maximum of \$5,000 per unit or \$500,000 per building) at two percent interest, with the lender setting the interest rate on its share of the loan. The lender is responsible for collecting loan repayments and remitting to NYSERDA its proportionate share, and NYSERDA and the lender share pro-rata on any loan defaults.

Further details of the financing available to this sector are found in Section 6.

3.2.3 Small Commercial Energy Efficiency Financing

GJGNY offers two types of loans for energy efficiency improvements in small business and not-for-profit structures. Through a Participation Loan, launched in June 2011, a participating lender issues a loan for a qualifying energy efficiency project. NYSERDA participates in the funding of 50 percent of the loan (up to a maximum of \$50,000) at zero percent interest, with the lender setting the interest rate on its share of the loan. The lender is responsible for collecting loan repayments and remitting to NYSERDA its proportionate share. The participating lender is responsible for loan underwriting pursuant to its standards, and NYSERDA and the lender share in a pro-rata basis on any loan defaults. In July 2012, NYSERDA launched OBR Loans. This approach allows participating lenders, known as originators, to originate an OBR Loan on NYSERDA's behalf, using NYSERDA loan underwriting standards. The loans are issued at an interest rate of 2.5 percent for a maximum loan amount of \$50,000. The loan is repaid to NYSERDA through an installment charge on the participating electric/gas utility bill, remitted to NYSERDA's master loan servicer.

Further details of the financing available to this sector are found in Section 7.

3.2.4 Bond Financing

In August 2013, NYSERDA issued \$24.3 million in Residential Energy Efficiency Financing Revenue Bonds (Series 2013A). The bonds were secured by pledged loan payments from certain residential energy efficiency loans issued through the program (totaling approximately \$29.2 million in aggregate principal) and available monies in the GJGNY revolving loan fund. Approximately 65 percent of the pledged loan pool was unsecured Smart Energy Loans and the remaining 35 percent were OBR Loans. The bonds require NYSERDA to maintain future loan repayments and other pledged revenues of not less than 110 percent of the annual bond principal and interest due in each year.

As a second source of security, the EFC provided a guarantee of the principal and interest on the bonds through its SRF program. EFC's SRF program provides access to AAA-rated financing for clean water and drinking water projects. EFC received concurrence from the U.S. Environmental Protection Agency to qualify the financing of the residential energy efficiency loans as an eligible SRF project. Due to the guarantee, the bonds received AAA rating by Moody's Investors Service and Standard and Poor's Ratings Services. As discussed in Section 3.1, NYSERDA funded a Collateral Reserve Account pledged to EFC.

The bonds were sold as Qualified Energy Conservation Bonds (QECCB), using a portion of the State's bond volume cap authorization, which provided a substantial interest subsidy from the U.S. Treasury. The bonds were structured with serial maturities with a weighted average term of about 6.9 years and a weighted average interest rate of about 3.2 percent. The net interest rate on the bonds, net of anticipated QECCB interest subsidies, is anticipated to be about 0.5 percent.

The transaction was a success, with 34 percent of the bonds sold to funds with social responsibility mandates. The deal was also named the 2013 Small Issuer Deal of the Year by *The Bond Buyer* newspaper and offers a replicable model to be considered by other states.

In September 2014, NYSERDA closed on a \$30 million short-term financing facility through EFC to finance additional residential energy efficiency loans. The Notes have a maturity of five years and bear interest at zero percent for the first \$15 million drawn under the facility, and 0.35 percent for the remainder. NYSERDA drew down the full amount of the facility in March 2015. The short-term notes were redeemed in September 2015 with \$46.23 million in long-term bonds issued to EFC, which also

provided funding to finance additional energy efficiency loans issued through March 2016. NYSERDA retained Jefferies & Co. as placement agent to secure a borrowing facility/drawdown bond structure to finance certain residential solar electric loans issued to date through the program and additional loans anticipated to be issued through March 2016.

In October 2015, NYSERDA closed on a \$50 million credit facility with M&T Bank to finance residential photovoltaic (PV) loans issued through the NY-Sun Program. These loans were unable to meet the criteria required to make them eligible for the SRF. The credit facility provides an aggregate of \$50 million available through advances, which may be drawn through September 2016. NYSERDA is currently working with M&T to add additional funds and extend this credit facility.

NYSERDA anticipates issuing additional recipient bonds to EFC in connection with EFC's 2016 pool bonds. The Series 2016A Bonds are anticipated to be issued for a principal amount of approximately \$22.4 million and will be secured by residential energy efficiency loans issued not previously pledged to the prior bonds (estimated aggregate principal amount of approximately \$29.6 million).

Finally, during the past year, NYSERDA worked with the GJGNY Advisory Council to address financial sustainability of the program based on the current program interest rate offered and its impact on financing proceeds resulting from debt service requirements. NYSERDA will implement higher interest rates on September 1, 2016 for certain segments of consumers based on household income levels and ability to meet certain credit underwriting criteria. Interest rates will be discounted for LMI households and those who would otherwise lack access to affordable financing options.

3.3 Residential Loan Fund Sustainability

Even though NYSERDA has experienced success in using bonds to support the residential revolving loan fund, because of the subsidized interest rate offered on a rapidly growing number of GJGNY loans, and the inability to include higher-risk loans in the portfolio of loans pledged for securities, the loan fund could not continue operating as it had been. While the value of loans issued has grown over time, since solar PV loans became eligible, the growth has been dramatic, quadrupling in only two years. The subsidized interest rate would result in significant losses to the loan fund, which were expected to nearly double from 2016 to 2017. Reduced RGGI auction proceeds and the need to balance GJGNY program needs with other initiatives to achieve the State's goals for reduced greenhouse gas emissions limit NYSERDA's ability to fully mitigate the loan fund losses. The need to address the unsustainability of the residential loan fund became critical in 2015. Therefore, NYSERDA continued its work with the GJGNY

Advisory Council, which started two years ago, to identify a solution to the problem. The Advisory Council met four times from October 2015 to May 2016 to review loan fund analysis, understand the funding constraints, explore various interest rate scenarios, discuss the potential impact of changes (or the lack thereof) on the market, and develop a solution. Details of the meetings with the Advisory Council can be found at nysesda.ny.gov/About/Green-Jobs-Green-New-York/Advisory-Council/Meetings.

In identifying a solution, NYSERDA and the Advisory Council worked from the following principles:

- OBR must be preserved.
- Access to financing must be preserved for all market segments.
- Attention must be focused on access to reasonable financing for households which otherwise lack such access.
- What contractors and customers see must be simple and manageable.

Analysis of the loan fund demonstrated that the majority of loans being issued were to households with higher incomes and good credit. Further, the analysis showed that the greatest overcollateralization need, meaning new funding that must be added to the loan fund to cover costs, was for loans issued to higher income households with good credit who were financing solar PV projects. It was also known, from NYSERDA's market research, that a number of third-party financing options exist in the market for that sector. Working with the Advisory Council, a plan was developed to implement higher interest rates starting September 1, 2016, for consumers who have higher household incomes and who meet traditional market-based underwriting criteria. The interest rates offered to these customers will reflect the actual cost of administering the loans, meaning overcollateralization would be minimized. Discounted rates would continue to be offered to the consumers who lack access to alternative financing options.

The Advisory Council also agreed that the changes in interest rates would become effective on September 1, 2016, and that a formal review of the loan fund and the impact of the interest rate changes would take place in April 2017. However, GJGNY Advisory Council recommended that the loan fund be closely monitored; that changes in loan volumes, loan access, third-party lending options and other impacts be tracked and reported to the Advisory Council; and the Advisory Council be notified if the impacts differ significantly from what is anticipated, and therefore additional changes should be discussed.

The interest rate changes, shown in Table 3.3, along with the occasional addition of a limited amount of RGGI funds, are expected to adequately maintain the residential loan fund.

Table 3-3. New Residential Loan Fund Interest Rates as of September 1, 2016

Program Type	Energy Efficiency			Renewable Energy / Combined		
	Smart Energy - Pay by mail	Smart Energy - Auto Pay	On-Bill Recovery	Smart Energy - Pay by mail	Smart Energy - Auto Pay	On-Bill Recovery
Income Level						
Less than or equal to 80%	3.99%	3.49%	3.49%	3.99%	3.49%	3.49%
Greater than 80% up to 120%	5.49%	4.99%	4.99%	5.49%	4.99%	4.99%
Greater than 120%	6.49%* or 7.49%**	5.99%* or 6.99%**	5.99%* or 6.99%**	6.49%* or 8.49%**	5.99%* or 7.99%**	5.99%* or 7.99%**
<p>* Primarily based upon a FICO score lower than 640; or a debt-to-income ratio above 50%; and no bankruptcies within the past two years.</p> <p>** Primarily based upon a FICO score of 640 or greater; and a debt-to-income ratio of 50% or less; and no bankruptcies within the past seven years.</p>						

3.4 Financing Contracts

In 2009, NYSERDA competitively selected EFS to originate residential energy efficiency financing through its HPwES program, and the contract was amended to provide for origination services for solar electric loans issued through the GJGNY program upon passage of the associated legislation. A competitive solicitation issued in March 2011 resulted in the selection of Concord Servicing Corporation to provide master loan servicing. NYSERDA entered into an interim contract with New York Title Research Corporation, Zodiac Title Services, and Advantage Title Agency to perform property searches and to file mortgage/declaration documents to support OBR Loans. A competitive solicitation issued in April 2013 awarded contracts on a regional basis to provide these services.

NYSERDA competitively retained a financial advisor, Lamont Financial Services, to provide services for program design and to provide advice on financial structures. NYSERDA also competitively selected Hawkins Delafield and Wood LLP as its bond counsel to provide legal advice on financial matters, legislation, program design, and structures for financing. Additionally, NYSERDA entered into a contract with the Energy Programs Consortium to support development of a multistate financing structure for unsecured energy efficiency financing that will facilitate the securitization of such loans in which it may participate. Funding amounts for these contracts are detailed in Table 3-3. However, the allocation of these costs to the residential, multifamily, and small commercial sectors are provided in Sections 5, 6, and 7.

Table 3-4. Financing Contracts

Identification Number	Contractor	Description	Contract Amount	Expended	Encumbered	Committed
Financing Implementation						
PO- 21769	Concord Servicing Corporation	RES Master Loan Servicer for GJGNY	N/A	\$1,885,119	\$0	\$0
15518	Wisconsin Energy Conservation Corporation (Energy Finance Solutions)	Origination Fees	N/A	3,065,600	0	0
		LIPA Fees		14,500	0	0
		Ramp-up / Development costs for GJGNY & OBR programs		87,999	0	0
PO-35421	First Associates Loan Servicing	Backup Loan Servicer for GJGNY Loan Program	116,500	73,620	42,880	50,000
PO- 27533	NY Title Research Corp.	OBR Last Owner Searches	59,860	59,860	0	0
PO- 31684	Zodiac Title Services	OBR Last Owner Searches & Recording Services	100,000	100,000	0	0
PO- 31684-1	Zodiac Title Services	OBR Last Owner Searches & Recording Services	26,670	26,670	0	0
PO- 33527	Advantage Title Agency, Inc.	OBR Last Owner Searches & Recording Services	75,000	75,000	0	0
PO- 36864	Advantage Title Agency, Inc.	OBR Last Owner Searches & Recording Services	333,333	330,471	2,862	0
PO- 38299	Frontier Abstract & Research Services	OBR Last Owner Searches & Recording Services	333,332	329,710	3,622	0
PO- 37723	Stewart Title Insurance Company	OBR Last Owner Searches & Recording Services	333,332	330,082	3,250	0
PO- 40738	Energy Improvement Corporation	Energize New York Program Support	50,000	50,000	0	0
PO- 20662	Energy Programs Consortium	Phase I	6,250	6,250	0	0
PO- 18591	Hawkins Delafield & Wood	Legal financial advisory services for GJGNY	313,998	313,998	0	0

Table 3-4 continued

Identification Number	Contractor	Description	Contract Amount	Expended	Encumbered	Committed
Financing Implementation						
PO- 19923	Lamont Financial Services Corporation	Financial Advisor Services	327,050	326,064	986	0
PO- 19923-1	Lamont Financial Services Corporation	Financial Advisor Services	50,000	14,412	35,588	50,000
PO- 26143	Equifax Credit Marketing Services	Annual Subscription to CreditForecast.com 2011-12	20,000	20,000	0	0
PO- 30985	Fitch Ratings, Inc.	Issuance of NYSERDA 2012 GJGNY Energy Efficiency Bonds	45,000	45,000	0	0
PO- ST10743-1	Harris Beach PLLC	Bond Counsel	125,000	125,000	0	0
PO- 33119	NetRoadshow, Inc.	Establishment of portal communication between NYSERDA and bond rating agency	5,000	5,000	0	0
PO- 72032	Bank of New York	Trustee Services for 2014A Notes	5,000	5,000	0	0
PO- 73313	Kroll Bond Rating Agency Inc.	Bond Rating Services	12,500	12,500	0	0
PO- 80732	Dentons US LLP	Bond Counsel Services	13,000	12,917	83	0
TOTAL FINANCING IMPLEMENTATION			\$2,350,825	\$7,314,772	\$89,271	\$100,000
<p>NOTE: Contract funding amounts listed in Table 3-4 are total amounts. Due to the fact that these services are provided across the One- to Four-Family Residential, Multifamily, and Small Commercial sectors, the prorated share of these contracts is also provided in the Contracts Entered Into tables in sections 5, 6, and 7.</p>						

3.5 On-Bill Recovery Financing

The Power Act of 2011 requires additional reporting regarding OBR. Additional information regarding OBR as of June 30, 2016, is provided as Appendix B.

4 Workforce Training and Development

The Workforce Training and Development (WFD) initiative was designed to build on existing NYSERDA and New York State Department of Labor (DOL) programs targeted at preparing individuals for energy efficiency and renewable energy careers in New York State. Specifically, WFD efforts under GJGNY were designed to expand energy-specific content in New York State Registered Apprenticeship and third-party accredited building trades programs, to increase access to technical training workshops for skills enhancement and certification, and to bridge the gap between training and employment through on-the-job training incentives for businesses seeking to hire and train new workers. Implementation of the GJGNY WFD initiative began in mid-2010.

GJGNY WFD programs were designed in coordination with the Workforce Development Working Group around anticipated increased demand for energy efficiency services. However, demand for energy retrofits in the single-family, multifamily, and small commercial sectors was lower than anticipated.

As a result, the large number of new jobs GJGNY training partners were preparing people for did not materialize. Some training providers, primarily those located in areas with high population density, were able to train a significant number of individuals and facilitate connections to employers seeking to hire. Others have been challenged to fill classrooms and meet enrollment projections. The on-the-job training program (OJT) was designed to help bridge the gap between training and job placement, and better balance training with the needs of energy services industries. Of the 536 individuals hired to date through OJT, 265 were supported with GJGNY funding.

4.1 Workforce Training and Development Solicitations

Since the inception of the GJGNY WFD initiative, NYSERDA has issued a total of seven Program Opportunity Notices (PONs) and Requests for Proposals (RFPs) designed to support the Operating Plan and the workforce training objectives of the Green Jobs – Green New York Act.

GJGNY workforce development and training activities have expanded New York State's capacity to deliver training services by working with community-based training organizations, expanding existing training centers, providing much-needed training equipment and tools, and minimizing barriers to delivering field testing and certification examinations. The initiative has also provided direct-entry, on-the-job, and apprenticeship incentives to help defray the costs for businesses associated with bringing on new hires.

NYSERDA WFD efforts funded under GJGNY are aligned with program strategies that promote the widespread implementation of energy efficiency and renewable energy measures and provide meaningful employment opportunities for job seekers. Access to technical training, equipment, and opportunities for hands-on experiential learning opportunities is needed to master skills, pass certification exams, and enable businesses to employ newly-trained workers that must deliver a quality work product.

The vast majority of GJGNY workforce development and training activities concluded by 2015.

4.1.1 Workforce Development and Training Partnerships for Energy Efficiency and Lab Houses for Field Testing

The Workforce Development and Training Partnerships for Energy Efficiency and Lab Houses for Field Testing opportunity (PON 1816), an open enrollment solicitation issued December 2010, included several funding components: career pathways for engaging disadvantaged communities, technical training, certification reimbursement, and internships and apprenticeship support. GJGNY funds totaling \$1.65 million were added to the existing Energy Efficiency Portfolio Standard-funded PON 1816, which built on existing career pathways efforts. Upon issuance in 2010, PON 1816 included GJGNY funding for accreditations and certifications. In 2012, the accreditation and certification reimbursement components were moved to PON 2397 to align all individual incentives. Since 2011, 32 companies have received BPI accreditation with GJGNY funding awards totaling \$37,252 and 94 individuals received certifications with GJGNY funding awards totaling \$73,861.

GJGNY training partnerships under PON 1816 included the Syracuse University Southside Innovation Center, Solar One, and Northern Manhattan Improvement Corporation. All training partners have completed contracted activity.

Also under PON 1816, NYSERDA sought proposals to establish lab houses, also known as pressure houses, for use in connection with classroom instruction, field activities, and field testing for green job worker certifications. A “pressure house” is a small house or house-like lab facility used to teach duct testing, blower door testing, combustion appliance zone pressure testing, combustion appliance testing, and other services for the residential and small commercial market. An increased number of pressure houses throughout New York State provides greater local access to hands on field training and field

testing facilities. NYSERDA lab houses were developed in coordination with New York State Homes and Community Renewal (HCR), which sponsored two additional training houses under the American Recovery and Reinvestment Act (ARRA). HCR houses are located at Hudson Valley Community College and Erie Community College.

All four lab houses receiving GJGNY funds have been constructed and are being used for clean energy training and testing purposes. They include: Northeast Parent and Child Society (NEPCS) in Schenectady, NY, the Green Jobs Training Center (GJTC) in Howard Beach, Queens, NY; Champlain Valley-Technical Education Center (CV-TEC) of Plattsburgh, NY; and “Kelder House” located on the State University of New York (SUNY) Ulster campus.

4.1.2 Energy Efficiency Technical Training

The Energy Efficiency Technical Training opportunity (PON 1817), a competitively bid solicitation issued June 2010, included \$600,000 in GJGNY funds to support the development of Oil Heat Efficiency training and Small Commercial Energy Assessment training. As a result, one contract for Oil Heat Efficiency and two contracts for Small Commercial Energy Assessment curriculum development and training were issued.

Oil Heat Technician Training: Community Power Network (CPN) was funded under PON 1817 to incorporate BPI-specific guidelines into the existing oil heat technician training, with an emphasis on whole building science and energy efficiency, combustion efficiency, advanced oil tank installation, and combustion and air venting. The CPN contract concluded in May 2015 after achieving a total of 784 individuals trained in National Oilheat Research Alliance (NORA) Bronze Certification; NORA Silver Certification; NORA Gold Certification; NORA Tank Certification; and Combustion Air, Venting, Efficiency and Carbon Monoxide. Additionally, CPN developed and piloted a new course incorporating the use of an American Reinvestment and Recovery Act-funded equipment trailer. This course provides oil heat technicians with the opportunity for hands-on instruction and practice in boiler installation and troubleshooting.

Small Commercial Energy Assessment Training: The City University of New York (CUNY) Building Performance Lab developed skill enhancement training for assessors conducting small commercial assessments. The 15 training modules include classroom activity and assignments designed to apply skills in the field. Participants will work individually as well as in small groups to complete hands-on training sessions and presentations. In July 2014, the curriculum was updated to include content on building envelope and data entry through the Department of Energy's Portfolio Manager tool. The CUNY team also developed separate video resources on instrumentation including, but not limited to, light meters, data loggers, and thermal imaging. CUNY was funded only for content development and does not have any training metrics to report.

Under a separate PON 1817 contract, the SUNY Stony Brook has developed specialized Small Commercial Assessment training, in cooperation with the United States Green Buildings Council, specific to building stock in New York City. Small Commercial Energy Assessment training developed under this initiative is based on existing American Society of Heating, Refrigerating, and Air-Conditioning Engineers (ASHRAE) standards for Level 1 and Level 2 assessments. Stony Brook conducted three pilot training sessions in Long Island, Syracuse, and Buffalo and a total of 63 individuals completed the pilot sessions. Stony Brook continues to offer the course.

4.1.3 Solar Thermal Training

The Solar Thermal Training opportunity (PON 2011), issued in May 2010, offered \$300,000 in GJGNY funds to develop solar thermal training or solar thermal modules to integrate with existing energy efficiency training, including curriculum development, equipment, code official training, and assistance to apply for the Interstate Renewable Energy Council Institute for Sustainable Power Quality (IREC ISPQ) accreditation. A total of four contracts were executed: Ulster County BOCES, Sullivan County BOCES, Monroe Community College, and SUNY Canton. Sullivan County BOCES was later cancelled due to inactivity resulting from staff changes and low enrollment. SUNY Canton has achieved IREC ISPQ accreditation for its Solar Heating Installer Program. A total of 248 individuals were trained under these contracts. Solar thermal training programs were established and continue to operate as demand for the training dictates.

4.1.4 Contractor Exchange Workshops

In August 2010, NYSERDA awarded \$150,000 to Building Performance Institute (BPI) to develop and implement five Contractor Exchange Workshops across the State. The goal of these workshops was to address business development and management skills for new and existing home performance contractors. More than 460 people attended these workshops, which not only helped educate home performance contractors, but also provided valuable feedback to program staff regarding the program's benefits and challenges.

4.1.5 Technical Workshops/Expanding BPI Field Exam Capacity/Certification Standards

The Technical Workshops/Expanding BPI Field Exam Capacity/Certification Standards opportunity (PON 2032), released in March 2012, included \$1.48 million for three funding categories: A) Hands-on Technical Workshops, B) Expanding BPI Exam Capacity, and C) Oil and Gas Furnace Installation Certification Standards.

The PON closed in December 2012. In total, seven proposals were funded under Category A resulting in contracts with the following training partners: Solar One, New York State Weatherization Directors Association (NYSWDA), Institute for Building Technology and Safety (IBTS), two with the Building Performance Contractor's Association (BPCA), Northeast Parent and Child Society, and SUNY Ulster. Energy efficiency and solar thermal training delivered includes: entry-level building science, energy modeling software, solar thermal installation, and advanced skill enhancement training such as infrared thermography. Training providers are under contract to train a total of 1,863 individuals, of which 1,531 (82 percent of the total goal) have been trained to date. All of the training contracts under PON 2032 have closed with the exception of SUNY Ulster's Agreement which will continue through 2016.

Under Category B, two contracts were awarded. Solar One and SUNY Ulster were awarded funds to expand their network of BPI proctors so that field exam testing capacity could be expanded. As a result, three instructors became eligible to proctor BPI Building Analyst and BPI Energy Efficient Building Operator exams. SUNY Ulster hired three new BPI test proctors.

Under Category C, a competitive component seeking proposals for Oil and Gas Furnace Installation certification standards, a number of proposals were received but none were fundable.

4.1.6 Internships/Apprenticeships/On-the-Job Training

The Internships/Apprenticeships/On-the-Job Training opportunity (PON 2033), originally released in June 2011, to recruit entry-level workers, support businesses hiring graduates from career pathways training programs, and enhance standards for the NYS Registered Apprenticeship Programs and building trades programs, including weatherization and certified energy efficiency technicians for GJGNY. The PON provided \$3.55 million, of which \$1.7 million was GJGNY funding.

Under PON 2033, NYSERDA contracted with a total of five training providers (LaGuardia Community College, the Urban League of Rochester, Service Employees International Union [SEIU] Local 32 BJ, Urban Green Council, and Solar One) to develop and deliver energy efficiency training ranging from basic weatherization and construction through more advanced training such as Green Professional (GPRO) for union plumbers. Under their PON 2033 Agreement, LaGuardia Community College translated United States Green Buildings Council Green Professional (GPRO) into Spanish and delivered the course to 120 New Yorkers. In total, 609 New Yorkers were trained under these Agreements.

In addition, NYSERDA executed on-the-job training (OJT) agreements with 64 businesses seeking to hire new employees or advance incumbent workers under GJGNY. The GJGNY-funded component of the program ended on December 31, 2014, resulting in 265 people being hired from the DOL's New York State Career Centers (formerly DOL One Stop Centers) lists, and 13 incumbent workers advanced due to training. Approximately \$1.67 million in wage and training subsidies was awarded. The average wage of workers hired under the program is \$16.97 per hour.

Under the GJGNY-funded OJT incentive, businesses could receive reimbursement for 50 percent of the wages that they paid the employee during training, with a maximum award per trainee of \$15,000 for the first \$150,000 in NYSERDA incentives and 25 percent of the wages that they pay the employee for training, up to \$7,500 thereafter.

4.1.7 Curriculum Inventory, Assessment, and Curriculum Updates

The Green Jobs – Green New York Curriculum Inventory Assessment, and Curriculum Updates opportunity (RFP 2034), issued in July 2010, offered \$475,000 to conduct a curriculum inventory, contractor needs assessment, and curriculum updates. Under the competitive solicitation, there were no

fundable proposals for the curriculum update component. The curriculum inventory and contractor needs assessment were awarded to Pace University, with a final report, “Making the Right Connections: Ways to Improve Workforce Training to Better Meet Employer Needs in the Green Jobs - Green New York Program,”⁵ issued in August 2013.

4.1.8 Solar Electric Training on Long Island

Mid-year 2014, NYSERDA added \$250,000 in GJGNY funds to the Systems Benefit Charge funds used for solar electric (photovoltaic) balance of system training work with the NY-Sun PV Trainers Network on Long Island. The work is ongoing and demand for PV Trainers Network services on Long Island has been strong with just over 500 participants trained to date.

4.2 Workforce Training and Development Budget

Table 4-1 provides the Workforce Development budget.

Table 4-1. Workforce Development Budget

Component	Budget	Expended	Encumbered	Committed	Balance
Equipment and Training Infrastructure					
Contracts	\$1,895,676	\$1,649,102	\$143,280		\$103,295
Incentives	100,000	21,697	0		78,303
Certifications and Company Accreditation					
Contracts	326,949	235,797	91,152		
Incentives	200,000	125,258	0		74,742
Apprenticeships/Internships	2,889,250	2,406,792	251,796		230,662
Curriculum	1,648,372	1,575,644	0		72,728
Conferences and Technical	277,318	277,318	0		
TOTAL	\$7,337,565	\$6,291,608	\$486,227	\$0	\$559,730

Expended: Contractor Invoices and loans processed for payment by NYSERDA.

Encumbered: Remaining funding obligated under a contract, purchase order, incentive award, or loan.

Committed: Planned funding for contracts awarded and under negotiation; loans approved; and planned funding under active development through open solicitations with upcoming proposal due dates.

⁵ NYSERDA. 2013. “Making the Right Connections: Ways to Improve Workforce Training to Better Meet Employer Needs in the Green Jobs - Green New York Program,” NYSERDA Report 13-17. Prepared by Pace Energy and Climate Center. nyserdera.ny.gov/-/media/Files/EERP/GJGNY/Evaluation-Reports/making-the-right-connections-report.pdf

4.3 Workforce Training and Development Contracts

External contracts related to the implementation of the GJGNY Workforce Development Initiative are detailed in Table 4-2.

Table 4-2. Workforce Training and Development Contracts

Identification Number	Contractor	Description	Contract Amount	Expended	Encumbered	Committed
Apprenticeships/Internships						
25493	ASI Renovation	PON 2033 OJT Incentive	\$37,223	\$37,223	\$0	\$0
25168	Coler Natural Insulations	PON 2033 OJT Incentive	7,280	7,280	0	0
25249	True Energy Solutions	PON 2033 OJT Incentive	56,057	56,057	0	0
25250	Classic Cozy	PON 2033 OJT Incentive	12,387	12,387	0	0
25251	Energy Savers, Inc.	PON 2033 OJT Incentive	6,700	6,700	0	0
25251-1	Energy Savers, Inc.	PON 2033 OJT Incentive	4,939	4,939	0	0
25258	The Radiant Store	PON 2033 OJT Incentive	44,060	44,060	0	0
25423	Prospect Development & Construction	PON 2033 OJT Incentive	20,000	20,000	0	0
25845	K&L Green Operations, LLC	PON 2033 OJT Incentive	165,397	165,397	0	0
53130	K&L Green Operations, LLC	PON 2033 OJT Incentive	8,320	8,320	0	0
26200	CNY Solar, Inc.	PON 2033 OJT Incentive	7,280	7,280	0	0
25906	Apex Engineering	PON 2033 OJT Incentive	22,376	22,376	0	0
26078	Home Energy Consultants	PON 2033 OJT Incentive	5,277	5,277	0	0
26371	CNC COATIN-001	PON 2033 OJT Incentive	10,000	10,000	0	0
26642	Radiant Drywall & Insulation Corp.	PON 2033 OJT Incentive	34,808	34,808	0	0
27904	Urban League of Rochester	PON 2033 Cat. A Curriculum Development	99,796	99,796	0	0
27523	Dundon Insulation	PON 2033 OJT Incentive	11,261	11,261	0	0
27519	Halco Renewable Energy	PON 2033 OJT Incentive	59,000	59,000	0	0

Table 4-2 continued

Identification Number	Contractor	Description	Contract Amount	Expended	Encumbered	Committed
Apprenticeships/Internships						
27520	Kalex Energy Company	PON 2033 OJT Incentive	2,813	2,813	0	0
56345	Kalex Energy Company	PON 2033 OJT Incentive	2,523	2,523	0	0
27521	NY Homeowners Construction Co.	PON 2033 OJT Incentive	16,942	16,942	0	0
27974	New Buffalo Impact, Inc.	PON 2033 OJT Incentive	30,733	30,733	0	0
27971	Opportunities for Otsego	PON 2033 OJT Incentive	5,507	5,507	0	0
28270	All Star Energy	PON 2033 OJT Incentive	9,814	9,814	0	0
28407	Foam-It Insulation	PON 2033 OJT Incentive	50,291	50,291	0	0
28269	Standard Insulating Company, Inc.	PON 2033 OJT Incentive	13,149	13,149	0	0
29403	Local 32BJ	PON 2033 Cat. A Curriculum Development	289,245	274,377	14,868	0
29437	Tech Home Electric	PON 2033 OJT Incentive	5,894	5,894	0	0
29684	Home Performance Technologies, Inc.	PON 2033 OJT Incentive	49,811	49,811	0	0
29904	Integral Building & Design, Inc.	PON 2033 OJT Incentive	49,016	49,016	0	0
29903	Ecologic Home	PON 2033 OJT Incentive	10,400	10,400	0	0
30809	Jerritt Gluck	PON 2033 OJT Incentive	14,167	14,167	0	0
30810	Ivy Lea Construction	PON 2033 OJT Incentive	34,431	34,431	0	0
30999	Energy Management Solutions, LLC	PON 2033 OJT Incentive	85,836	85,836	0	0
32119	Buffalo Energy, Inc.	PON 2033 OJT Incentive	28,181	28,181	0	0
32725	New York State Foam Energy	PON 2033 OJT Incentive	28,405	28,405	0	0
32171	New York Energy Consultants	PON 2033 OJT Incentive	4,642	4,642	0	0
33911	LaGuardia Community College	PON 2033 Cat. A Curriculum Development	121,971	121,971	0	0
33364	Northeast Parent and Child Society	PON 2033 OJT Incentive	17,400	17,400	0	0

Table 4-2 continued

Identification Number	Contractor	Description	Contract Amount	Expended	Encumbered	Committed
Apprenticeships/Internships						
33384	Pennbrook Energy	PON 2033 OJT Incentive	17,931	17,931	0	0
34356	Global Dwelling	PON 2033 OJT Incentive	15,000	15,000	0	0
34262	J Synergy Green Inc.	PON 2033 OJT Incentive	39,350	39,350	0	0
28501	Solar One	PON 2033 Cat. A Curriculum Development	121,171	121,171	0	0
35209	U.S. Green Building Council	PON 2033 OJT Incentive	45,894	45,894	0	0
33385	Solar Energy Haus	PON 2033 OJT Incentive	9,595	9,595	0	0
34852	Association for Energy Affordability	PON 2033 OJT Incentive	10,080	10,080	0	0
36669	You Save Green Inc.	PON 2033 OJT Incentive	11,028	11,028	0	0
39169	American Solar Partners LLC	PON 2033 OJT Incentive	20,384	20,384	0	0
46815	Demarse Electric Inc.	PON 2033 OJT Incentive	29,780	29,780	0	0
46820	Tompkins Community Action	PON 2033 OJT Incentive	2,673	2,673	0	0
46909	Hawn Heating & Energy Services LLC	PON 2033 OJT Incentive	17,780	17,780	0	0
49780	SolarCity Corporation	PON 2033 OJT Incentive	157,939	157,939	0	0
49782	Upstate Spray Foam Insulation LLC	PON 2033 OJT Incentive	6,720	6,720	0	0
49783	Evoworld	PON 2033 OJT Incentive	15,719	15,719	0	0
49784	Pennbrook Energy Inc.	PON 2033 OJT Incentive	15,000	14,400	600	0
49785	Green Audit USA Inc.	PON 2033 OJT Incentive	72,131	72,131	0	0
50447	Home Performance Professionals Inc.	PON 2033 OJT Incentive	528	528	0	0
50804	Superior Energy Innovations LLC	PON 2033 OJT Incentive	5,720	5,720	0	0
52794	IGM Holdings Inc.	PON 2033 OJT Incentive	22,382	22,382	0	0

Table 4-2 continued

Identification Number	Contractor	Description	Contract Amount	Expended	Encumbered	Committed
Apprenticeships/Internships						
53620	Malcarne Contracting Inc.	PON 2033 OJT Incentive	14,210	14,210	0	0
56340	Green Power Solutions Inc.	PON 2033 OJT Incentive	8,250	8,250	0	0
56342	OnForce Solar	PON 2033 OJT Incentive	12,480	0	12,480	0
58433	Solar Project Solutions Inc.	PON 2033 OJT Incentive	27,973	27,973	0	0
28791	Cleantech Rocks	Work for Hire Activity-Survey	14,250	14,250	0	0
32594	NYS Department of Labor	NYSDOL NY Youth Works Program	233,167	233,167	0	0
39247	Meister Consultants Group, Inc.	NY-SUN PV Balance of System Training and Education Services	230,050	6,202	223,848	0
Vouchers	N/A	Certification and Accreditation (funds reclassified)		(1,925)	0	0
TOTAL APPRENTICESHIPS/INTERNSHIPS			\$2,660,513	\$2,406,792	\$251,796	\$0.00
Certification and Company Accreditation						
18165	N. American Board of Certified Energy Practitioners (NABCEP)	Clean Energy Technology Training	\$182,000	\$182,000	\$0	\$0
19844	N. American Board of Certified Energy Practitioners (NABCEP)	PO for Company Accreditation	49,999	49,999	0	0
39247	Meister Consultants Group, Inc.	NY-SUN PV BOS Training & Education	94,950	3,798	91,152	0
Vouchers	N/A	Certification and Company Accreditation		125,258	0	0
TOTAL CERTIFICATION AND COMPANY ACCREDITATION			\$326,949	\$361,055	\$91,152	\$0.00
Conferences and Technical						
22983	Building Performance Contractors Association (BPCA)	Contractor Exchange Workshops	\$150,000	\$150,000	\$0	\$0

Table 4-2 continued

Identification Number	Contractor	Description	Contract Amount	Expended	Encumbered	Committed
Conferences and Technical						
ST-9991-7	Interstate Renewable Energy Council (IREC)	TWOP 7 (Workforce Conference)	127,318	127,318	0	0
TOTAL CONFERENCES AND TECHNICAL			\$277,318	\$277,318	\$0	\$0
Curriculum						
25095	Community Power Network	PON 1816 Open Enrollment	\$296,368	\$296,368	\$0	\$0
24793	Green Light NY	PON 1816 Open Enrollment	10,875	10,875	0	0
25687	Research Foundation of SUNY	PON 1816 Open Enrollment	167,844	167,844	0	0
24917	Research Foundation of CUNY	PON 1816 Open Enrollment	119,503	119,503	0	0
32692	Building Performance Contractors Association (BPCA)	PON 2032 Technical Training	37,774	37,774	0	0
22987	SUNY Canton	PON 2011 Solar Thermal Training	107,238	107,238	0	0
22937	Northern Manhattan Improvement Corp.	PON 1816 Open Enrollment	50,000	50,000	0	0
648	Solar One	PON 1816 Open Enrollment	75,574	75,574	0	0
23883	The Outsource Center	PON 1816 Open Enrollment	40,567	40,567	0	0
26392	Syracuse University	PON 1816 Open Enrollment	24,047	24,047	0	0
22504	Sullivan County BOCES	PON 2011 Solar Thermal Training	648		0	0
22486	Ulster County BOCES	PON 2011 Solar Thermal Training	19,917	19,917	0	0
23182	Monroe Community College	PON 2011 Solar Thermal Training	68,528	68,528	0	0
24981	Pace Energy and Climate Center	PON 2034 GJGNY Needs Assessment	275,000	275,000	0	0
33907	Arthur C. Pakatar	Curriculum Gap Assessment	24,000	24,000	0	0

Table 4-2 continued

Identification Number	Contractor	Description	Contract Amount	Expended	Encumbered	Committed
31203-1	Solar One	PON 2032 Technical Training	149,436	149,436	0	0
24317	Conservation Services Group, Inc.	GJGNY Training and Implementation	108,324	108,324	0	0
TOTAL CURRICULUM			\$1,575,644	\$1,575,644	\$0	\$0
Equipment and Training Infrastructure						
31339	Institute for Building Technology and Safety	PON 2032 Technical Training	\$343,492	\$343,492	\$0	\$0
32584	Northeast Parent and Child Society	PON 2032 Technical Training	147,355	147,355	0	0
32404	NYS Weatherization Director's Association	PON 2032 Technical Training	90,204	90,204	0	0
32692	Building Performance Contractors Association (BPCA)	PON 2032 Technical Training	78,880	78,880	0	0
25685	NYS Department of Labor	Smart Board Equipment & Training	46,000	46,000	0	0
25339	Meeting Industry Experts (MIE)	Meeting Planning Services	13,610	13,610	0	0
29503	Clinton Community College	PON 1816 GJGNY Lab Houses	172,045	59,954	112,091	0
30034	Green Jobs Training Center	PON 1816 GJGNY Lab Houses	109,133	109,133	0	0
29067	Northeast Parent and Child Society	PON 1816 GJGNY Lab Houses	143,117	143,117	0	0
29533	Integral Building & Design, Inc.	PON 1816 GJGNY Lab Houses	285,088	285,088	0	0
26589	Audio Video Corporation	Smart Board Equipment & Training	23,136	23,136	0	0
31203-1	Solar One	PON 2032 Technical Training	12,003	12,003	0	0
19822	Building Performance Contractors Association (BPCA)	Survey to past HPwES participants	25,000	25,000	0	0
25095	Community Power Network	career pathways tech training solicitation	43,804	43,804	0	0

Table 4-2 continued

Identification Number	Contractor	Description	Contract Amount	Expended	Encumbered	Committed
Equipment and Training Infrastructure						
35184	SUNY Ulster	GJGNY Technical Certifications	139,718	108,529	31,189	0
35211	Building Performance Contractors Association (BPCA)	GJGNY Technical Certifications	118,871	118,871	0	0
Reclass	Reclass	Reclass GJWFD to GJWFTR	0	927	0	0
Vouchers	NA	Equipment Incentive	0	21,697	0	0
TOTAL EQUIPMENT AND TRAINING INFRASTRUCTURE			\$1,791,455	\$1,670,799	\$143,280	\$0
GRAND TOTAL			\$6,631,878	\$6,291,608	\$486,227	\$0

5 One- to Four-Family Residential

Consistent with the legislation, GJGNY services to the residential sector are delivered through successful existing programs. Free and reduced cost residential energy audits are provided through NYSERDA's HPwES program, which offers homeowners in New York State a comprehensive approach to improving energy efficiency and home comfort while saving money. Participating HPwES contractors, who are BPI GoldStar contractors, conduct home energy assessments and upgrades. Income-qualified homeowners are eligible for additional incentives to make energy improvements. GJGNY residential loans are offered through HPwES as well as NYSERDA's NY-Sun Incentive Program, Solar Thermal Incentive Program and Renewable Heat NY. NY-Sun and Renewable Heat NY also offer additional incentives for income-qualified households. Implementation of GJGNY energy efficiency program features for the residential sector began in the fourth quarter of 2010, and expanded to include renewable energy over time.

5.1 Target Audience

HPwES is a market transformation program that uses building science and a comprehensive approach to identifying and implementing energy efficiency improvements. The program is designed to reduce the energy use in existing one- to four-family homes and low-rise multi-unit residential buildings while also addressing indoor air quality and other energy-related health and safety issues. Improvements in building shells and heating systems typically result in significant cost-effective fuel savings. Energy efficiency improvements through this program include building shell measures, high-efficiency heating and cooling measures, and ENERGY STAR appliances and lighting.

The target audience for HPwES is owners of residential⁶ buildings who have incomes above 60 percent of the State median income. Residents with lower incomes may be eligible for NYSERDA's EmPower New York program or the federally funded Weatherization Assistance Program, both of which provide services at no cost to the household. Those owners are therefore not the primary audience for GJGNY, although they will not be turned away if they choose to participate. Building owners whose incomes are equal to or less than 80 percent of the State or area median income may be eligible for a discount of 50 percent of the cost of the eligible work to be performed, up to \$5,000, or up to \$10,000 for buildings with two to four units, from NYSERDA⁷ through the Assisted component of HPwES program. These owners are of

⁶ The GJGNY Act defines a residential structure as a residential building that has four or fewer dwelling units.

⁷ These incentives are provided through an Energy Efficiency Portfolio Standard, System Benefit Charge, Regional Greenhouse Gas Initiative (RGGI), or Clean Energy Fund(CEF) component of the HPwES program.

particular interest for GJGNY as LMI households. Communities in areas where energy costs are high in relation to area median income or those in non-attainment for one or more designated pollutants under the federal Clean Air Act are also targeted by the 11 CBOs conducting outreach in selected communities across the State. Additional information about CBO activities can be found in Section 8.

To qualify for a GJGNY residential loan for renewable energy systems, loan applicants must apply through the relevant NYSERDA's existing programs: NY-Sun, the Solar Thermal Incentive Program or Renewable Heat NY. The program requirements ensure proper system sizing, and also have requirements regarding installer qualifications.

5.2 Residential Energy Efficiency

5.2.1 Implementation Approach

HPwES partners with BPI GoldStar contracting firms to install comprehensive energy-efficient improvements. The program is complemented by an aggressive workforce development initiative that strengthens program delivery infrastructure by facilitating the training and certification of technicians. Additional information on workforce development activities can be found in Section 4.

Participating contractors complete energy assessments for all homes enrolled in the HPwES program. The energy assessments include taking an inventory of the current home energy systems and energy-related health and safety conditions, diagnostic testing of combustion appliances, blower-door testing for air-infiltration rates; and developing a work scope for proposed improvements and a cost and energy-savings estimate. The report for the energy assessment is provided to the homeowner and allows the contractor to recommend and discuss options for improvements that maximize energy savings and meet the household budget considerations. In addition to the cost-effective energy savings offered, the HPwES program addresses residential health and safety issues pertaining to indoor air pollutants, focusing on carbon monoxide and other pollutants associated with combustion appliances, ventilation, and moisture control. This effort increases the long-term durability of New York's housing stock by addressing such problems as ice damming, mold, and mildew.

The contractor also tests the house when work is complete to ensure a safe and healthy environment after installation of energy efficiency measures. The program offers low-interest financing and homeowner discounts to encourage comprehensive work scopes, including a higher incentive level for those

households qualifying for the Assisted component of the HPwES program. Participating households typically reduce their total energy use by 20 percent after a participating contractor has completed work on the home.

The GJGNY-supported free or reduced-cost energy assessments and low-interest financing components of HPwES were launched on November 15, 2010. Owners of residential buildings seeking services from the program can participate through one of two ways: as an individual owner or as a participant in a CBO-organized aggregation.

5.2.1.1 Individual Owner Approach

Owners of residential buildings with four units or fewer interested in receiving a free or reduced-cost home energy assessment can apply online at www.nyscrda.ny.gov/home-performance, or download an application. Alternatively, they can call 1-855-838-7818 to request an assessment application be mailed or to obtain an assessment application from a participating contractor or CBO.

An applicant who is eligible for a free or reduced-cost assessment will receive a reservation number from the application processing center with an estimated level of assessment subsidy that will be paid by NYSERDA to the contractor for a completed assessment. The final amount to be paid to the contractor will be based on verification by the contractor of the number of units or square footage of the residence. The reservation number associated with an assessment is valid for a single assessment to be completed within 90 days of issuance of the reservation. If the reservation is not used within that period, it will be eligible for reissuance if assessment funds remain available.

5.2.1.2 Aggregation Approach

Aggregation is the process of identifying a group of homeowners who agree in advance to have the same contractor or contractor team perform their assessments and any resulting work. Participating contractors agree to provide certain community benefits, which may include living wages and benefits for workers, local hiring, and preferential pricing. Aggregation provides benefits to the homeowner, such as lower costs through standardized pricing and a simplified participation process. Aggregation also provides benefits to contractors by reducing costs associated with travel and marketing, allowing more efficient use of crews and bulk material purchases and providing a ready audience of potential leads. More information on aggregation and CBOs' role in aggregation can be found in Section 8.1.4.

5.2.2 Standards for Energy Assessments and Development of Work Scopes

Energy assessments for GJGNY and resulting energy services are delivered by participating HPwES contractors possessing Participation Agreements⁸ with NYSERDA. Contractors delivering assessments and performing services must be BPI GoldStar⁹ designated. The BPI GoldStar designation includes a review of certain business standards and practices in addition to technical certification requirements.

To qualify for HPwES program incentives and financing, eligible measures must meet the program minimum efficiency and cost effectiveness requirements. In response to the record low natural gas prices, and recognizing that energy efficiency projects also provide non-energy benefits to the household, the cost effectiveness standard was adjusted in mid-2012 for Smart Energy Loans and provided customers with the ability to finance improvements when the estimated energy savings over the anticipated life of the improvements are at least 80 percent of the total loan payments. In addition, 15 percent of the project cost, up to \$2,000, related to associated health and safety measures and qualified accessories can be ignored in the cost effectiveness screening for the Smart Energy Loans. To streamline the process, a project for which at least 85 percent of the cost is designated for prequalified measures is automatically eligible for the Smart Energy loan and incentives and does not go through cost effectiveness screening. However, for OBR Loans, the monthly loan installment payment may not exceed one-twelfth of the estimated annual energy savings from the improvements over the term of the loan, as required by the GJGNY Act. Appendix C provides additional details.

NYSERDA performs quality assurance inspections on approximately 10 to 15 percent of projects to ensure contractor work meets program and BPI standards. If projects fail to meet standards, NYSERDA follows up with the contractor to ensure remediation takes place. Failure to meet BPI and program standards may result in probation, suspension, loss of the BPI GoldStar designation and/or removal from the HPwES program, in accordance with BPI and NYSERDA's procedures.

⁸ Visit nyserda.ny.gov/-/media/Files/EERP/Residential/Programs/Existing-Home-Renovations/Join-Program/hpwes-contractor-participation-agreement.pdf to view the 2016-2017 HPwES contractor Participation Agreement.

⁹ Visit <http://www.bpi.org/goldstar.aspx> for more information on the BPI GoldStar Contractor designation.

5.2.3 Energy Assessment Fees

The Act requires the program to make energy assessments available to residential buildings with one to four units. The fee for energy assessments are waived for households with income that is 200 percent of the median county household income or less. In households with income greater than 200 percent up to 400 percent of the median county household income, the applicant pays a pro rata percentage of the assessment fees. Only those households that have a county median income above 400 percent pay the full fees. HPwES makes payments directly to participating contractors.

Table 5-1 outlines assessment fees for residential buildings with single dwelling units under 3,500 square feet of above-grade conditioned space.

Table 5-1. Assessment Fee for Single Unit Buildings Under 3,500 Square Feet

Single Unit HPwES Assessment Fees (under 3,500 square feet of above grade conditioned space)		
Household Income	Cost to Customer	NYSERDA Payment to Contractor
≤200% Average Median Income (AMI)	\$0	\$250
>200 – 250% AMI	\$50	\$200
>250 – 300% AMI	\$100	\$150
>300 – 350% AMI	\$150	\$100
>350 – 400% AMI	\$200	\$50
>400% AMI	Market Rate	\$0

Table 5-2 outlines assessment fees for residential buildings with two to four dwelling units and single units over 3,500 square feet of above-grade conditioned space.

Table 5-2. Assessment Fee for 2-4 Units and Single Unit Buildings Over 3,500 Square Feet

HPwES Assessment Fees for 2-4 Units and Single Units (over 3,500 square feet of above-grade conditioned space)		
Household Income	Cost to Customer	NYSERDA Payment to Contractor
≤200% Average Median Income (AMI)	\$0	\$400
>200 – 250% AMI	\$80	\$320
>250 – 300% AMI	\$160	\$240
>300 – 350% AMI	\$240	\$160
>350 – 400% AMI	\$320	\$80
>400% AMI	Market Rate	\$0

5.2.4 Assessment Completions and Conversion to Project Completions

The GJGNY free or reduced-cost energy assessment has proven to be very popular with consumers and contractors. Through June 30, 2016, there have been a total of 131,887 applications with 125,762 approved, which corresponds to an average of more than 1,863 per month. More than 92,450 assessments have been completed, resulting in 28,421 contracts for HPwES energy upgrades. From those contracts for HPwES energy upgrades, 27,666 projects are associated with a GJGNY assessment or loan. The average time lag from assessment completion to completed work is 110 days. After accounting for the lag between completion of the assessment and completion of work, the conversion rate from assessment to work through the HPwES program is approximately 30 percent and in the past 12 months, the assessment to project conversion rate was approximately 38 percent. A 2012 evaluation indicated some of the recommended work proceeds outside the program, some with the benefit of utility rebates and some by the homeowner on their own. Among those assessment-approved and assessment-completed participants surveyed in the evaluation, nearly two-fifths (38 percent) of respondents reported that they installed program eligible energy-efficient measures outside of the program.¹⁰ Another 31 percent of customers who received an assessment complete work in the program, resulting in an estimated overall conversion rate of nearly 70 percent.

¹⁰ NYSERDA. 2012. "Process Evaluation and Market Characterization and Assessment: Green Jobs - Green New York Residential Program," nyserda.ny.gov/-/media/Files/Publications/PPSER/Program-Evaluation/2012ContractorReports/2012-GJGNY-MCA-Report.pdf

The success of this effort is attributed in large part to the experience and knowledge of the HPwES contractors. NYSERDA's HPwES program is one of the largest and longest-running programs of its kind in the U.S., and participating contractors have developed effective approaches to completing sales.

NYSERDA continues to work closely with HPwES contractors and implementation contractors to streamline program processes, including project approvals and financing. As indicated in Section 2, NYSERDA program staff meet regularly with stakeholders to identify opportunities, challenges, and mitigation strategies.

In February 2016, NYSERDA revised the audit application approval process to facilitate an automated review of applications received. Approximately 85 percent of audit applications received are approved upon submission. For the remainder, the applications are reviewed within one business day.

5.2.5 Additional Consumer Incentives

NYSERDA offers a consumer discount to eligible households equal to 10 percent of the cost of eligible measures. Availability of the discount is subject to funding availability from the Energy Efficiency Portfolio Standard for prequalified electric and natural gas measures and from the Regional Greenhouse Gas Initiative for non-electric and non-gas measures. On March 1, 2016 incentives became available through the Clean Energy Fund. NYSERDA provides participating contractors with updates on funding availability and household eligibility as necessary.

In addition, building owners with incomes equal to or less than 80 percent of the State or area median income may be eligible for a discount of 50 percent of the cost of eligible measures, up to \$5,000, or up to \$10,000 for buildings with two to four units, through Assisted HPwES. Homeowners with incomes at or below 60 percent of the State median income are eligible to be served by both EmPower New York (with no cost to the household for certain eligible measures) and Assisted HPwES. Coordination guidelines have been created to aid contractors in determining how to best coordinate services between the two programs for households who meet the eligibility criteria for both programs.

NYSERDA continues to work with other program administrators, including investor-owned and municipal gas and electric utilities and PSEG Long Island to address coordination and minimize confusion where multiple incentive opportunities are available to residential customers.

Provided that the work performed to participate in a utility rebate program meets NYSERDA's HPwES requirements and is completed by a participating HPwES contractor, the GJGNY loan may be used in coordination with the utility rebate, just as the GJGNY loan may be used in coordination with the NYSERDA incentives. Although GJGNY loans may be combined with either the NYSERDA or the utility incentives, NYSERDA and utility incentives cannot be combined with each other on the same measure.

5.3 Facilitating Loans for Residential Renewable Energy Systems

Certain renewable energy systems have become eligible for GJGNY financing at various points since program inception. Loans for renewable energy systems are subject to the same cost effectiveness requirements as loans for energy efficiency projects. Pro forma tools (spreadsheets) have been developed to standardize the process of verifying cost-effectiveness of the projects seeking financing. Though not required, households seeking to install a renewable energy system are also encouraged to have a home energy assessment done through HPwES. In fact, the NY-Sun program requires a "clipboard" energy efficiency audit, to make consumers aware of opportunities to reduce their energy consumption and demand. Undertaking energy efficiency improvements prior to installing a renewable energy system may result in the installation of a smaller, lower cost renewable energy system. The reduction in energy bills associated with the energy efficiency project may also offset some costs of the renewable energy system. Assuming the project meets cost-effectiveness requirements and can be installed within the loan cap amount, loans may be made available for a combination of energy efficiency and renewable energy work.

5.3.1 Solar PV and Other Net Metered Technologies

The amendment to the GJGNY Act of 2009, dated October 22, 2013, made the installation of energy technologies eligible for net energy metering pursuant to Section 66-j or 66-l of the Public Service Law eligible for GJGNY financing. In the residential sector, the only such technology likely to be installed at a residence is solar PV. However, in the future, if other net metered technologies to be installed in or on a residential structure¹¹ are able to be financed within the loan cap amount while meeting the cost-effectiveness criteria, NYSERDA will develop processes to include them in the financing program.

¹¹ The GJGNY Act defines a residential structure as a residential building that has four or fewer dwelling units.

Effective February 3, 2014, NYSERDA began offering the two GJGNY financing options for solar PV systems in most of the State. In July 2014, as a result of a Memorandum of Understanding between NYSERDA and PSEG Long Island, GJGNY loans also became available for solar PV projects located in the service territory served by PSEG Long Island through their solar PV incentive program.

5.3.1.1 Implementation Approach

To be eligible for a GJGNY loan, Solar PV systems must be installed by a participating contractor in good standing with the NY-Sun program. In addition to other criteria, the installer must fulfill one of the following: NABCEP (North American Board of Certified Energy Practitioners) PV Installation Professional Certification; IBEW-NECA Electrical Journeyman & Apprentice Training (International Brotherhood of Electrical Workers and National Electrical Contractors Association); or UL (Underwriters Labs) PV System Installation Certification. The contractor must submit the project package to the NY-Sun program for approval, even if there is no NY-Sun incentive available for the project. The project package must include, at a minimum, the following: project application form signed by the customer that includes certification statement that the clipboard energy efficiency audit has been performed; site plan; site photos; one or three-line drawing; shading report and estimate of annual output; and cost-effectiveness pro forma.

5.3.1.2 Additional Consumer Incentives

Consumers purchasing PV systems may use the loan in addition to receiving federal and State tax incentives and incentives offered through the NY-Sun program¹², where available (PON 2112). The loan may also be combined with NYSERDA's Affordable Solar incentive, which targets households with a total income less than 80 percent of the State or county median income. More information about NY-Sun can be found at nysERDA.ny.gov/All-Programs/Programs/NY-Sun.

¹² Incentives for NY-Sun are provided through the Renewable Portfolio Standard and the Regional Greenhouse Gas Initiative.

5.3.2 Solar Thermal Systems

Solar thermal heat or hot water systems have been an eligible measure since GJGNY loans were launched in the fall of 2010. However, they were initially eligible only when included in an eligible, cost-effective scope of energy efficiency services through HPwES. On October 17, 2014, solar thermal systems also became eligible on a stand-alone basis through NYSERDA's Solar Thermal Incentive Program.

5.3.2.1 Implementation Approach

To be eligible for a GJGNY loan, the solar thermal project must be installed by a participating contractor in good standing with NYSERDA's Solar Thermal Incentive Program. The contractor is responsible for preparing and submitting the necessary project application to NYSERDA, even if there is no incentive available. To become an eligible installer, in addition to meeting other criteria, an individual must fulfill one of the following: NABCEP (North American Board of Certified Energy Practitioners) Solar Heating Installer Certification; Journeyman who has completed an approved DOL Apprenticeship Program through the United Association of Plumbers, Fitters, Welders, and HVAC Service Techs Apprentice Program including UA approved solar thermal training; or completed a Solar Thermal Manufacturer's certification which includes 18 hours of manufacturer's specific training and demonstration of equivalent experience.

5.3.2.2 Additional Consumer Incentives

Consumers purchasing a residential solar thermal system may use the loan in addition to receiving federal and State tax incentives and incentives offered through the Solar Thermal Incentive Program¹³, if available.

5.3.3 Renewable Heating Systems (Wood Pellet Stoves)

5.3.3.1 Implementation Approach

Renewable Heat NY provides incentives toward the installed cost of high-efficiency, low-emission wood heating systems. In the residential sector, the program supports wood pellet stoves, wood pellet boilers with thermal storage, and advanced cordwood boilers with thermal storage. Replacement of wood heating systems serving as the primary heating source in a residence have been eligible for GJGNY financing as

¹³ Incentives for the Solar Thermal Incentive Program, when available, have been provided through the Renewable Portfolio Standard and the Regional Greenhouse Gas Initiative.

part of a qualified, cost-effective scope of energy efficiency services through HPwES since the loan program inception. However, on March 10, 2016, they became eligible on a standalone basis, assuming the project meets cost-effectiveness requirements. To be eligible for a GJGNY loan, the standalone system must be installed by a participating contractor in good standing with the Renewable Heat NY program.

5.3.3.2 Additional Consumer Incentives

Consumers purchasing eligible residential wood heating systems may use the loan in addition to receiving incentives offered through the Renewable Heat NY program¹⁴, where available. The loan may also be combined with NYSERDA's income-eligible pellet stove incentive, which targets households with a total income less than 80 percent of the State or county median income. Visit nyserdera.ny.gov/All-Programs/Programs/Renewable-Heat-NY to learn more about Renewable Heat NY.

5.4 Residential Loans

A significant volume of work is supported by the GJGNY financing options. More than 33 percent of HPwES projects completed in the 12 months ending on June 30, 2016, included a GJGNY loan. An unsecured consumer loan product for energy efficiency improvements for one- to four-family buildings was launched on November 15, 2010. Loan terms are offered for five, 10, and 15 years. The amount of the loan could not be in excess of \$13,000. The Power NY Act of 2011 increased this amount to \$25,000 for projects that meet higher cost-effectiveness standards. Effective January 8, 2013, the name "Unsecured Loan" was changed to "Smart Energy Loan" based upon feedback from participating contractors. The OBR Loan was launched in January 2012, four months ahead of the launch date required by the Power NY Act of 2011. Effective January 1, 2013 OBR Loan applications were processed at an interest rate of 3.49 percent, which is a modest increase from the original rate of 2.99 percent. The rate increase provided rate parity between the OBR and Smart Energy Loans and enabled NYSERDA to more fully recoup the costs for origination, servicing, and financing of OBR Loans.

¹⁴ Incentives for Renewable Heat NY are funded through the regional Greenhouse Gas Initiative.

From October 2010 through June 30, 2016, 11,477 energy efficiency loans have closed valued at over \$113 million with an additional 826 loans pending valued at over \$9 million. Furthermore, from February 2014 through June 30, 2016, 4,339 solar electric loans have closed valued over \$74 million dollars, with another 1,128 loans pending completion valued over \$19.5 million dollars. In addition, 37 loans have closed for solar thermal, wood heating systems, and combination energy efficiency and renewable energy projects totaling nearly \$600,000, with an added 10 loans valued at more than \$134,000 pending.

The majority of GJGNY loan applications, on average per month, were for the OBR Loan option immediately upon its introduction. However, due to the more restrictive cost-effectiveness requirements of the OBR Loan, this has changed over time and some customers who would have preferred to use the OBR Loan have had to use the Smart Energy Loan instead. Therefore, the Smart Energy Loan consistently represents the majority of loans closed on average per month. Over the last 12 months OBR Loans represented only 37 percent of loans closed.

Figure 5-1 and Figure 5-2 illustrate the growth in Smart Energy Loan and OBR Financing applications submitted and loans issued over the past three years.

Figure 5-1. Unsecured (Smart Energy Loans) and OBR Financing Applications

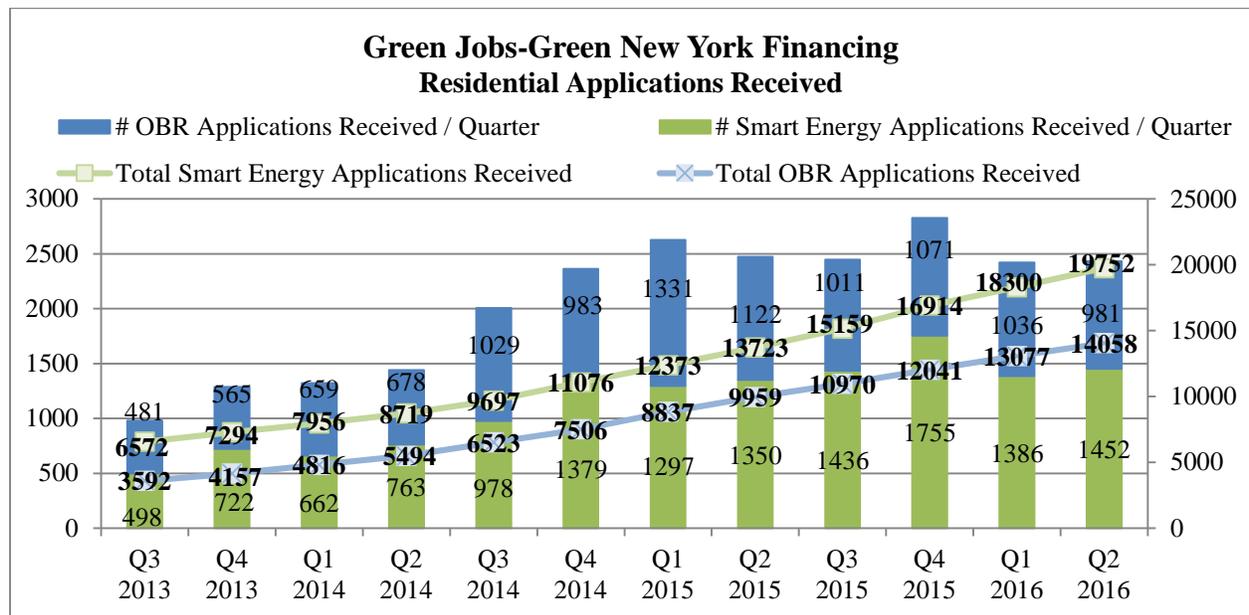


Figure 5-2. Unsecured (Smart Energy Loans) and OBR Loans Issued by Financing Type

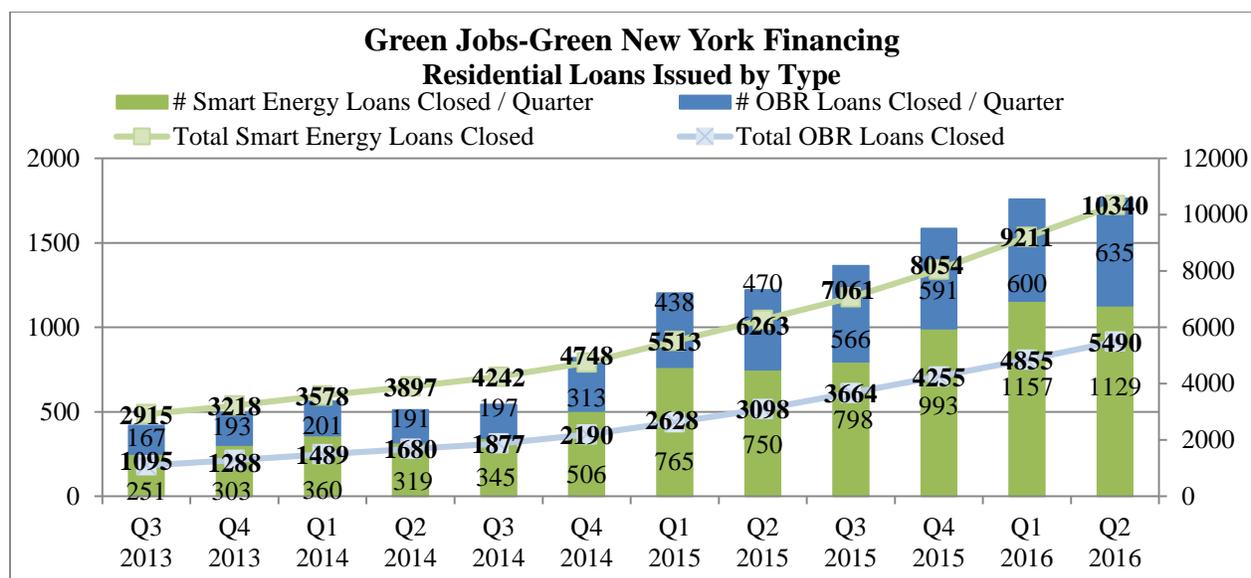


Table 5-3 summarizes loan underwriting standards used for both the Smart Energy and OBR Loans. NYSERDA has modified loan underwriting standards seven times since the launch of the program in an effort to address loan application denials and to responsibly improve the penetration of financing to consumers who would not qualify using traditional underwriting standards.

The Tier 1 loans use standard underwriting criteria relying primarily on FICO scores and debt-to-income ratios. Tier 2 expands the number of people who can qualify by substituting mortgage payment history for FICO score as a primary qualifier. In addition, Tier 2 provides alternative debt-to-income ratio requirements in recognition that the households energy costs are reduced, addressing what is currently the most common cause of loan denials. Figure 5-3 illustrates the impact of modifying the Tier 2 standards, enabling more individuals to qualify for financing. Tier 2 loans now consistently make up 15 percent of loans issued on a monthly basis. Table 5-4 summarizes metrics surrounding loan applications and loans closed through June 30, 2016.

Table 5-3. GJGN Loan Underwriting Standards as of June 30, 2016

LOAN UNDERWRITING STANDARDS		
Standard	Tier 1 Loans	Tier 2 Loans
Minimum FICO	640 (680 if self-employed for 2yrs+) (720 if self-employed < 2yrs)	540
Mortgage payment history	None	Current on all mortgage payments, if any (as reported on the credit report), for the past 12 months. No mortgage payments more than 60 days late during the past 24 months.
Max Debt-to-Income Ratio	Up to 50%	Up to 70% for FICO 540-599
		Up to 75% for FICO 600-679
		Up to 80% for FICO 680+
		Up to 100% for applicants who are qualified as owner-occupants for Assisted Home Performance with ENERGY STAR Subsidy for the subject property of the loan. (\$5,000/50%)
Bankruptcy	No bankruptcy, foreclosure, or repossession within last seven years	No bankruptcy, foreclosure, or repossession within last two years
Judgments	No combined outstanding collections, judgments, charge-offs, or tax liens > \$2,500	

Figure 5-3. GJGN Loans Issued by Tier

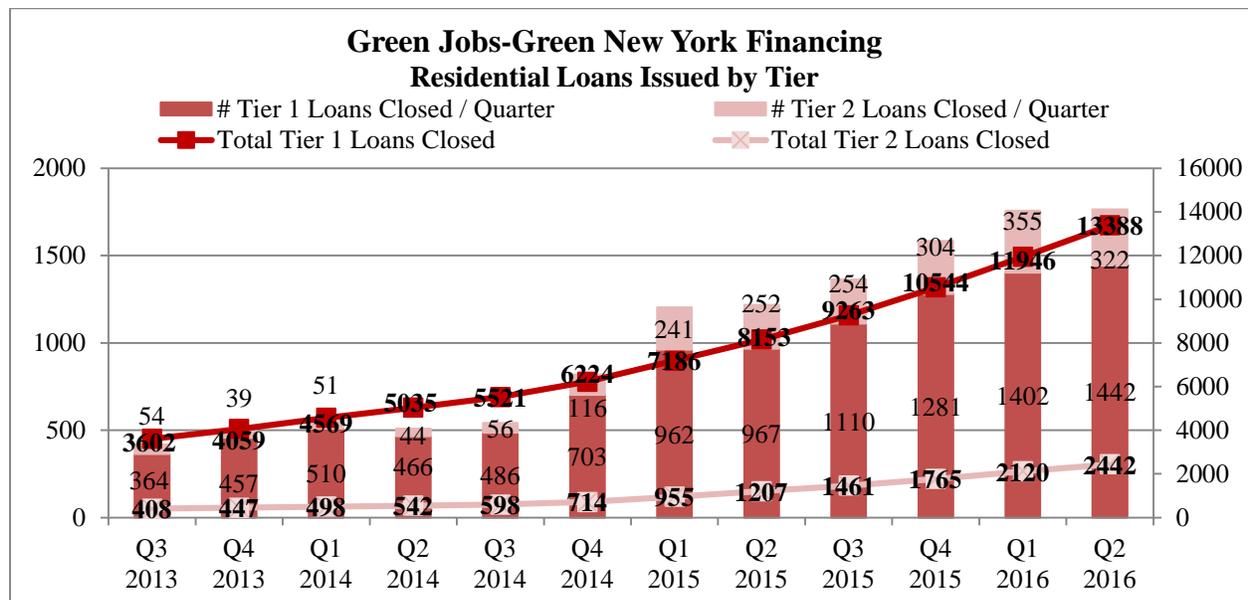


Table 5-4. GJGNY Residential Financing Summary as of June 30, 2016

Summary of Loans by Type						
GJGNY Loan Type	Applications Received	Applications Approved	Loans Closed	Loans Closed	Loans Awaiting Closing	Loans Awaiting Closing
	(Number)	(Number)	(Number)	(Dollar Value)	(Number)	(Dollar Value)
EE Smart Energy Loan	16,235	11,774	8,192	\$76,582,831	673	\$6,336,422
EE On-Bill Recovery Loan	9,133	5,984	3,285	\$36,898,132	153	\$2,801,935
Total	25,368	17,758	11,477	\$113,480,963	826	\$9,138,357
PV Smart Energy Loan	3,432	3,166	2,118	\$35,413,104	454	\$7,731,899
PV On-Bill Recovery Loan	4,748	4,086	2,198	\$38,198,988	669	\$11,269,440
Total	8,180	7,252	4,316	\$73,612,092	1,123	\$19,001,339
EE & PV Smart Energy Loan	67	49	18	\$333,181	2	\$34,169
EE & PV On-Bill Recovery Loan	174	86	5	\$110,783	3	\$48,234
Total	241	135	23	\$443,964	5	\$82,403
RHNY Smart Energy Loan	11	11	7	\$112,399	3	\$35,819
RHNY On-Bill Recovery Loan	1	1	1	\$13,445	0	\$0
Total	12	12	8	\$125,844	3	\$35,819
ST Smart Energy Loan	7	7	5	\$24,165	2	\$26,117
ST On-Bill Recovery Loan	2	2	1	\$4,830	0	\$0
Total	9	9	6	\$28,995	2	\$26,117
Grand Total	33,810	25,166	15,830	\$187,691,857	1,959	\$28,284,035

Table 5-4 continued

Summary of Smart Energy and On-Bill Recovery Tiers				
Smart Energy		Financing Summary	On-Bill Recovery	
Tier 1	Tier 2		Tier 1	Tier 2
8,689	1,651	Loans Closed	4,699	791
\$94,902,801	\$17,562,879	Value	\$64,559,869	\$10,666,308
\$10,922	\$10,638	Average Loan	\$13,739	\$13,522
13.2 Years	14 Years	Average Term	14.7 Years	14.7 Years
N/A	N/A	2.99%	17.54%	11.88%
85.22%	82.86%	3.49%	82.46%	88.12%
14.78%	17.14%	3.99%	N/A	N/A
79.35%		Approval Rate*	76.37%	
15.21%		Denial Rate*	19.27%	
5.45%		Denied Tier 1, didn't pursue Tier 2*	4.37%	
* Does not include applications pending review or withdrawn.				
Reasons for Denial by Percentage				
Smart Energy		Reason for Denial	On-Bill Recovery	
31.11%		Debt Ratio	32.57%	
29.19%		Credit Score	28.78%	
11.34%		Bankruptcy/Foreclosure/Repo	9.13%	
26.60%		Collections/Judgments/Charge-offs	28.09%	
1.77%		Other	1.43%	
100%		Total	100%	

Table 5-4 continued

Default Analysis									
Smart Energy				120+ Days Past Due		On-Bill Recovery			
Tier 1		Tier 2				Tier 1		Tier 2	
93	\$851,211	41	\$313,970			73	\$837,500	21	\$247,096
On-Bill Recovery Utilities									
On-Bill Recovery Utility		Applications Received	Total Loans Closed		Total Loans in Process		Utility Progress towards Initial Cap (.5%)*		
Central Hudson Gas & Electric		1,209	408	\$4,866,519	576	\$6,841,586	37.8%		
Consolidated Edison		1,953	571	\$8,216,589	1051	\$14,047,319	6.2%		
Long Island Power Authority		6,491	2,755	\$43,574,235	4,240	\$62,947,482	75.8%		
National Grid		3,551	797	\$7,933,460	1216	\$12,488,616	14.4%		
New York State Electric & Gas Corp.		1,936	600	\$6,573,627	783	\$8,843,014	16.7%		
Orange & Rockland Utilities		659	282	\$3,415,489	375	\$4,567,093	33.4%		
Rochester Gas & Electric		439	77	\$646,258	132	\$1,226,888	6.5%		
TOTAL		16,238	5,490	\$75,226,177	8,373	\$110,961,999	20.7%		
* A 0.5 percent initial cap was placed on the number of accounts eligible for On-Bill Recovery Loans in each Utility service territory. The percentage indicates Utility progress toward meeting the initial 0.5 percent cap.									

5.5 Budget, Goals, and Metrics

Table 5-5 describes the One- to Four-Family Residential budget, and Table 5-6 describes its goals and metrics, respectively.

Table 5-5. One- to Four-Family Residential Budget

Component	Budget	Expended	Encumbered	Committed	Balance
Energy Assessments	\$26,186,702	\$24,449,570	\$0	\$1,714,651	\$22,481
Assessment Implementation and Quality Assurance	1,000,000	1,000,000	0	0	0
Financing					
Loans	59,551,564	71,271,558*	106,000	23,987,500	(45,210,056)
Implementation		9,207,291	89,271	100,000	
TOTAL	\$86,738,266	\$105,928,419	\$195,271	\$25,802,151	(\$45,187,575)
<p>Loans Expended amount is net of loan repayments made through reporting period and includes bond proceeds, less bond issuance cost.</p> <p>Expended: Contractor Invoices and loans processed for payment by NYSERDA.</p> <p>Encumbered: Remaining funding obligated under a contract, purchase order, incentive award, or loan.</p> <p>Committed: Planned funding for contracts awarded and under negotiation; loans approved; and planned funding under active development through open solicitations with upcoming proposal due dates.</p>					

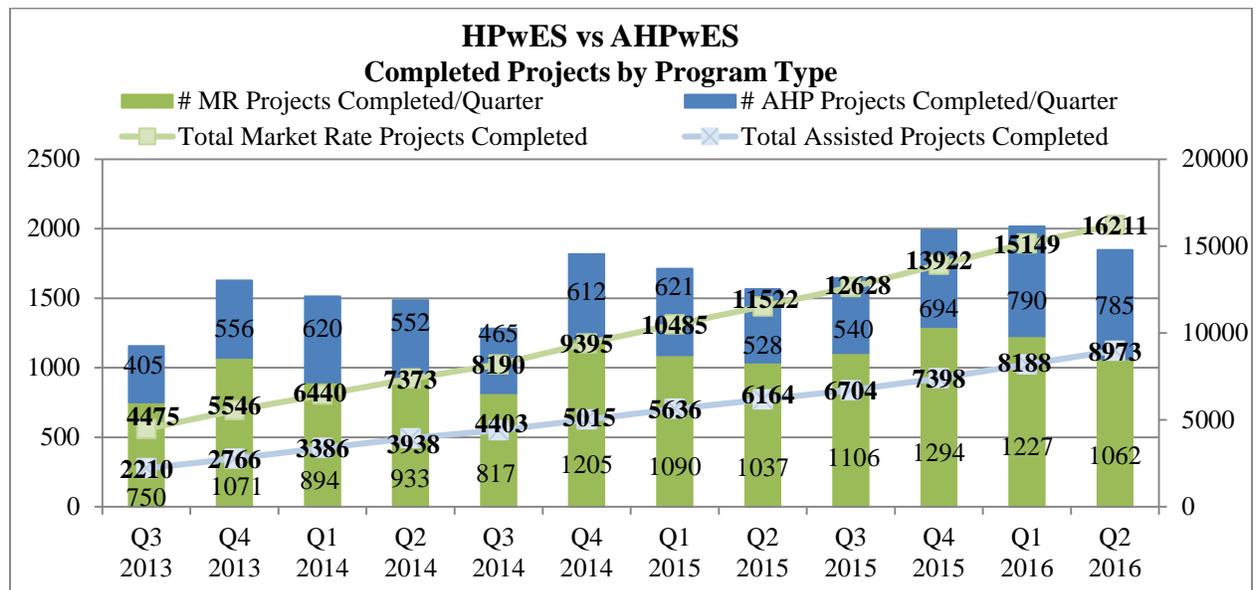
Table 5-6. One- to Four-Family Residential Buildings Goals and Metrics

Metric	Market Rate	Affordable	Total	Goals	Progress Toward Goals
Assessment Applications (number)			131,887		
Assessments Complete (number)			92,450	100,000	92%
Projects Contracted (units)			28,421		
Projects Completed (units)	18,221	9,445	27,666	34,200	81%
1st Year Net KWh Savings (installed)	7,247,998	4,481,379	11,729,377		
1st Year Net MMBtu Savings (installed)	602,761	298,801	901,562		
Estimated Annual Bill Savings (installed)	\$15,798,859	\$7,279,380	\$23,078,239		
Estimated Annual KWh Savings/unit (installed) ^a	442	527	471	688	68%
Estimated Annual MMBtu Savings/unit (installed) ^a	37	35	36	31	117%
Estimated Annual Dollar Savings/unit (installed) ^a	\$867	\$771	\$834	\$675	124%
Loans Issued/Closed (number) ^b	7,887	3,590	11,477		
Value of Loans ^c	\$86,966,083	\$26,514,880	\$113,480,963		
Potential lifetime savings of assessment projects and loan projects	\$355,474,330	\$160,146,360	\$515,620,690		
Estimated lifetime savings of loan projects only	\$209,958,293	\$76,670,726	\$286,629,019		
^a Projects that receive GJGNY-supported assessments and/or financing may also receive incentives through Energy Efficiency Portfolio Standard (EEPS) and/or utility programs, such that projects' energy savings may not all be attributable solely to GJGNY. ^b The amount shown here is the total number of energy efficiency loans. ^c The amount shown here is the total value of energy efficiency loans closed as of June 30, 2016 which includes loans not yet invoiced as of June 30, 2016.					

Since program launch, 27,046 projects associated with a GJGNY assessment or loan have been completed, representing a total of 27,666 individual housing units. An additional 12,043 projects were completed during this period without the benefit of a GJGNY assessment or loan. This number may represent households who are not eligible for a free or reduced-cost assessment and also chose not to use program financing. The number also represents projects that were initiated prior to November 2010. In addition, 4,445 projects have been completed through the Low-Rise Program. Since September 2011, 77 percent of the completed HPwES projects originated from a GJGNY assessment.

Figure 5-4 illustrates an increase in Assisted HPwES project completions over time with 556 Assisted HPwES completions for fourth quarter 2013 compared to 785 for the second quarter of 2016, with increases in the annual completions each year. Assisted HPwES has also grown as a percentage of total project completions. Whereas Assisted HPwES projects accounted for only 17 percent of total project completions in the fourth quarter of 2010 (at the launch of GJGNY), Assisted HPwES projects accounted for 42 percent of project completions in the second quarter of 2016, and 36 percent of total project completions since the GJGNY program launch. The increase may be attributed to a number of factors, including the free assessment, availability of GJGNY financing, CBO and contractor outreach, and an improved economy compared to 2010.

Figure 5-4. HPwES and Assisted HPwES Completed Projects, by Comparison



5.6 One- to Four-Family Residential Contracts

External contracts related to the implementation of the GJGNY Program in the residential sector are detailed in Table 5-7.

Table 5-7. One- to Four-Family Residential Contracts

Identification Number	Contractor	Description	Contract Amount	Expended	Encumbered	Committed
Energy Assessments						
AGGREGATED ENERGY ASSESSMENTS			N/A	\$24,449,570	\$0	\$1,714,651
Assessment Implementation and Quality Assurance						
PO- 32323	Conservation Services Group	Energy Audit Implementation	\$317,746	317,746	0	0
PO- 32323-1	Conservation Services Group	Energy Audit Implementation	\$183,844	183,844	0	0
PO- ST9802-1	Conservation Services Group	Energy Audit Implementation	\$483,117	483,117	0	0
PO- ST10743-1	Harris Beach PPLC	Bond Counsel	\$10,000	10,000	0	0
PO- ST9940-1	Honeywell International Inc.	Quality Assurance	\$5,293	5,293	0	0
TOTAL AUDIT IMPLEMENTATION AND QUALITY ASSURANCE			\$1,000,000	\$1,000,000	\$0	\$0
Loan Activity						
Aggregated Loans Issued	Various	Loans Issued	N/A	\$187,696,651	\$0	\$23,987,500
Aggregated Loan Repayments	Various	Loan Repayments	N/A	(\$119,273,038)	\$0	\$0
NET AGGREGATED LOAN ACTIVITY			N/A	\$68,423,613	\$0	\$23,987,500
Bond Issuance Costs						
PO- 35984	Fulbright & Jaworski LLP	Bond Counsel Services	\$29,549	\$29,549	\$0	\$0
PO- 93881	Bergmann Associates	Stamped EFS Engineering Report for FY16-17 Bonds	\$5,900	\$5,900	\$0	\$0
PO- 72571	Bank of New York	Trustee Services for 2013A Bonds	\$57,000	\$8,000	\$49,000	\$0
PO- 75651	Bank of New York	GJGNY Bond Issue Costs 2015	\$62,000	\$5,000	\$57,000	\$0
Bond Issuance Costs, no PO#	NYS Environmental Facilities Corp.	Bond Issuance Costs	N/A	\$574,102	\$0	\$0
	Hinckley Allen & Snyder LLP	Bond Issuance Costs		\$3,000	\$0	\$0
	Multiple	Bond Issuance Costs		\$2,222,394	\$0	\$0
PO- 30985	Fitch Ratings, Inc.	Issuance of NYSERDA 2012 GJGNY Energy Efficiency Bonds	\$45,000	\$45,000	\$0	\$0

Table 5-7 continued

Identification Number	Contractor	Description	Contract Amount	Expended	Encumbered	Committed
Bond Issuance Costs						
PO- ST10743-1	Harris Beach PLLC	Bond Counsel	\$125,000	\$125,000	\$0	\$0
PO- 33119	NetRoadshow, Inc.	Establishment of portal communication between NYSERDA and bond rating agency	\$5,000	\$5,000	\$0	\$0
PO- 72032	Bank of New York	Trustee Services for 2014A Notes	\$5,000	\$5,000	\$0	\$0
PO- 73313	Kroll Bond Rating Agency Inc.	Bond Rating Services	\$12,500	\$12,500	\$0	\$0
PO- 80732	Dentons US LLP	Bond Counsel Services	\$13,000	\$12,917	\$83	\$0
TOTAL BOND ISSUANCE COSTS			\$359,949	\$3,053,362	\$106,083	\$0
Financing Implementation						
PO- 21769	Concord Servicing Corporation	RES Master Loan Servicer for GJGNY		\$1,885,119	\$0	\$0
15518	Energy Finance Solutions	Origination Fees		\$3,065,600	\$0	\$0
		LIPA Fees		\$14,500	\$0	\$0
		Ramp-up / Development costs for GJGNY & OBR programs		\$87,999	\$0	\$0
OBR Billing Agreements, no PO#	Central Hudson Gas & Electric	Utility Fees for OBR Loans	N/A	\$86,499	\$0	\$0
	Consolidated Edison			\$132,353	\$0	\$0
	LIPA			\$670,736	\$0	\$0
	Niagara Mohawk dba National Grid			\$152,530	\$0	\$0
	NYSEG			\$121,547	\$0	\$0
	Orange & Rockland Utilities			\$59,967	\$0	\$0
	Rochester Gas & Electric			\$13,538	\$0	\$0
PO-35421	First Associates Loan Servicing	Backup Loan Servicer for GJGNY Loan Program	\$116,500	\$73,620	\$42,880	\$50,000
PO- 27533	NY Title Research Corp.	OBR Last Owner Searches	\$59,860	\$59,860	\$0	\$0

Table5-7 continued

Identification Number	Contractor	Description	Contract Amount	Expended	Encumbered	Committed
Financing Implementation						
PO- 31684	Zodiac Title Services	OBR Last Owner Searches & Recording Services	\$100,000	\$100,000	\$0	\$0
PO- 31684-1	Zodiac Title Services	OBR Last Owner Searches & Recording Services	\$26,670	\$26,670	\$0	\$0
PO- 33527	Advantage Title Agency, Inc.	OBR Last Owner Searches & Recording Services	\$75,000	\$75,000	\$0	\$0
PO- 36864	Advantage Title Agency, Inc.	OBR Last Owner Searches & Recording Services	\$333,333	\$330,471	\$2,862	\$0
PO- 38299	Frontier Abstract & Research Services	OBR Last Owner Searches & Recording Services	\$333,332	\$329,710	\$3,622	\$0
PO- 37723	Stewart Title Insurance Company	OBR Last Owner Searches & Recording Services	\$333,332	\$330,082	\$3,250	\$0
Title Company pass through fees, no PO#	NY Title Research Corp.	OBR Last Owner Searches & Recording Services	N/A	\$8,563	\$0	\$0
	Zodiac Title Services	OBR Last Owner Searches & Recording Services		\$56,383	\$0	\$0
	Advantage Title Agency, Inc.	OBR Last Owner Searches & Recording Services		\$325,190	\$0	\$0
	Frontier Abstract and Research Services	OBR Last Owner Searches & Recording Services		\$118,754	\$0	\$0
	Stewart Title Insurance Company	OBR Last Owner Searches & Recording Services		\$146,462	\$0	\$0
PO- 40738	Energy Improvement Corporation	Energize New York Program Support	\$50,000	\$50,000	\$0	\$0
PO- 20662	Energy Programs Consortium	Phase I	\$6,250	\$6,250	\$0	\$0
PO- 18591	Hawkins Delafield & Wood	Legal financial advisory services for GJGNY	\$313,998	\$313,998	\$0	\$0

Table 5-7 continued

Identification Number	Contractor	Description	Contract Amount	Expended	Encumbered	Committed
Financing Implementation						
PO- 19923	Lamont Financial Services Corporation	Financial Advisor Services	\$327,050	\$326,064	\$986	\$0
PO- 19923-1	Lamont Financial Services Corporation	Financial Advisor Services	\$50,000	\$14,412	\$35,588	\$50,000
PO- 26143	Equifax Credit Marketing Services	Annual Subscription to CreditForecast.com 2011-12	\$20,000	\$20,000	\$0	\$0
TOTAL FINANCING IMPLMENTATION			\$2,145,325	\$9,001,874	\$89,188	\$100,000
GRAND TOTAL			\$3,505,273	\$105,928,419	\$195,271	\$25,802,151

6 Multifamily Energy Performance Portfolio

NYSERDA offers a portfolio of programs and incentives for owners, facility managers, developers, and condo/co-op boards of multifamily buildings with five or more units in New York State. NYSERDA's programs facilitate assessments, funding and implementation of energy efficiency upgrades that improve building performance and save money. Implementation of the approved GJGNY Multifamily Buildings initiative began in the third quarter of 2010.

6.1 Target Audience

The needs of the multifamily residential sector are addressed by working with developers, building owners, and their representatives to improve the energy efficiency, health, safety, and security of multifamily buildings.¹⁵ The program identifies and targets those potential participants¹⁶ who are committed to the implementation of energy-related improvements. As part of the GJGNY marketing and outreach efforts, provisions have been made to encourage referrals from CBOs.

6.2 Implementation Approach

Through NYSERDA's Multifamily Energy Performance Portfolio (MEPP), GJGNY provides co-funding for comprehensive energy assessments and the development of an Energy Reduction Plan (ERP).¹⁷ The availability of GJGNY co-funded assessments began in September 2010, and GJGNY financing for the implementation of energy improvements in multifamily buildings was launched in June 2011. MEPP is a comprehensive program that serves market-rate and LMI projects using a common process and relies on a network of energy service contractors who have demonstrated their ability to provide building performance services to multifamily buildings. These contractors are identified as MEPP Partners and must be employed by MEPP participants to complete specific building performance services, such as those outlined in the ERP.

¹⁵ According to the GJGNY Act, a multifamily structure is defined as a multi-unit residential building with five or more dwelling units. A multifamily project may include a single multifamily structure or a group of multifamily structures.

¹⁶ Eligibility to apply and participate is limited to building owners and entities authorized by owners to contract for the provision of qualified energy efficiency services. Singular-dwelling unit residents or owners are not eligible to separately participate.

¹⁷ An Energy Reduction Plan (ERP) identifies the set of cost-effective energy-related improvements to be installed and provides information necessary to guide installation of those measures. The ERP includes a detailed description of the proposed work scope with the associated costs, projected energy saving, and an outline for how costs will be financed. This plan includes a proposed schedule for construction.

NYSERDA manages GJGNY-funded services as a seamless part of the MEPP process, regardless of whether participants intend to access MEPP implementation incentives, utility program rebates, or other financial assistance, or whether participants intend to fund a portion or all of the energy-related improvements through GJGNY financing. To promote participation within the multifamily sector, NYSERDA uses a number of marketing and educational tools. For example, morning presentations, or “Power Breakfasts,” are offered statewide to promote and educate the public about the suite of multifamily programs offered through NYSERDA’s MEPP.

NYSERDA continues to look for areas of improvement for programs. As noted in last year’s annual report, the GJGNY multifamily team looked to expedite the contracting process at NYSERDA to reduce processing times and promote customer service. The team continues to work on similar intervention strategies to eliminate consumer confusion and streamline participation.

6.3 Assessment Fees

Co-funding of the energy assessment(s) and development of ERPs is offered in two tiers. The tiers are based on household income, with a higher level of funding available to buildings that satisfy NYSERDA’s affordable housing criteria. To be eligible as an affordable housing project, the applicant must document that at least 25 percent of the residential dwelling units are occupied by families earning no more than 80 percent of the State or area median income, whichever is higher. NYSERDA allows reliance upon certain proxies to document compliance with this definition. Those proxies are specified in MEPP program documentation. Current proxies include previously completed household income verification by housing regulators such as NYS Homes and Community Renewal, New York City’s Housing Preservation and Development, the NYS Housing Finance Agency, and the U.S. Department of Housing and Urban Development (HUD).

Only one ERP is developed per project; however, a single project may include multiple buildings. The co-funding amount is dependent on project size, and whether the building is a “firm gas” customer or a non-firm gas-heated building that may also use another fuel as its primary heating fuel. To be eligible to receive this co-funding, the participant must use an MEPP Partner to complete the assessment and ERP. The co-funding amounts offered for completion of the assessments and ERPs are listed and specified in the MEPP program documentation (Table 6-1).

Table 6-1. GJGNY Multifamily Energy Performance Assessment Co-funding

Affordable		Market Rate	
Firm Gas*	Non-Firm Gas	Firm Gas*	Non-Firm Gas
(per unit)	(per unit)	(per unit)	(per unit)
\$75.00	\$60.00	\$52.50	\$37.50
* A firm gas project is defined as a project in which all buildings within a project pay into the System Benefits Charge fund through a firm gas heating rate as defined by the participant's utility for their primary space heating fuel.			

6.4 Additional NYSERDA Incentives

NYSERDA offers additional incentives to install eligible measures outlined within the ERP. Each incentive is subject to funding availability from the Energy Efficiency Portfolio Standard or Regional Greenhouse Gas Initiative. Through MEPP, per unit incentives are available for projects predicted to achieve the 15 percent energy reduction threshold. Additional performance payments may apply in the case of eligible projects predicting and achieving savings above the 15 percent energy reduction threshold. Incentives are paid at specified stages of a project's completion. Incentive amounts are detailed in Table 6-2.

Table 6-2. Multifamily Energy Performance Incentive Schedule

Affordable		Market Rate	
Firm Gas*	Non-Firm Gas	Firm Gas*	Non-Firm Gas
(per unit)	(per unit)	(per unit)	(per unit)
\$875.00	\$690.00	\$597.50	\$262.50
* A firm gas project is defined as a project in which all buildings within a project pay into the System Benefits Charge fund through a firm gas heating rate as defined by the participant's utility for their primary space heating fuel.			
Performance Payment (per unit) ^a			
Tier	Estimated Energy Reduction ^b		Applicable Performance Payment
1	20-22%		\$200.00
2	23-25%		\$250.00
3	26-28%		\$300.00
4	29%+		\$350.00
^a The Performance Payment applies in the case of eligible projects predicting and achieving savings above the 15 percent program threshold. ^b MPP energy reduction is based on source energy. NOTE: A project's incentive may be reduced based on the cost and/or cost-effectiveness of the recommended upgrades.			

MEPP also offers incentives through the Advanced Submetering Program (ASP). ASP serves master-metered rental buildings, cooperatives, and condominiums across the State, providing incentives for the installation of advanced submeters and master meters as well as energy efficient refrigerators and in-unit lighting. Building owners of rental properties participating in this program, including rented co-op and condo units, are required to offer new ENERGY STAR certified refrigerators as replacements for refrigerators that are 10 years old or older, at no cost to the tenants.

6.5 Financing

NYSERDA launched the GJGNY Multifamily Financing Program in June 2011. GJGNY financing is available to multifamily building owners with an approved NYSERDA assessment. Building owners may work with a commercial lender of their choice. NYSERDA contracts directly with the lender. NYSERDA provides 50 percent of the principal of the loan made to support the installation of the improvements contained in the pre-approval document at two percent interest, up to \$5,000 per apartment or \$500,000 per building. The lender provides the remaining principal of the loan at the market rate. The lender collects all loan payments and remits to NYSERDA its share of the loan. NYSERDA uses these funds to continue further lending activities. By participating in the loan program, New York State lenders are able to offer blended interest rates at below market rate. As of July 29, 2016, 23 loans totaling \$12,099,798 have been issued.

6.6 Coordination with Other Program Administrators

NYSERDA coordinates with the NYS Homes and Community Renewal's WAP, NYC Housing Preservation and Development (HPD), HUD, and others to leverage additional funding, as appropriate.

NYSERDA continues to work with utility program administrators to address coordination issues and minimize confusion when multiple incentive opportunities are available to customers. If the multifamily building owner chooses not to participate in NYSERDA's MEPP, the owner may elect to participate in a utility rebate program. In this case, the GJGNY loan may be used in coordination with the utility rebate(s), provided a building assessment has been completed that meets MEPP standards. Although GJGNY loans may be combined with either the NYSERDA or utility incentives, NYSERDA and utility incentives cannot be combined with each other to cover the same measure. The GJGNY loan amount is determined by netting out all applicable utility or NYSERDA incentives at the measure level from the total cost of the work.

6.7 Budget, Goals, and Metrics

Table 6-3 and 6-4 describe the MEPP budget and goals and metrics, respectively.

Table 6-3. Multifamily Energy Performance Portfolio Budget

Component	Budget	Expended	Encumbered	Committed	Balance
Energy Assessments	\$3,800,000	\$2,962,635	\$449,960	\$0	\$387,405
Implementation and Quality Assurance	1,618,920	1,399,984	16	0	218,920
Financing					
Loans	4,645,749	1,910,678*		0	2,735,071
Implementation	277,420	151,228	154,750	0	(28,558)
TOTAL	\$10,342,089	\$6,424,524	\$604,726	\$0	\$3,312,839
<p>* Loans Expended amount is net of loan repayments made through reporting period. Expended: Contractor Invoices and loans processed for payment by NYSERDA. Encumbered: Remaining funding obligated under a contract, purchase order, incentive award, or loan. Committed: Planned funding for contracts awarded and under negotiation; loans approved; and planned funding under active development through open solicitations with upcoming proposal due dates.</p>					

Table 6-4. Multifamily Energy Performance Portfolio Goals and Metrics

Metric	Market Rate	Affordable	Total	Goals	Progress Toward Goals
Assessment Applications Received (number)	135	189	324	500	65%
Assessments Complete (number)	135	189	324	400	81%
Projects Contracted (units)	135	189	324	500	65%
1st Year Net KWh Savings (committed) *	15,859,969	38,042,070	53,902,039		
1st Year Net MMBtu Savings (committed) *	349,694	473,261	822,955		
Estimated Annual Bill Savings (committed) *	14,984,724	20,279,661	35,264,385		
Projects with Installed measures (units)	17,024	20,563	37,587		
1st Year Net KWh Savings (installed) *	12,376,367	32,470,199	44,846,566		
1st Year Net MMBtu Savings (installed) *	277,436	360,673	638,109		
Estimated Annual Bill Savings (installed) *	11,888,401	15,455,166.63	27,343,568		
Estimated Annual KWh Savings/unit (installed)	727	1,579	2,306		
Estimated Annual MMBtu Savings/unit (installed)	16	18	34		
Estimated Annual Dollar Savings/unit (installed)	\$698	\$752	\$1,450		
Loans Issued (number)			23		
Value of Loans			\$12,099,797.00		
* Projects that receive GJGNY-supported assessments and/or financing may also receive incentives through Energy Efficiency Portfolio Standard (EEPS), Regional Green House Gas Initiative and/or utility programs, such that projects' energy savings may not all be attributable solely to GJGNY.					

6.8 Multifamily Energy Performance Portfolio Contracts

External contracts related to the implementation of the GJGNY Program in the multifamily sector are detailed in Table 6-5.

Table 6-5. Multifamily Energy Performance Portfolio Contracts

Identification Number	Contractor	Description	Contract Amount	Expended	Encumbered	Committed
Energy Assessments						
AGGREGATED ENERGY ASSESSMENTS			\$3,367,510	\$2,962,635	\$449,960	\$0
Assessment Implementation and Quality Assurance						
PO-18649	TRC	Implementation	1,233,514	1,233,497	16	0
PO-ST9941	Taitem	Quality Assurance	152,551	152,551	0	0
PO-ST9941-1	Taitem	Quality Assurance	13,935	13,935	0	0
TOTAL ASSESSMENT IMPLEMENTATION AND QUALITY ASSURANCE			\$1,400,000	\$1,399,984	\$16	\$0
Loan Activity						
Aggregated Loans Issued			3,834,686	3,834,686	0	0
Aggregated Loan Repayments				(1,924,008)	0	0
NET AGGREGATED LOAN ACTIVITY			\$3,834,686	\$1,910,678	\$0	\$0
Financing Implementation						
PO-18591	Hawkins Delafield & Wood	Legal financial services	81,858	81,858	0	0
PO-19923	Lamont Financial Services	Financial advisor services	56,420	56,420	0	0
PO-20662	Energy Program Consortium	Development of a multistate financing structure	2,500	2,500	0	0
PO-25909	Concord Servicing Corp.	MF master loan servicer	150,000	2,385	147,615	0
PO-38299	Frontier Abstract & Research Services	On-bill recovery program title	3,333	2,857	477	0
PO-36864	Advantage Title Agency	On-bill recovery title search	3,333		3,333	0
PO-37723	Stewart Title Insurance Company	On-bill recovery title search	3,333	42	3,292	0
PO-60714A	Dentons US LLP	Bond Counsel Services	5,200	5,167	33	0
TOTAL FINANCING IMPLEMENTATION			\$305,978	\$151,228	\$154,750	\$0
GRAND TOTAL			\$8,908,173	\$6,424,524	\$604,726	\$0

7 Small Commercial Energy Efficiency Program

NYSERDA's Small Commercial Energy Efficiency Program offers both technical assistance and financial assistance to help small businesses and not-for-profit organizations improve their energy efficiency and reduce their energy costs. This program offers free assessments to help identify economically viable improvements, (e.g., lighting, motors or thermostats) that may yield substantial annual energy savings and two low-interest loan options to finance energy efficiency projects. The first option is OBR, which makes it possible for small businesses and not-for-profit organizations to use the savings on their energy bills to pay for their energy efficiency upgrades. The second option is the Participation Loan, where NYSERDA partners with lenders across New York State to help small businesses and not-for-profits access low-interest financing for energy efficiency improvements. Implementation of this program began in the first quarter of 2011, when it was known as the Small Business/ Not-for-Profit Energy Efficiency Financing Program.

7.1 Target Audience

As noted above, the target audience for the small commercial program offerings is small businesses and not-for-profit organizations within New York State boundaries.

Energy audits are the technical assistance portion of this program offering. The energy audit program component is available to small businesses and not-for-profit customers that have 10 employees or fewer and an average annual electric demand of less than 100 kW.

In June 2011, NYSERDA began offering Participation Loans to small businesses with 100 employees or fewer and to not-for-profits with any number of employees, which have Qualified Energy Assessments.¹⁸ Small businesses and not-for-profits must own, lease, or manage the building that the organization uses or

¹⁸ Qualified Energy Assessments include either 1) a Full Walkthrough Energy Assessment that provides customers with energy use information, a set of recommendations for Qualified Energy Efficiency Services, installation cost estimates, and associated energy and cost savings estimates; or 2) a Technology or Equipment Specific Commercial Assessment that provides energy use information, recommendations on one or more specific building systems, equipment replacement or upgrade opportunities, and associated energy and cost savings estimates. Qualified Energy Assessments must be provided by Qualified Energy Consultants and must meet NYSERDA's standards for small commercial energy assessments.

occupies and must have the authority to contract for the provision of Qualified Energy Efficiency Services¹⁹ to the building. If the small business or not-for-profit leases or manages all or part of a building, it must obtain permission from the building owner to seek energy efficiency financing through this program offering.

In June 2012, the program began offering OBR Loans to small businesses and not-for-profits that meet GJGNY eligibility requirements, meet NYSERDA's underwriting criteria, and have utility accounts with one of the following participating utilities: Central Hudson, Con Edison, Long Island Power Authority, National Grid (Upstate New York customers only), New York State Electric and Gas Corporation, Orange and Rockland, or Rochester Gas and Electric.

7.2 Implementation Approach

NYSERDA offers eligible small business and not-for-profit customers Qualified Energy Assessments from competitively selected Qualified Energy Consultants.²⁰ GJGNY currently allows small business and not-for-profit customers to use Qualified Energy Assessments provided by NYSERDA, utility service providers, or Qualified Energy Consultants as the basis of an application for financing, provided the energy assessment meets NYSERDA's standards for small commercial energy assessments found in the NYSERDA Small Commercial Energy Efficiency Program Energy Assessment and Request for Financing Package.²¹ NYSERDA enters into agreements with lenders to provide small businesses and not-for-profits with access to low-interest energy efficiency financing through either the Participation Loan or OBR Loan.

¹⁹ Qualified Energy Efficiency Services are modifications to nonresidential structures based upon recommendations contained in a Qualified Energy Assessment performed under a NYSERDA program, by a utility program, or by a Qualified Energy Assessor. Qualified Energy Efficiency Services may include prequalified and custom measures or services including but not limited to: heating, ventilation, air conditioning; lighting; controls; building envelope; domestic or service hot water; solar thermal heat or hot water; or business processes (e.g., kitchens, laundries, air compression, etc.).

²⁰ Visit nyserdera.ny.gov/-/media/Files/EERP/GJGNY/Small-Business/Energy-Assessment-Standards.pdf to view the definition of a Qualified Energy Consultant found in the NYSERDA Small Commercial Energy Efficiency Program Energy Assessment and Request for Financing Package.

²¹ Visit nyserdera.ny.gov/-/media/Files/EERP/GJGNY/Small-Business/Energy-Assessment-Standards.pdf to view NYSERDA's Standards for Small Commercial Energy Assessments found in the NYSERDA Small Commercial Energy Efficiency Program Energy Assessment and Request for Financing Package.

In February 2012, NYSERDA launched a project expeditor pilot to provide assistance to small business and not-for-profit customers who had obtained energy assessments through GJGNY to encourage implementation of energy assessment recommendations. The project expeditors follow up with customers who have received energy assessments to determine if customers are eligible for financial incentives or energy efficiency financing, to help customers apply for available incentives and financing, to verify that the technologies and services included in energy project proposals are consistent with technologies recommended in Qualified Energy Assessments, and to provide additional technical assistance as necessary.

Expeditor pilot results demonstrate that small business and not-for-profit customers benefit from dedicated project implementation assistance, including assistance identifying and accessing financial incentives and low-interest energy efficiency financing, to help lower the cost of implementing energy efficiency improvements recommended on Qualified Energy Assessments. As a result, NYSERDA added dedicated implementation assistance to the Small Commercial Energy Efficiency Program. Qualified Energy Consultants, selected through Technical Review and Program Support Contractors Request for Proposals (RFP 2621), provide energy assessments to small business and not-for-profit customers, explain energy assessment recommendations and the business case for implementing energy efficiency measures to customers, and identify and help customers apply for any available financial incentives or low-interest energy efficiency financing. NYSERDA anticipates that providing energy assessments integrated with dedicated implementation assistance will help more small business and not-for-profit customers implement energy efficiency improvements in their buildings.

As a result of the Small Commercial Expeditor Program, a total of 48 NYSERDA-approved participation loan applications and 34 NYSERDA-approved OBR Loan applications can be attributed to assistance provided through the pilot. Of these, nine participation loans were closed as of June 30, 2016, at an aggregate of \$938,285 in financing, and 11 OBR Loans closed, totaling of \$287,485. Further results of the expeditor pilot will be determined over time. These energy efficiency loans are included in the loan totals provided in Section 7.3.

7.3 Financing

NYSERDA enters into agreements with lenders who wish to partner with NYSERDA to provide low-interest energy efficiency financing to small business and not-for-profit customers through Participation Loans and OBR Loans. Lenders follow NYSERDA's underwriting criteria²² when originating NYSERDA loans.

Eligible small business and not-for-profit customers are allowed to finance the installation of energy efficiency upgrades, the purchase of solar electric systems under 200 kW, as approved under NYSERDA's NY-Sun Incentive Program, and the purchase of solar thermal systems as approved under NYSERDA's Renewable Heat NY Program through lenders participating in either the Participation Loan or OBR Loan product.

7.3.1 Participation Loans

Through Participation Loans, NYSERDA provides 50 percent of the principal of the loan, up to \$50,000, at 2 percent interest for up to 10 years. The lender provides the remaining principal of the loan at market rate. Participating lenders collect loan payments from the customer and remit to NYSERDA its share of the loan. NYSERDA will use these funds to continue further lending activities. By participating in the program, lenders can offer energy efficiency financing to small business and not-for-profit customers at a below-market interest rate. The Participation Loan Program is currently open to banks, credit unions, local development corporations, and community development financial institutions. As of June 30, 2016, a total of 30 Participation Loans have been closed with a total loan value of \$1,861,289. These include 15 energy efficiency loans totaling \$864,111 and 15 solar electric loans totaling \$952,178.

²² Criteria include but are not limited to: Organization in existence at least two years, credit score of 650 or higher, no bankruptcies within the last 5 years; no current judgments or liens in excess of \$5,000, debt service coverage ratio > 1.2. These criteria are subject to change.

7.3.2 On-Bill Recovery Loans

Participating lenders can also originate OBR Loans on NYSERDA's behalf. Through this loan product, NYSERDA offers eligible small business and not-for-profit customers up to \$50,000 at 2.5 percent interest for a maximum 10 years to finance the cost of their energy efficiency or solar electric system projects. Customers repay their OBR Loan through an installment charge on their utility bill. Currently, lenders earn a \$300 origination fee for each OBR Loan they originate on NYSERDA's behalf, though lenders are able to charge a customary fee, which can be included in the financing, provided the simple payback period remains 10 years or less. As of June 30, 2016, 20 OBR Loans have been closed with a total loan value of \$584,928. The consisted of 14 energy efficiency loans totaling \$379,867, and six solar electric loans totaling \$205,061.

7.4 Program Outreach Efforts

7.4.1 Coordination with Other Program Administrators

NYSERDA's Small Commercial Energy Efficiency Program currently allows small business and not-for-profit customers to use Qualified Energy Assessments provided by NYSERDA, utilities, or a Qualified Energy Consultant of their choice as the basis of an application for low-interest energy efficiency financing made available through GJGNY. The energy assessment, however, must meet NYSERDA's standards for small commercial energy assessments found in the NYSERDA Small Commercial Energy Efficiency Program Energy Assessment and Request for Financing Package.²³ By taking advantage of available financing, small businesses and not-for-profits can access the initial capital necessary to cover the cost of implementing approved energy efficiency improvements that are not covered by estimated incentives.

7.4.2 Coordination with CBOs

NYSERDA is coordinating with CBOs to raise awareness of the Program by hosting a monthly training webinar for CBOs interested in connecting their local small business and not-for-profit customers with low-interest energy efficiency financing. NYSERDA also

²³ Visit nyserdera.ny.gov/-/media/Files/EERP/GJGNY/Small-Business/Energy-Assessment-Standards.pdf to view the NYSERDA Small Commercial Energy Efficiency Program Energy Assessment and Request for Financing Package.

hosted a training webinar for solar electric contractors participating in the NY-Sun Incentive Program (Program Opportunity Notice 2112) to inform them of the availability of Participation Loans and On-Bill Recovery Loans to finance the purchase and installation of solar electric systems up to 200 kW by small businesses and not-for-profit customers.

7.5 Budget, Goals, and Metrics

Table 7-1 describes the Small Commercial Energy Efficiency budget, and Table 7-2 describes the goals and metrics, respectively. Reallocations of budget within the Small Commercial Energy Efficiency budget will be accomplished in the coming months to ensure funds are available where needed most.

Table 7-1. Small Commercial Energy Efficiency Program Budget

Component	Budget	Expended	Encumbered	Committed	Balance
Component	\$8,623,091	\$6,102,082	\$2,521,009	\$0	\$0
Energy Assessments	1,037,820	759,500	278,321	0	\$0
Implementation and Quality Assurance					\$0
Loans	1,994,917	1,239,280	0	733,862	\$21,775
Implementation	280,000	242,958	268,536	0	(\$231,494)
TOTAL	\$11,935,828	\$8,343,820	\$3,067,866	\$733,862	(\$209,719)

Table 7-2. Small Commercial Energy Efficiency Program Goals and Metrics

Metric	Performance to Date	Goals
Assessment Applications Received (number)	3,296	
Assessments Complete (number)	3,057	2,100
Estimated Projects Completed (number) ^{a,c}	1,345	1,296
1st Year Net kWh Savings (assessment recommended) ^b	31,509,982	
1st Year Net kWh Savings (estimated installed) ^c	13,864,392	
1st Year Net MMBtu Savings (assessment recommended)	348,969	
1st Year Net MMBtu Savings (estimated installed) ^c	153,546	
Estimated Annual Bill Savings (assessment recommended)	\$10,812,614	
Estimated Annual Bill Savings (estimated installed) ^c	\$4,757,550	
Estimated Annual kWh Savings/project	10,307	18,000 kWh per year / completed project
Estimated Annual MMBtu Savings/project	114	160 MMBTU per year / completed project
Estimated Annual Dollar Savings/project	\$3,537	\$5,200 per year / completed project
Loans Issued (number)	50	
Value of Loans ^d	\$2,604,877	
<p>^a Projects that receive GJGNY-supported assessments and/or financing may also receive incentives through Energy Efficiency Portfolio Standard (EEPS) and/or utility.</p> <p>^b Assessment recommended savings represent the total potential energy and energy bill savings that could be achieved if all measures recommended in the assessment are implemented</p> <p>^c The 2015 Small Commercial Energy Efficiency Program Impact Evaluation found that 44% of the energy savings recommended through program audits were reported to be implemented.</p> <p>^d The total loan value represents the total value of the loan issued by the lender to the borrower. The total loan value may include financing for non-energy efficiency projects. NYSERDA's share of the total loan value represents 50 percent of the total energy efficiency project cost or \$50,000, whichever is less.</p>		

7.6 Small Commercial Energy Efficiency Contracts

External contracts related to the implementation of the GJGNY Program in the small commercial and not-for-profit sectors are detailed in Table 7-3.

Table 7-3. Small Commercial Energy Efficiency Program Contracts

Identification Number	Contractor	Description	Contract Amount	Expended	Encumbered	Committed
Energy Assessments						
PO- 40827	The Daylight Savings Company	Energy Assessment Provider	\$1,293,593	\$612,558	\$681,036	\$0
PO- 40829	GDS Associates, Inc.	Energy Assessment Provider	1,293,593	716,280	577,313	0
PO- 40830	L&S Energy Services, Inc.	Energy Assessment Provider	1,293,593	855,031	438,563	0
PO- 41849	TRC Environmental Corp.	Energy Assessment Provider	1,651,579	827,482	824,097	0
PO- ST9848-1	C.J. Brown Energy P.C.	Energy Assessment Provider	360,941	360,941	0	0
PO- ST9849-1	L&S Energy Services Inc.	Energy Assessment Provider	672,710	672,710	0	0
PO- ST9850-1	The Daylight Savings Company	Energy Assessment Provider	1,538,405	1,538,405	0	0
PO- ST9851-1	EME Consulting Engineering Group LLC	Energy Assessment Provider	518,675	518,675	0	0
TOTAL ENERGY ASSESSMENTS			\$8,623,091	\$6,102,082	\$2,521,009	\$0
Assessment Implementation and Quality Assurance						
PO- 40827	The Daylight Savings Company	Expeditor Services	\$138,532	\$65,599	\$72,933	\$0
PO- 40829	GDS Associates, Inc.	Expeditor Services	138,532	76,707	61,825	0
PO- 40830	L&S Energy Services, Inc.	Expeditor Services	138,532	91,566	46,966	0
PO- 41849	TRC Environmental Corp.	Expeditor Services	137,566	68,924	68,642	0
PO- 24210	Kema Services Inc.	Program Support Services	49,857	49,857	0	0
PO- 7052	Novus Engineering P.C.	Expeditor Pilot	49,176	49,176	0	0
PO- 27661	Nexant Inc.	Expeditor Pilot	44,593	44,593	0	0
PO- 27726	Taitem Engineering P.C.	Expeditor Pilot	50,000	50,000	0	0
PO- 30679	Kema Services Inc.	Program Support Services	47,642	47,642	0	0
PO- 32825	Taitem Engineering P.C.	Expeditor Pilot	74,331	74,331	0	0
PO- 32865	Aramark Management Svc Ltd Prtnshp	Program Support Services	65,000	65,000	0	0
PO- 33565	LaBella Associates P.C.	Quality Assurance Services	1,737	1,737	0	0

Table 7-3 continued

Identification Number	Contractor	Description	Contract Amount	Expended	Encumbered	Committed
Assessment Implementation and Quality Assurance						
PO- 33570	TRC Companies Inc.	Quality Assurance Services	2,699	2,699	0	0
PO- 37428	Blue Springs Energy LLC	Program Support Services	50,000	50,000	0	0
PO- 55032	LaBella Associates P.C.	Program Support Services	24,640	16,262	8,378	0
PO- 56337	Taitem Engineering P.C.	Program Support Services	24,982	5,405	19,577	0
TOTAL ASSESSMENT IMPLEMENTATION AND QUALITY ASSURANCE			\$1,037,820	\$759,500	\$278,321	\$0
Loan Activity						
Aggregated Loans Issued	Various	Loans Issued	NA	\$ 1,477,850	\$0	\$733,862
Aggregated Loan Repayments	Various	Loans Payment	NA	(238,570)		
NET AGGREGATED TOTAL LOAN ACTIVITY				\$1,239,280	\$0	\$733,862
Financing Implementation						
PO- 18591	Hawkins Delafield & Wood	Legal/Program Design	\$122,787	\$122,787	\$0	\$0
PO- 19923	Lamont Financial Services Corp	Legal/Program Design	84,630	84,630	0	0
PO- 20662	Earthspone, LLC	PV Development	3,750	3,750	0	0
PO- 25910	Concord Servicing Corp	Loan Servicer	120,000	3,250	116,750	0
PO- 25910	Concord Servicing Corp	Loan Servicer	120,000	784	119,216	0
PO- 36864	Advantage Title Agency Co.	Legal- Title	13,333	1,675	11,658	0
PO- 37723	Stewart Title Insurance Co	Legal- Title	13,333	1,306	12,027	0
PO- 38299	Frontier Abstract and Research Services	Legal- Title	13,333	4,499	8,835	0
PO- 80732	Dentons US, LLP	Bond Counsel Services	7,800	7,750	50	0
VC- 294790	Community Development Corporation of Lon	Origination Fee	0	300	0	0
VC- 298768	LIPA	Utility Remittance	0	233	0	0
VC- 339219	Pathstone Enterprise Center Inc.	Origination Fee	0	300	0	0

Table 7-3 continued

Identification Number	Contractor	Description	Contract Amount	Expended	Encumbered	Committed
Financing Implementation						
VC- 343904	Niagara Mohawk	Utility Remittance	0	600	0	0
VC- 401392	New York Business Development Corp	Origination Fee	0	300	0	0
VC- 401393	New York Business Development Corp	Origination Fee	0	300	0	0
VC- 404265	Central Hudson Gas and Electric	Utility Remittance	0	446	0	0
VC- 409423	Community Loan Fund of the Capital District	Origination Fee	0	300	0	0
VC- 416714	BOC Capital Corp	Origination Fee	0	300	0	0
VC- 416980	New York Business Development Corp	Origination Fee	0	300	0	0
VC- 417069	The Canandaigua National Bank and Trust	Origination Fee	0	300	0	0
VC- 461838	Central Hudson Gas and Electric	Utility Remittance	0	392	0	0
VC- 461839	Niagara Mohawk	Utility Remittance	0	391	0	0
VC- 475242	Pathstone Enterprise Center Inc.	Origination Fee	0	800	0	0
VC- 475244	Pathstone Enterprise Center Inc.	Origination Fee	0	800	0	0
VC- 476686	NYSEG	Utility Remittance	0	461	0	0
VC- 487544	LIPA	Utility Remittance	0	300	0	0
VC- 490163	Pathstone Enterprise Center Inc.	Origination Fee	0	800	0	0
VC- 493605	Barrett Capital Corp	Origination Fee	0	1,400	0	0
VC- 502485	Brooklyn Cooperative Federal Credit Union	Origination Fee	0	300	0	0
VC- 504587	Niagara Mohawk	Utility Remittance	0	317	0	0
VC- 512203	Brooklyn Cooperative Federal Credit Union	Origination Fee	0	300	0	0
VC- 513001	Niagara Mohawk	Utility Remittance	0	222	0	0
VC- 529377	New York Business Development Corp	Origination Fee	0	300	0	0
VC- 531495	Consolidated Edison	Utility Remittance	0	1,143	0	0
VC- 537088	New York Business Development Corp	Origination Fee	0	300	0	0

Table 7-3 continued

Identification Number	Contractor	Description	Contract Amount	Expended	Encumbered	Committed
Financing Implementation						
VC- 544321	New York Business Development Corp	Origination Fee	0	300	0	0
VC- 553526	Barrett Capital Corp	Origination Fee	0	788	0	0
JL - 15192	Frontier Abstract and Research Services	Reclassification: Refund	0	(280)	0	0
JL - 15760	Frontier Abstract and Research Services	Reclassification: Refund	0	(185)	0	0
TOTAL FINANCING IMPLEMENTATION			\$498,966	\$242,958	\$268,536	\$0
GRAND TOTAL			\$10,159,877	\$8,343,820	\$3,067,866	\$733,862

8 Outreach and Marketing

GJGNY provides for community-based outreach, enabling one-to-one assistance with the process of participating in the program. Combined with statewide marketing, this approach is expected to increase the reach of the program, particularly among disadvantaged populations and those not traditionally participating in energy efficiency programs. Although one-to-one assistance can be more expensive, reaching households with limited incomes who otherwise might not participate and enabling them to permanently reduce their energy bills and assist in improving health, comfort, and home safety, providing both personal and societal benefits.

8.1 Outreach through Constituency-Based Organizations

The GJGNY program provides outreach services in targeted communities through CBOs that locate residents, businesses, nonprofits, multifamily building owners, and potential workforce participants. CBOs encourage participation in energy efficiency programs, facilitate awareness of workforce training opportunities available within the community, and assist with enrollment and participation in those efforts. In addition, they coordinate GJGNY program activities with other energy or home improvement-related initiatives within their communities. As of June 30, 2016, 11 competitively solicited CBOs are currently under contract to assist with the program. Table 8-1 lists CBOs that have worked, or are currently working in the program, the sectors targeted, and an indication of whether they also have workforce or aggregation components.

Table 8-1. CBOs Selected through Requests for Proposals

CBOs Selected through a First Round Solicitation (RFP 2038 and RFP 2327) with contract durations in the 2011–2014 timeframe						
Target Region	CBO Name	Outreach Activity				Aggregation
		One- to Four-Family Residential Buildings	Multifamily Energy Performance	Small Commercial Energy Efficiency	Workforce Training and Development	
Downstate						
Bronx	Northwest Bronx Community and Clergy Coalition (NWBCCC)				X	
	Bronx Overall Economic Development Corporation (BOEDC)	X	X	X		
Kings and Richmond	Neighborhood Housing Services of Staten Island (NHSSI)	X			X	
	El Puente	X	X	X		
	Make the Road New York (MRNY)	X	X		X	
New York	Downtown Manhattan Community Development Corporation (DMCDC)		X		X	
	Civic Association Serving Harlem (CASH)	X	X			
Queens	Asian Americans for Equality Community Development Fund (AAFE)	X			X	
	Neighborhood Housing Services of Jamaica (NHSJ)	X				

Table 8-1 continued

Target Region	CBO Name	Outreach Activity				Aggregation
		One- to Four-Family Residential Buildings	Multifamily Energy Performance	Small Commercial Energy Efficiency	Workforce Training and Development	
Upstate						
Capital	Northeast Parent and Child Society (NEPC)				X	
	Affordable Housing Partnership of the Capital Region (AHP)	X				
Central	Public Policy and Education Fund of Central New York (PPEF-Central)	X		X	X	
Finger Lakes	PathStone	X		X	X	
Long Island	Long Island Progressive Coalition (LIPC)	X				X
Mid-Hudson and Westchester	Rural Ulster Preservation Company (RUPCO)	X		X	X	
North Country	Adirondack North Country Association (ANCA)	X	X	X	X	
Southern Tier	Public Policy and Education Fund of the Southern Tier (PPEF-ST)	X		X	X	
Western	People United for Sustainable Housing (PUSH)	X	X		X	X

Table 8-1 continued

CBOs Selected through a Second Round of Requests for Proposals (RFP 2773) with contract durations in the 2013–2016 timeframe						
Target Region	CBO Name	Outreach Activity				Proposed Aggregation
		One- to Four-Family Residential Buildings	Multifamily Energy Performance	Small Commercial Energy Efficiency	Workforce Training and Development	
Downstate						
Bronx	Sustainable South Bronx (SSBx)	X	X	X	X	
Richmond	Neighborhood Housing Services of Staten Island (NHSSI)	X			X	
Kings	El Puente	X	X	X	X	X
Queens	Neighborhood Housing Services of Jamaica (NHSJ)	X				
CBOs Selected through a Second Round of Requests for Proposals (RFP 2773) with contract durations in the 2013–2016 timeframe						
Target Region	CBO Name	Outreach Activity	Proposed Aggregation	Target Region	CBO Name	Outreach Activity
		One- to Four-Family Residential Buildings	Multifamily Energy Performance			One- to Four-Family Residential Buildings

Table 8-1 continued

Target Region	CBO Name	Outreach Activity	Proposed Aggregation	Target Region	CBO Name	Outreach Activity
		One- to Four-Family Residential Buildings	Multifamily Energy Performance			One- to Four-Family Residential Buildings
Upstate						
Capital	Affordable Housing Partnership of the Capital Region (AHP)	X				
Finger Lakes	PathStone	X				
Nassau & Suffolk	Long Island Progressive Coalition (LIPC)	X		X	X	X
Mid-Hudson and Westchester	Rural Ulster Preservation Corporation (RUPCO)	X	X	X	X	X
North Country	Adirondack North Country Association (ANCA)	X	X	X	X	
Southern Tier	Public Policy and Education Fund of the Southern Tier (PPEF-ST)	X	X	X		
Western	People United for Sustainable Housing (PUSH)	X		X	X	X

CBOs are reaching more of the intended LMI households than the program average. As of June 30, 2016, 48 percent of the completed retrofits that resulted from CBO outreach were eligible for the Assisted HPwES program, compared to 37 percent program wide. These CBOs are leveraging other State, federal, and local funds to complete Home Performance work. Area-specific NYSERDA-approved contractor lists, which may include information such as languages spoken by the contractor staff, are being distributed to facilitate homeowners' contractor selection process. Aggregation is bringing with it new ways of reaching customers while enhancing community benefits through local hiring practices and wage standards.

Attendance at local events such as home ownership forums and street fairs assists in communicating with new populations. This commitment to personal interaction, coupled with creative social media strategies, has helped forge strong connections with local community and environmental groups and has resulted in some CBOs winning the approval of local government and community leaders, serving to validate the program at the community level. While developing a network of productive partnerships, CBOs are reaching multifamily and small commercial markets in addition to their presence in the residential market.

The downstate Energy Champions Referral program launched in October 2014 in conjunction with the Pratt Center for Community Development. However, the pilot did not produce the desired results, therefore as an alternative, New York City CBOs were encouraged to develop their own referral programs. Endeavors of the downstate, and other CBOs, include the following:

- Sustainable South Bronx has created a new outreach strategy extending from the work it started with churches in the Bronx. Once a church has signed up for a commercial assessment and expressed interest in the program, additional outreach is conducted to their membership offering referral fees for any referred projects that go through the assessment and commence work.
- El Puente has engaged with other Brooklyn entities such as Local Development Corporation of East New York and Spring Creek Nehemiah Homeowners Association to promote participation in the Home Performance and Multifamily Performance programs. These types of efforts have yielded 34 multifamily and five single family projects approved to proceed, with additional leads applying for assessments. El Puente is currently working with North East Brooklyn Housing Development Corporation (NEBHDCo) and contractor Bloc Power, who recently performed assessments on approximately 500 NEBHDCo units, to coordinate applications and work scopes for residents desiring energy efficiency improvements.

- Sustainable South Bronx (SSBX) continues to move forward with organizing HPwES participation at Shorehaven, a Bronx 256-unit condominium community. Working in concert with the Homeowners Association and contractor BrightHomes, SSBx has cultivated a list of 60 leads so far, with 4 jobs completed and 32 more interested in performing improvement work. SSBx is using frequent meetings and canvassing within the development to continue to add potential projects. SSBx has also connected with several municipal resources, elected officials in the Bronx, and local community boards to speak about and promote the programs available. Overall, SSBx has originated 13 residential projects.
- Public Policy and Education Fund of the Southern Tier (PPEF) has remained committed to its regimented case management strategy in the region, totaling 321 retrofits to date since commencement of the program. PPEF staff members have been attending events such as senior picnics to target likely homeowners. The CBO has also invested time and resources to coordinate with local newspapers and radio stations to publish and broadcast information on residential energy efficiency programs. PPEF staff credits diligent follow-up with all potential leads for boosting their conversion rates.
- Rural Ulster Preservation Company (RUPCO), the CBO providing outreach to the Mid-Hudson Valley has brokered a number of unique partnerships to promote the HPwES program in local communities. For example, RUPCO is working with local partners to incorporate HPwES into many Solarize campaigns in the region, including the Solarize Hudson Valley initiative. Additionally, RUPCO is leveraging two low-income solar installation programs to facilitate renewable energy and energy efficiency projects. The first is a grant of \$25,000 from NeighborWorks America for a collaborative RUPCO/ GRID Alternatives Tri State program serving LMI homeowners in Kingston. The second is Ulster County's Community Development Block Grant funding of \$408,000 for solar and energy efficient rehabilitation projects serving LMI homeowners throughout the rest of Ulster County. Overall, they were able to develop 358 approved work scopes. RUPCO has a staff member dedicated to Spanish-speaking clients and has shared Spanish language materials with three other CBOs performing GJGNY Outreach. RUPCO partnered with Energize NY to cross-promote retrofits via their respective websites and at events like the "1000th Retrofit" event last May in Bedford, NY.
- People United for Sustainable Housing (PUSH), which in the past has been focusing its outreach efforts almost entirely on the City of Buffalo, has in recent months begun to expand its service territory beyond the city and Erie County to the surrounding region. PUSH has also made efforts to bridge NYSERDA's energy efficiency offerings with other programs administered by the CBO whenever possible. For example, they have worked with the Community Foundation for Greater Buffalo – in coordination with Erie County, the City of Buffalo, and the Office of the NYS Attorney General – to target LMI households that would benefit the most from services. With several replacement staff members hired in the summer and fall of 2015, the organization has also shifted the roles of its employees to specialists rather than generalists. Interest in their aggregation pilot has remained strong, with bundles of 10 to 12 homeowners being organized for participating contractors on approximately a monthly basis. With 336 residential retrofits credited to the CBO cumulatively through the end of June, their updated strategy is beginning to show positive results.

- PathStone's new staff and revised outreach strategy have yielded five times as many retrofits under its current contract with NYSERDA than under its previous contract. Having been credited with 224 retrofits as of June 30, 2016, PathStone has already exceeded its goal of 189 projects by nearly 20 percent. The CBO has attempted a wide variety of outreach approaches including attending the South Wedge farmer's market, coordinating informational sessions with local contractors participating in the HPwES program, and participating in working groups such as the City of Rochester Climate Action Plan and the Finger Lakes Regional Economic Development Council. PathStone has also started its second year of managing the Canandaigua Home Energy Improvement Program, which matches funds from the municipality with funds available through NYSERDA programs to complete jobs for LMI homeowners. Combined with case management and general assistance provided to program participants, PathStone has adopted solutions that have resulted in a large number of retrofits in the greater Finger Lakes region.
- Affordable Housing Partnership (AHP) hosts an energy webpage to facilitate leads and applications from homeowners interested in Assisted Home Performance. They also conducted numerous presentations and participated in events to engage homeowners, such as the Employee Benefit Fairs held by Albany County agencies and National Grid Customer Assistance Expo events. AHP reached its retrofit goal in December 2015 but has continued to add projects for an overall total of 183 approved projects as of June 2016. AHP has positioned itself as the homeowner specialist organization in its region, with links and resources for energy efficiency in addition to resources for first time buyers and landlords. They are well networked with the Community Loan Fund and Albany County Land Bank, among others, and have utilized their own HUD AHC grant to leverage an average of 50 percent funding for retrofits.
- As co-host of the annual Clean Energy Expo at SUNY Polytechnic Institute in Utica during June 2016, Adirondack North Country Association (ANCA) included an exhibit table to promote the efficiency programs offered by NYSERDA. Over 250 guests were in attendance. ANCA also developed a relationship with the Mohawk Nation of Akwesasne and its contractors Cornerstone and Adirondack Efficiency in order to help them complete assessments on ten homes as the initial part of a project that will braid HUD funding with NYSERDA Assisted Home Performance participation to retrofit over 100 units. ANCA also coordinated with the Catholic Diocese of Ogdensburg to meet with several parishes that were interested in learning about how to participate in a retrofit program. Overall efforts are ongoing to add to the 89 work scopes approved with ANCA's assistance.

- Neighborhood Housing Services Staten Island (NHSSI) frequently attended meetings and community events such as the Clean and Green Festival, Boardwalk Bash, and Northfield Community Local Development Corporation's Housing Forum to continue to add potential projects. NHSSI has connected with the local NYPD 121st Precinct and the local Senator's office to deliver community presentations. Recent attendance at National Grid Community Outreach event where National Grid brings in many local community groups for a one-stop access event for public programming has produced additional interest as well as continuing to advertise in the premier paper in the borough. Overall, NHSSI has delivered 32 approved projects through a strong focus on community events and one-on-one assistance at their storefront office and home appointments with seniors and others that may not be able to visit the office or events. They were awarded State Home Improvement funds to assist homeowners who need to do repair work in order to effectively retrofit the home. This, coupled with their agency's other existing home improvement grants, has created an internal referral system that works to the benefit of all.
- In 2016, Long Island Progressive Coalition (LIPC) continued their strategic partnership with the Long Island Presbyterian Board of Trustees, the governing body of the Presbyterian churches of Long Island, to provide outreach and support to the promotion of sustainable solutions to their member churches and congregations. They submitted a press release to NYSERDA for approval in anticipation of a kick-off event at the first church site to undergo retrofits, and they have begun processing financing information for some of the sites. LIPC also participated in numerous Long Island events at Eisenhower Park and other sites. In addition, they are developing a partnership with Girl Scouts of Nassau County and as a consequence held a meeting with 35 staff from the organization to promote retrofits. This was a first step toward organizing parent presentations for the 36 scout chapters across the region. A similar event is being organized with the Boys and Girls Club in Suffolk County. As of May 2016, LIPC efforts resulted in 135 approved work scopes.
- Neighborhood Housing Services Jamaica (NHSJ), in concert with its subcontractor Chayya Inc., attended many community events along with forging a relationship with NYC Housing Preservation and Development. They utilized several Queens Library sites to hold energy efficiency information hours. NHSJ distributed Home Performance program information to attendees of its Handyman Training sessions offered in-house every month. Chayya utilized GIS mapping to create target audience maps and plan tabling events accordingly. Chayya extended mapping assistance to El Puente in Brooklyn. NHSJ was able to braid funding via their HUD Approved Housing Counseling grant funds to cover portions of project costs for clients who otherwise would not have likely participated in a retrofit. They produced 26 approved work scopes overall. NHSJ assisted two other GJGNY CBOs with accessing grant funding to leverage NYSERDA program funds, although those jobs will be credited to the originating CBOs.

8.1.1 Training and Implementation Contractor

Conservation Services Group was competitively selected as the GJGNY Training and Implementation Contractor (TIC) during the first contract period and again under the second contracting period. In 2015, the Group was purchased by CLEAResult and now goes by that name. The TIC provides structured training and support for the CBOs along with geographic coordination and support of CBO outreach programs, enabling communication across all regions. CLEAResult tracks CBO goals, assess and fulfills CBO needs, tracks progress of referrals made to GJGNY, and provides regular reporting of program activities and results to NYSERDA.

During the reporting year, CLEAResult accomplished the following:

- Facilitated ongoing bi-monthly webinar trainings for participating CBOs on program updates and changes.
- Provided continual reinforcement of outreach program procedures and protocols.
- Along with its subcontractor, Pratt Center for Community Development, CLEAResult developed and delivered on-boarding training to new CBO staff assigned to GJGNY outreach to ensure procedural consistency.
- Hosted and maintained the CBO SharePoint Portal online communication tool, providing assistance to CBOs with the tool while also providing assistance to CBOs in using NYSERDA's Comprehensive Residential Information System database and the NY HP Portal web-based communication tool.
- Provided oversight and guidance to the active aggregation programs in the Western New York and the Long Island regions in addition to supporting CBOs incorporation of energy efficiency into local Solarize campaigns.
- Developed new outreach material.
- Sought resolution to customer concerns.
- Shared best practices and success stories among CBO groups.

8.1.2 SharePoint Portal

To support the CBO outreach effort, a SharePoint Portal was developed that serves as a central communication tool and reporting mechanism for participating organizations. The site is password-protected and accessible to NYSERDA staff, CLEAResult and its subcontractor Pratt Center for Community Development, and CBOs.

The SharePoint Portal enables CBOs to access and download program information and materials, to upload information such as reports and leads, and to converse about the program and its deployment. CLEAResult worked with NYSERDA to ensure the information gathered from CBOs on the site integrates with the Comprehensive Residential Information System (CRIS) programmatic database system. CBOs are required to report and track leads, assessments, and retrofits in the CRIS system.

The CBO SharePoint Portal is being used as a central communication tool to support participating CBOs, allowing program staff and CBOs to share information efficiently. Program staff and CBOs use the Portal to post announcements about training classes, notices of upcoming webinars, programmatic updates, and multimedia resources. CBOs can use the same tool to access files such as presentation slides from training sessions, recorded webinars, aggregation documents, reporting and invoicing templates, and approved marketing language and logos. Press releases, Web copy, and marketing materials can be conveniently uploaded for program administrator review. The Portal can be used to assign Aggregation Group ID numbers so that the neighborhood clusters of HPwES participants are properly associated, thereby ensuring community-scale pricing and other benefits are delivered. By providing all new, open, and closed issues raised for tracking and reporting purposes in a centralized location, administrative burden is alleviated and tracking and reporting accuracy is ensured. In addition, portal users can participate in a real-time group discussion board created to provide a venue for dialogue and to further promote best practices among CBOs.

In early 2016, the SharePoint feature that allows CBO metric reporting was updated and enhanced with a graph gallery to accommodate a more granular look at program activity. The metric reporting site facilitates a single location for NYSERDA and CBOs to view and track performance and confirm program verified and credited retrofits. Although NYSERDA can view statistics on all CBOs, the individual CBO groups previously had limited access via SharePoint to metrics for other organizations. Dashboard enhancements made in 2016 allow CBOs to view their progress as plotted in graphs that include all CBOs or all counties, whichever is relevant. This allows each CBO to judge its progress as compared with peers in other regions as well. The graph gallery illustrates CBO assisted retrofit projects by geography, Assisted Home Performance vs. market rate, month, and other criteria in order to comparatively assess productivity and program penetration.

8.1.3 CBO Training and Webinars

NYSERDA provides regular training to CBOs via a series of webinars that provide CBOs with program updates, information on best practices, and other necessary information. During the reporting period, outreach and marketing staff and contractors conducted six CBO bi-monthly webinars and links to relevant NYSERDA HPwES and MPP program trainings and conferences. All training presentations and materials are available on the CBO SharePoint Portal for review and as a refresher for staff, as necessary. Details about webinar topics can be found in Appendix D.

Additionally, the TIC provides training through on-site meetings for new CBO staff as well as refresher training for existing staff, remote CBO staff training utilizing virtual meetings and conference calls, and a monthly in-person training meeting for the downstate region in New York City. In 2016, the TIC coordinated with NYSERDA to present a Virtual Convening via webinar, which allowed all CBOs to exchange ideas and questions according some general structure types; e.g., small mixed-use buildings, rural homes, apartment buildings, and general single family. Program eligibility was discussed for each type along with scenarios such as full rehab and how to direct such inquiries.

8.1.4 Aggregation

Aggregation is the process of unifying a collection of eligible homeowners who have agreed in advance to use the same contractor or contractor team to perform assessments and retrofit work, and who are brought to the GJGNY program by a CBO under contract with NYSERDA to perform customer outreach services. Aggregation provides benefits to the homeowner such as lower costs through standardized pricing and a simplified participation process. Aggregation also provides benefits to contractors by reducing costs associated with travel and marketing, allowing more efficient use of crews and bulk material purchases, and providing a ready audience of potential leads. Additionally, this process benefits the targeted community by creating employment for local residents and complements ongoing market transformation efforts by expanding awareness, increasing education, and reaching populations not currently responding to programs.

Aggregation is actively being implemented by Long Island Progressive Coalition (LIPC) and People United for Sustainable Housing (PUSH). NYSERDA began processing GJGNY assessment applications for aggregation projects on May 14, 2012, in preparation for the official launch of the Aggregation Pilot in Erie County and Long Island. With the second round of funding, PUSH has expanded their outreach initiative to Niagara and Chautauqua counties. With the second round of funding, aggregation components were proposed by two additional CBOs: El Puente and Rural Ulster Preservation Company (RUPCO). El Puente aimed to have their pilot implemented in the second year of their contract. However, due to the departure of their key Aggregation staff coordinators in 2014, the aggregation plans for these two organizations have been put on indefinite hold.

Both CBOs currently participating in aggregation created plans identifying the neighborhoods to target, minimum number of households to be included in the aggregation, strategies to provide pricing economies of scale, processes for assigning aggregations to participating Home Performance contractors, timelines for contractors to complete work, and fulfilling other aspects of the program. Contractors interested in providing services to an aggregated group of households and benefiting from receiving a list of pre-screened customers located within a small area must also agree to provide community benefits such as local hiring, employee training, or providing living wages. The nature of the community benefits is unique to each region and was developed by the CBOs in coordination with regional contractors.

As of June 30, 2016, the following HPwES contractors are active in the GJGNY Aggregation Pilot program:

- Long Island Region - Long Island Progressive Coalition (LIPC):
 - Green Audit USA
 - Home Performance Technologies, Inc.
 - Triple H Contracting, Inc.
- Western Region - People for Sustainable Housing (PUSH):
 - Buffalo Energy, Inc.
 - Dr. Frank's Energy Savers / Mr. Plumber
 - Home Performance Professionals
 - Ivy Lea Construction, Inc.
 - New Buffalo Impact, Inc.
 - Zenner and Ritter

LIPC's aggregation pilot was launched officially on July 9, 2012, after months of planning and establishing relationships with their aggregation contractors. As of June 2016, LIPC has facilitated 213 customers within 50 aggregation clusters. Of these clients, 176 have completed their comprehensive home energy assessments and 98 have progressed to HPwES-approved projects. LIPC's project conversion rate is currently 19 percent higher than the average 30 percent HPwES program conversion rate. LIPC attributes the above average conversion rate on their pre-screening of customers for financial eligibility prior to assessment application submittal.

PUSH is marketing their aggregation program, which is called the PUSH Green Friends and Neighbors program (PUSH Green). PUSH Green held their contractor lottery on June 11, 2012 and assigned the first three aggregation bundles. As of June 2016, PUSH has facilitated 504 customers within 63 aggregation clusters. Of these customers, 63 percent (317 individuals) have since completed assessments on their homes and 124 of the projects have received program approval for advancing to retrofits.

To increase participation by LMI homeowners in the aggregation program, PUSH Green matched NYSERDA's Assisted Home Performance subsidy with Green and Healthy Homes Initiative (GHHI) funding to provide 100 percent of project funding for eligible homeowners in the City of Buffalo. GHHI matching grant funds were exhausted by the fall of 2013, but PUSH continued to target LMI households. In September 2014, PUSH's affordable housing subsidiary, the Buffalo Neighborhood Stabilization Company was awarded a grant from the Affordable Housing Corporation that will fund building repairs for LMI homeowners who commit to completing NYSERDA energy efficiency improvements. The program will target homeowners living in PUSH's core community on the West Side of Buffalo and include an innovative workforce development and contracting model. Funding will support approximately 30 projects and leverage both EmPower and Assisted Home Performance subsidies. The program launched marketing activities in February 2015. In March, PUSH Green began enrolling participants in the Warm and Dry program. To date, the CBO has invested over \$150,000 in building repairs and energy efficiency measures in seven homes (11 units) on the west side of Buffalo. Many of these projects, which were able to take advantage of the Warm and Dry Program in conjunction with HPwES, were applicants for the CBO's Green and Healthy Homes Initiative that were not able to participate when funding ran out in late 2013. As the Warm and Dry program continues, PUSH hopes to serve no fewer than 30 units.

Over the past several years, PUSH and LIPC have shared their experiences with CBOs across the state in an attempt to inform other groups of the opportunities and challenges associated with aggregation initiatives. Through this process of collaboration among organizations, many CBOs have carefully considered whether or not to pursue similar pilots in their own territories. Due to the initial success, the aggregation program is no longer viewed as a pilot. The initiatives have become a primary outreach method. As more homeowners decide to participate in the aggregation offerings of LIPC and PUSH, additional data will become available that may be used by NYSERDA to determine to what degree the original goals for customer benefits, contractor benefits, and community development are being achieved.

CLEAResult continues to assist NYSERDA with general oversight of the CBO aggregation program. Additionally, CLEAResult works with NYSERDA to track how aggregation is being deployed and managed by the participating CBOs. CLEAResult also monitors participating CBO protocols and procedures for aggregation implementation, providing NYSERDA updates on how the protocols and procedures are working in the field, tracks and makes recommendations on necessary development work to support aggregation in associated databases, in addition to assisting with training and support. Moreover, CLEAResult works to inform CBOs of other national, state and regional aggregation models and has arranged conference calls to facilitate knowledge and understanding of these alternate models.

8.1.5 Outreach to Support Workforce Development

CBOs also support the continued growth of a strong foundation of accredited contractors, including minority- and women-owned business enterprises, and encourage workers to leverage training opportunities currently in place. CBOs provide specific program information including: types of workforce training opportunities, names of organizations or other entities providing training, contractors and trade organizations providing on-the-job training opportunities, contacts, and processes for enrollment or participation.

Several CBOs have had significant successes with their workforce development activities. Under the first contract, Adirondack North Country Association (ANCA) worked with the Workforce Development Institute (WDI) as a subcontractor in the North Country. WDI, in conjunction with State University of New York at Canton, Institute for Building Technology and Safety (IBTS), and the Building Performance Contractors Association of New York, worked together to raise awareness of GJGNY opportunities. These organizations reached out to contractors in the North Country and informed them of the HPwES program while also encouraging the firms to become accredited by the Building Performance Institute (BPI). Several BPI training dates were established at SUNY Canton. Additional workforce development

outreach opportunities were also pursued. ANCA continues relationships with WDI, IBTS, and the DOL One Stop Centers. For example, as a result of ANCA's efforts, one contractor enrolled in the HPwES program and two additional training class members are employed at participating contractor companies. This addition is a great opportunity for the North Country, which has a limited number of participating contractors relative to the size of the region.

Long Island Progressive Coalition (LIPC) is working with United Way YouthBuild to educate graduates on career opportunities in the HPwES program by conducting presentations. Additionally, the CBO helped facilitate a partnership by referring interested participants to United Way and the DOL, both of which serve as training hosts. Contractors have continued to alert LIPC of job openings prior to posting on job listing websites, which has further bolstered the CBO's workforce development efforts. LIPC was successful in training new workers, cooperating with the Laborers' International Union of North America Local 10 on providing two 30-day Weatherization Training programs. This training helped prepare workers for energy efficiency work and resulted in trainees having over ten new certifications in the field. LIPC's outreach in low-income minority communities aided to find potential trainees and assisted them in applying for the training. After the training, LIPC worked with some of the trainees to develop their resumes and to assist them in finding jobs.

As of June 2016, PUSH Buffalo (PUSH) has connected 51 community residents to employers in the green construction sector. PUSH replaced its workforce development manager during 2016 and has tasked the new staff member with streamlining and revamping the innovative Community Hiring Hall initiative, which is housed under PUSH's affordable housing subsidiary, the Buffalo Neighborhood Stabilization Corporation (BNSC). The aim of the initiative is to activate an employment model that can compete on cost with private for-profit temporary staffing agencies while also providing workers with access to industry training and the City of Buffalo living wage rate, including workers that can work on Home Performance projects like those of Ivy Lea Construction, a participating PUSH HPwES aggregation contractor.

8.1.6 Summary of CBO Program Statistics

Table 8-2 provides a summary of HPwES program activities by CBO for the one- to four-family sector through June 30, 2016.

Table 8-2. HPwES Activity Summary by CBO

CBO Name	HP Applications Received	HP Assessments Completed	HP Work Approved (number of jobs)	HP Completed Retrofits	Conversion Rate
Downstate					
Northwest Bronx Community and Clergy Coalition (NWBCCC)	Workforce Development Activities Only				
Sustainable South Bronx (SSBx)	250	137	24	22	18%
Neighborhood Housing Services of Staten Island (NHSSI)	268	180	51	48	29%
El Puente	85	37	10	7	32%
Make the Road New York (MRNY)	23	19	52	50	26%
Downtown Manhattan Community Development Corporation (DMCDC)	Multifamily Activities Only				
Civic Association Serving Harlem (CASH)	7	3	1	1	33%
Asian Americans for Equality Community Development Fund (AAFE)	72	53	18	16	34%
Neighborhood Housing Services of Jamaica (NHSJ)	382	222	67	62	30%

Table 8-2 continued

CBO Name	HP Applications Received	HP Assessments Completed	HP Work Approved (number of jobs)	HP Completed Retrofits	Conversion Rate
Upstate					
Northeast Parent and Child Society (NEPC)	Workforce Development Activities Only				
Affordable Housing Partnership of the Capital Region (AHP)	1108	657	277	259	43%
Public Policy and Education Fund of Central New York (PPEF-Central)	333	219	30	27	14%
PathStone	1298	877	268	254	33%
Long Island Progressive Coalition (LIPC)	709	494	260	244	49%
Rural Ulster Preservation Corporation (RUPCO)	3,419	2,387	539	509	22%
Adirondack North Country Association (ANCA)	488	346	89	83	26%
Public Policy and Education Fund of the Southern Tier (PPEF-ST)	1,807	1,416	321	311	23%
People United for Sustainable Housing (PUSH)	1,181	708	336	308	43%
TOTAL	11,430	7,755	2,343	2,201	30%

Table 8-3 and Table 8-4 provide summaries of outreach activities for the multifamily and small commercial sectors through June 30, 2016.

Table 8-3. Multifamily Performance Program Activity Summary by CBO

CBO Name	SharePoint Leads*	Completed Energy Reduction Plans (number of buildings)	Energy Reduction Plans in Progress**
SSBx	28	0	0
DMCDC	127	25	11
El Puente	58	34	34
MRNY	298	1	1
PathStone	1	0	0
RUPCO	41	0	0
ANCA	1	0	0
PPEF - ST	0	0	0
PUSH	3	0	0
TOTAL	557	60	46
<p>* SharePoint Leads are individuals who have received information on NYSERDA programs through CBO outreach activities.</p> <p>** Confirmed by CSG through NYSERDA's Multi-Family CRIS system.</p> <p>NOTE: Consult Table 8-1 to interpret CBO acronyms.</p>			

Table 8-4. Small Commercial Energy Efficiency Activity Summary by CBO

CBO Name	SharePoint Leads*	Completed Assessments
AHP	1	0
ANCA	59	27
El Puente	46	0
LIPC	49	0
PathStone	220	7
PPEF - Central	498	4
PPEF - ST	14	0
PUSH	305	74
RUPCO	87	0
SSBx (BOEDC under RFP 2038)	29	0
TOTAL	1,308	112
* SharePoint Leads are individuals who have received information on NYSERDA programs through CBO outreach activities. ** Confirmed by CBO through a follow-up visit/call to the customer. NOTE: Consult Table 8-1 to interpret CBO acronyms.		

Table 8-5 provides a summary of outreach activities supporting workforce development initiatives, such as recruiting new trainees or encouraging contractors to participate in the on-the-job training opportunities, through June 30, 2016.

Table 8-5. Workforce Training and Development Activity Summary

CBO Leads	SharePoint Enrolled in Training*	SharePoint Completed Training*	SharePoint Workers Connected to Employers*	SharePoint Workers Employed*
2,030	451	259	122	96
* Self-reported from SharePoint				

Table 8-6 provides a summary of CBO event statistics through June 30, 2016. Self-reported statistics are submitted by each CBO.

Table 8-6. CBO Event Totals

CBO Name	Total Events	Total Attendance
ANCA	63	8,891
AHP	113	5,299
AAFE	22	607
CASH	0	0
DMCDC	4	7,840
El Puente	98	3,053
LIPC	187	2,583
MRNY	41	1,951
NEPC	5	66
NHSJ	86	5,472
NHSSI	92	855
NWBCCC	4	42
PathStone	238	24,539
PPEF - Central	63	4,688
PPEF - ST	52	4,393
PUSH	300	12,684
RUPCO	159	14,516
SSBx	159	14,516
TOTAL	1,686	111,995
NOTE: Consult Table 8-1 to interpret CBO acronyms.		

8.2 Marketing

Marketing is used to build awareness and participation statewide as well as support the face-to-face grassroots activities necessary to effectively penetrate communities and populations who are challenging to reach; while delivering the education and support necessary to secure assessments and conversion to retrofits. NYSERDA competitively procured a marketing contractor, Brand Cool, to develop and execute a statewide integrated marketing and communication program to support GJGNY across all building sectors and including workforce development. Materials were also developed to support the CBOs, including those that could be branded by the CBOs for local distribution. Numerous marketing materials were developed in previous years and in the interim, any new materials developed by the CBOs to promote local events or outreach has been reviewed and assisted by NYSERDA’s Marketing Team. No additional statewide materials were developed or marketing campaigns undertaken during the reporting period. Some CBOs elected to produce flyers and banners for specific promotions or events and in those instances, the TIC worked with the CBO’s to produce suitable collateral, which was

submitted for approval through NYSEERDA’s marketing staff as prescribed by the CBO agreements. One such flyer was developed for use on CBO social media to encourage attendance at CBO events for Earth Week. Six CBOs listed events on a coordinated e-flyer, which was attractive and eye catching, and showed a breadth of activity by CBOs across six regions of New York.

8.3 Outreach and Marketing Budget

Table 8-7 provides the Outreach and Marketing budget.

Table 8-7. Outreach and Marketing Budget

Component	Budget	Expended	Encumbered	Committed	Balance
Delivered through CBOs	\$10,943,195	\$9,681,492	\$662,647	\$0	\$599,055
General Statewide Marketing	2,704,569	2,680,365	24,204	0	0
Training and Implementation Contractor	1,791,397	1,588,525	202,872	0	0
TOTAL	\$15,439,161	\$13,950,382	\$889,724	\$0	\$599,055
Expended: Contractor Invoices and loans processed for payment by NYSEERDA. Encumbered: Remaining funding obligated under a contract, purchase order, incentive award, or loan. Committed: Planned funding for contracts awarded and under negotiation; loans approved; and planned funding under active development through open solicitations with upcoming proposal due dates.					

8.4 Outreach and Marketing Contracts

External contracts related to the outreach and marketing component of the GJGNY Program are detailed in Table 8-8.

Table 8-8. Outreach and Marketing Contracts

Identification Number	Contractor	Description	Contract Amount	Expended	Encumbered	Committed
10984	Getty Images	Photography	\$0	\$455	\$0	\$0
31919	CEC	Eco House	49,500	49,500	0	0
22502	Brand Cool	GJGNY Marketing	2,430,410	2,430,410	0	0
22725	Cision	PR Subscription	1,700	1,700	0	0
34279	Dowd Whitbeck Printing	CBO print materials	673	673	0	0

Table 8-8 continued

Identification Number	Contractor	Description	Contract Amount	Expended	Encumbered	Committed
24317	Conservation Services Group	Training and Implementation Contractor	1,174,738	1,174,738	0	0
25984	Public Policy and Education Fund - Central (PPEF-C)	GJGNY Services and Support Contract	295,056	295,056	0	0
25987	Public Policy and Education Fund - Southern Tier (PPEF-ST)	GJGNY Services and Support Contract	231,010	231,010	0	0
26094	Adirondack North Country Association (ANCA)	GJGNY Services and Support Contract	256,158	256,158	0	0
26202	Rural Ulster Preservation Company (RUPCO)	GJGNY Services and Support Contract	568,146	568,146	0	0
26396	Northeast Parent and Child (NEPAC)	GJGNY Services and Support Contract	44,770	44,770	0	0
26397	PathStone	GJGNY Services and Support Contract	423,804	423,804	0	0
26400	Affordable Housing Partnership (AHP)	GJGNY Services and Support Contract	296,555	296,555	0	0
26644	Downtown Manhattan Community Development Corporation (DMCDC)	GJGNY Services and Support Contract	426,126	426,126	0	0
27024	El Puente	GJGNY Services and Support Contract	131,181	131,181	0	0
27230	People United for Sustainable Housing (PUSH)	GJGNY Services and Support Contract	470,960	470,960	0	0
27328	Bronx Overall Economic Development Council (BOEDC)	GJGNY Services and Support Contract	383,595	383,595	0	0
27522	Neighborhood Housing Services of Staten Island (NHSSI)	GJGNY Services and Support Contract	233,205	233,205	0	0
27586	Long Island Progressive Coalition (LIPC)	GJGNY Services and Support Contract	304,408	304,408	0	0

Table 8-8 continued

Identification Number	Contractor	Description	Contract Amount	Expended	Encumbered	Committed
27829	Asian Americans for Affordable Equality (AAFE)	GJGNY Services and Support Contract	355,060	355,060	0	0
29418	Make the Road New York (MRNY)	GJGNY Services and Support Contract	350,000	350,000	0	0
29419	Northwest Bronx Community Clergy Coalition (NWBCCC)	GJGNY Services and Support Contract	85,000	85,000	0	0
29983	Civic Association Serving Harlem (CASH)	GJGNY Services and Support Contract	131,250	131,250	0	0
30598	Neighborhood Housing Services of Jamaica (NHSJ)	GJGNY Services and Support Contract	135,149	135,149	0	0
54842	Neighborhood Housing Services of Jamaica (NHSJ)	GJGNY Outreach Program	524,975	381,631	143,344	0
39325	Long Island Progressive Coalition (LIPC)	GJGNY Outreach Program	979,220	942,306	36,914	0
39326	Adirondack North Country Association (ANCA)	GJGNY Outreach Program	243,803	203,941	39,862	0
39353	Public Policy and Education Fund - Southern Tier (PPEF-ST)	GJGNY Outreach Program	269,446	264,581	4,865	0
39780	Rural Ulster Preservation Company (RUPCO)	GJGNY Outreach Program	810,722	736,521	74,200	0
39827	Sustainable South Bronx (SSBx)	GJGNY Outreach Program	309,858	193,983	115,875	0
40732	Affordable Housing Partnership (AHP)	GJGNY Outreach Program	388,411	356,352	32,058	0
41521	El Puente	GJGNY Outreach Program	274,167	204,927	69,240	0
42719	People United for Sustainable Housing (PUSH)	GJGNY Outreach Program	581,041	462,126	118,915	0

Table 8-8 continued

Identification Number	Contractor	Description	Contract Amount	Expended	Encumbered	Committed
43774	PathStone	GJGNY Outreach Program	449,772	448,609	0	0
50590	Benchmark Printing Inc.	OBR Inserts	438	438	0	0
53612	Benchmark Printing Inc.	OBR Inserts	267	267		0
61491	Conservation Services Group Inc.	Green Jobs – Green New York Training and Implementation Contractor	549,705	516,225	0	0
75627	CLEAResult Consulting Inc.	GJGNY TIC	533,554	330,682	202,872	0
82424	Benchmark Printing Inc.	OBR Complaint Forms	1,257	1,257	0	0
22502-1	Brand/Cool Marketing	GJGNY Marketing	24,204	0	24,204	0
TOTAL			\$14,874,294	\$13,950,382	\$889,724	\$0

9 GJGNY Low- to Moderate-Income Working Group

Section A.3008/S.2008, Part SS, of the New York State 2015–2016 Budget included requirements for NYSEERDA related to GJGNY as follows:

- Provide a report to the executive, temporary president of the Senate, Speaker of the Assembly, Chair of the Senate Committee on Energy and Telecommunications, and Chair of the Assembly Committee on Energy regarding the financial status of the GJGNY program. The financial status report was submitted on May 1, 2015.
- Continue to offer financing, through the GJGNY program for qualified energy efficiency services to all applicants who were eligible on January 1, 2015, through March 31, 2016.
- Develop standards and/or criteria that will encourage and increase participation of and issuance of loans to LMI households statewide for qualified energy efficiency services under the GJGNY program.
- Convene a working group to assist in developing these standards and/or criteria that includes individual representatives of CBOs.
- Consult with and solicit information and recommendations from the working group as to how to increase participation and issuance of loans to LMI households seeking qualified energy efficiency services.
- Report the results of consultations with and solicitations of the working group to the Governor, Senate Majority Leader, and Speaker of the Assembly within six months of the effective date of the legislation.

As discussed in Section 1, in April 2015 NYSEERDA established a GJGNY LMI Working Group. The GJGNY LMI Working Group consisted of 19 members who represent CBOs, LMI consumer advocates, advocates on utility and housing issues, and stakeholders (including contractors) of the solar electric and home energy services industries. The group is chaired by the president and CEO of NYSEERDA. To facilitate consistency and inter-group communication, several members of (or organizations represented on) the GJGNY Advisory Council also served on the GJGNY LMI Working Group. Members of the working group are listed in Table 9-1.

Table 9-1. GJGNY LMI Working Group Members

Name	Organization
John B. Rhodes	NYSERDA (Chair)
Michael Corso	New York State Department of Public Service
Stephan Edel	Center for Working Families
Bill Feldmann	Empire Clean Energy Supply
Adam Flint	Binghamton Regional Sustainability Coalition
Clarke Gocker	PUSH Buffalo
Stan Greschner	Grid Alternatives
Jeff Irish	Hudson Solar
Guy Kempe	RUPCO
Kathleen Langton	Affordable Housing Partnership Home Ownership Center
Carlo Lanza	Harvest Power
Euphemia Martin	Public Policy and Education Fund of New York – Southern Tier
Michael Murphy	All Star Energy
Ellen Redmond	International Brotherhood of Electrical Workers
Henri Rivers	Drum River Renewable Energy & Efficiency
Marriele Robinson	Long Island Progressive Coalition
Hal Smith	Home Energy Performance by Halco
Angela Tover	Sustainable South Bronx
Hubert Van Tol	Pathstone

The GJGNY LMI Working group met eight times from April through September 2015. In addition, some members met as small subgroups to discuss and formulate recommendations regarding specific barriers or topics. Recommendations were offered by working group members or subgroups to the entire working group for discussion and consensus.

As required, the working group report was submitted to the Governor and members of the New York State Legislature on October 1, 2015, and is posted on NYSERDA’s web site.²⁴ Except where noted in the report, the recommendations reflected the consensus of all members of the working group. Additional input from individual members of the group, which may reflect additional details or views of those

²⁴ GJGNY LMI Working Group Recommendations Report. September 2015. nyserda.ny.gov/-/media/Files/EDPPP/GJGNY/Advisory-Council-Updates/GJGNY-LMI-Working-Group-Recommendations.pdf

members regarding barriers, challenges and recommendations, or general comments on the GJGNY program, were provided as an Appendix to the LMI Working Group Recommendations Report. In addition, a great deal of program data characterizing the participation of LMI households in GJGNY and other NYSERDA programs is provided.

The GJGNY LMI Working Group Recommendations Report identified numerous barriers to LMI household participation in energy efficiency and renewable energy (primarily solar electric, also known as photovoltaic or PV) projects and the GJGNY loan program. The barriers generally fell into five categories: challenges of the loan process for installers and contractors, challenges of the loan process for consumers, barriers related to affordability of a project or loan, barriers related to outreach and assistance to consumers interested in undertaking a project, and barriers related to accessing the program. Recommendations to overcome those barriers and challenges are provided in the report. In most cases, NYSERDA immediately accepted the recommendations and began to take action on their implementation. Some recommendations were implemented prior to the submission of the report. For example, NYSERDA was able to immediately speed up the process for paying program incentives and loan proceeds to PV installers. In addition, NYSERDA was able to clarify the loan qualification rules regarding manufactured housing, an important housing type for lower income households. Since the report was submitted, NYSERDA launched a streamlined combined online application for HPwES subsidies and the GJGNY loan application; established a way that contractors could identify third-party funding being used to support a project and any timing requirements associated with that funding; improved access to project information for CBOs; and improved overall approval times on HPwES projects. However, some recommendations require additional research, planning, or discussion before an action plan can be developed. Examples of those recommendations include further expansion of loan underwriting criteria to reach households currently unable to qualify; improved access to financing for necessary non-energy improvements that prevent energy efficiency work from going forward; improved communication between NYSERDA, CBOs, and contractors; and improved training for contractors, installers, and CBOs on a variety of relevant topics. NYSERDA continues to explore options for addressing these types of recommendations.

Some working group members also brought forward additional barriers to participation or challenges related to aspects of the GJGNY program that were outside the mission of the GJGNY LMI Working Group. The report, NYSERDA's response to recommendations, and the additional barriers and challenges were shared with the GJGNY Advisory Council. As a result, in January 2016, the GJGNY Advisory Council established two additional working groups to address the issues that went beyond the scope of the GJGNY LMI Working Group. Information about these two additional working groups can be found in sections 2.1 and 2.2 of this report.

NYSERDA has completed implementation of a number of recommendations of the GJGNY LMI Working Group, resulting in faster payment of solar PV incentives to installers, a streamlined and combined online loan and subsidy application, improved processes for loan and subsidy applications and approvals, consideration of moderate-income households with up to 120 percent of the State or area median income when designing loan interest rates, and improved information sharing regarding projects associated with CBOs. NYSERDA continues to act on the recommendations of the LMI Working Group. A chart showing each of the recommendations and the status of implementation or resolution is posted on NYSERDA's web site and updated regularly.²⁵

Overall, the GJGNY LMI Working Group process has resulted in significant improvements, specifically in communications with stakeholders and within NYSERDA's LMI programs.

²⁵ GJGNY Low- to Moderate-Income Working Group Status of Recommendations. Ongoing. nyserdera.ny.gov/-/media/Files/EDPPP/GJGNY/GJGNY-LMI-Status-of-Recommendations.pdf

10 Evaluation

Since the introduction of GJGNY, NYSERDA has engaged its third-party evaluation contractors to develop and implement evaluation plans for GJGNY programs. Each evaluation activity is designed to assess the effectiveness, progress, and outcomes related to each of the GJGNY program initiatives.

This section describes evaluation activities completed during the reporting period, underway, and planned. Evaluation contractor reports are posted on NYSERDA's website for public use once completed.²⁶

10.1 Completed Evaluation Activities

10.1.1 CBO Initiative, Phase 2

This evaluation is the second phase of a process evaluation and market characterization assessment (PE/MCA) of the GJGNY Outreach program, through which CBOs conducted outreach with priority communities to encourage residential, small business/not-for profit, and multifamily energy efficiency projects, as well as workforce development training and accreditation. CBOs allocated a majority of their resources to residential outreach, where they recruited households to participate in NYSERDA's HPwES program. The first phase of the evaluation, completed in April 2014, documented program staff and CBO experiences with the GJGNY Outreach program and evaluated CBO outreach strategies in each sector. This second phase of the evaluation focused on CBOs' residential outreach, exploring HPwES participant and contractor experiences with the GJGNY Outreach program and the program's effectiveness in expanding participation in HPwES.

This evaluation is a component of the larger HPwES process evaluation and market characterization effort. Data collection activities informing this evaluation include a brief database analysis, surveys with residential energy efficiency audit recipients, surveys with HPwES participants, and interviews with HPwES participating retrofit contractors.

This evaluation found that CBOs are bringing in households that had not heard of or considered HPwES prior to engagement with the CBO. These households are more likely to live in older homes, identify as

²⁶ Visit nyserdera.ny.gov/About/Publications/Program-Planning-Status-and-Evaluation-Reports/Evaluation-Contractor-Reports to view completed evaluation reports.

non-Caucasian, and have lower incomes and less education than non CBO-affiliated HPwES participants. A large majority of the CBO-affiliated participants would not have moved forward with their HPwES project without CBO support and engagement. Finalized results of this evaluation are posted to NYSERDA's website.²⁷

10.1.2 Small Commercial Energy Efficiency

An evaluation of the Small Commercial Energy Efficiency Program that assessed the measure adoption rate over time, the degree of program influence on the participant decision-making, and the proportion of installed measures for which customers accessed other NYSERDA funding was completed in December 2015. The Program provides free energy audits to smaller commercial and not-for-profit organizations. The evaluation assessed the net savings caused by Program-funded audits completed between July 1, 2010 and December 31, 2013. The analysis was based on a telephone survey of a sample of participants and included evaluation of the measure adoption rate, free ridership, spillover, and overlap. The savings realization rate of adopted measures and a phone survey correction factor were deemed from previous impact evaluation results.

The 2015 Small Commercial Energy Efficiency Program Impact Evaluation found that 44 percent of the energy savings recommended through program audits were reported to be implemented. The Program electric measure adoption rate is 0.54 and the fossil fuel rate is 0.33. The Program free ridership is 0.13, overlap is 0.05, and spillover is 0.11. This evaluation also provides recommendations that seek to improve Program effectiveness, with consideration to Program revisions associated with the CEF the Reforming the Energy Vision. Finalized results of this evaluation are posted to NYSERDA's website.²⁸

²⁷ *GJGNY CBO Outreach Program Process Evaluation and Market Characterization Assessment: Phase II*. Prepared for NYSERDA by Research Into Action, Inc. December 2015. nyserdera.ny.gov/-/media/Files/Publications/PPSER/Program-Evaluation/2016ContractorReports/GJGNY-CBO-Outreach-Program-Process-Evaluation.pdf

²⁸ *Small Commercial Energy Efficiency Program Impact Evaluation (July 2010-December 2013)*. Prepared for NYSERDA by ERS. December 2015. nyserdera.ny.gov/-/media/Files/Publications/PPSER/Program-Evaluation/2015ContractorReports/2015-Small-Comm-Impact-Evaluation-July-2010-December-2013.pdf

10.2 Evaluation Activities Currently Underway

Two evaluation projects are currently underway: an impact evaluation of the GJGNY audit-only participants in the residential sector and an update to the GJGNY Jobs Impact Assessment. The status of each project is described in the following subsections.

10.2.1 Single-Family Residential Buildings

As a part of the impact evaluation of the HPwES program, the evaluators are seeking to assess the energy-related impacts of GJGNY audit-only participants. Evaluation contractors conducted a pre- and post-consumption billing analysis, which assessed the energy saving impacts associated with homeowners who received a GJGNY audit and did not pursue participation in the NYSERDA residential programs. NYSERDA received comments from program staff on the evaluation results and is working toward having the evaluation results available in fall 2016.

10.2.2 Jobs Impact Assessment

An evaluation of the GJGNY Jobs impacts is currently underway. This study is designed to update the GJGNY Jobs analysis that was conducted in 2013. This GJGNY Jobs assessment will be conducted using a phased approach. Phase 1 involves primary data collection via telephone and web-based surveys of various GJGNY market actors and the Phase 2 component of the evaluation includes an update to the 2013 macroeconomic assessment of indirect jobs. This evaluation is currently in the Phase 1 stage; surveys and in-depth interviews are nearly complete and data cleaning has begun. Primary data collection with program participants launched late April 2016 and expected to continue through July 2016. Phase 2 analysis, utilizing primary data collected in Phase 1, is planned to begin August 2016. NYSERDA will work toward a final report in November of 2016.

10.3 Evaluation Activities Planned

10.3.1 On-Bill Recovery Financing

OBR, launched in January 2012, is a way to obtain loans for energy efficiency improvements through NYSERDA whereby customers repay these loans through a charge on the customer's electric and/or gas utility bill. As an early critical mass of loans reached completion, NYSERDA has been evaluating performance on several key indicators. A full and more complete evaluation of the OBR activities is planned for 2016–2017. This timeline allows for the OBR mechanism to mature and the number of projects to increase.

10.4 Budget

Table 10-1 provides the Evaluation budget.

Table 10-1. Evaluation Budget

Component	Budget	Expended	Encumbered	Committed	Balance
Internal Cost	\$5,600,000	\$898,636	\$0	\$0	\$147,438
Evaluation Consultants		2,159,502	1,394,424	1,000,000	
TOTAL	\$5,600,000	\$3,058,138	\$1,394,424	\$1,000,000	\$147,438
Expended: Contractor invoices and loans processed for payment by NYSERDA. Encumbered: Remaining funding obligated under a contract, purchase order, incentive award, or loan. Committed: Planned funding for contracts awarded and under negotiation; loans approved; and planned funding under active development through open solicitations with upcoming proposal due dates.					

10.5 Evaluation Contracts

External contracts related to the evaluation of the GJGNY Program are detailed in Table 10-2.

Table 10-2. Evaluation Contracts Entered Into

Identification Number	Contractor	Description	Contract Amount	Expended*	Encumbered	Committed
PO- 19112	Navigant Consulting Inc.	Cost Mod: MCA Evaluation	\$189,757	\$189,757	\$0	\$0
PO- 24594	NMR Group Inc.	General Evaluation Assistance Contractor	119,985	68,206	51,779	0
PO- 24594	NMR Group Inc.	Cost mod increase: general evaluation assistance contractor	25,000	0	25,000	0
PO- 28232	ICF Resources LLC	TWO # 1 Planning	15,371	15,371	0	0
PO- 28232-1	ICF Resources LLC	Mod 1 to TWO #1 Line 3	8,497	8,497	0	0
PO- 28232-1	ICF Resources LLC	Recreate of Balance PO 0000028232 Task #1	239	239	0	0
PO- 29131	Research Into Action Inc.	Process and market evaluation contractor	850,002	850,002	0	0

Table 10-2 continued

Identification Number	Contractor	Description	Contract Amount	Expended*	Encumbered	Committed
PO- 29131	Research Into Action Inc.	Cost mod: Process and market evaluation contractor	649,998	43,046	621,333	0
PO- 29725	Abt SRBI Inc.	Survey data collection contractor for evaluation of NYSERDA Programs	326,480	326,480	0	0
PO- 29725	Abt SRBI Inc.	Cost mod increase: Evaluation Survey contractor	70,000	25,553	44,447	0
PO- 30146	Energy & Resource Solutions Inc.	Impact Evaluation of NYSERDA Programs	500,000	348,134	151,865	0
PO- 30146	Energy & Resource Solutions Inc.	Cost Mod: Impact Evaluation Contractor	500,000	0	500,000	0
PO- 34368	ICF Resources LLC	TWO #4 GJGNY	96,180	96,180	0	0
PO- ST9835-1	Research Into Action Inc.	Modification No. 5 - Process Assessment and Evaluation Management for the Energy Smart Program.	6,458	6,458	0	0
PO- ST9942-1	Apprise Incorporated	Mod 5 Survey Data	114,995	114,995	0	0
PO- ST9942-1	Apprise Incorporated	Cost Mod 6 Survey Data	20,000	20,000	0	0
PO- ST9835-1	Research Into Action Inc.	Modification No. 4 - Process Assessment and Evaluation Management for the Energy Smart Program.	46,583	46,583	0	0
REQ - 3183		Market Research Evaluation and Support				1,000,000
TOTAL			\$3,539,544	\$2,159,502	\$ 1,394,424	\$1,000,000

* Expended funds in the amount of \$898,636 for internal costs are not represented in this table.

Appendix A: Advisory Council Meeting Agendas



NYSERDA

ANDREW M. CUOMO
Governor

RICHARD L. KAUFFMAN
Chair

JOHN B. RHODES
President and CEO

**Green Jobs – Green New York (GJGNY)
Advisory Council Meeting Agenda
August 7, 2015
1:00 pm – 3:00 pm ET**

Meeting held at NYSERDA's Albany, New York City, and Buffalo Offices.

Call-in number: 1-866-394-2346, Conference code: 5819671375

Welcome and Introductions	John Rhodes
GJGNY Residential Loan Interest Rates for Sustainability	Jeff Pitkin
<ul style="list-style-type: none">• Cost Components• Loan Portfolio Mix• Cash Flow• Implications for Sustainability• Options	
Public Input	
Closing Remarks and Next Steps	

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NYSERDA

ANDREW M. CUOMO
Governor

RICHARD L. KAUFFMAN
Chair

JOHN B. RHODES
President and CEO

**Green Jobs – Green New York (GJGNY)
Advisory Council Meeting Agenda
September 22, 2015
3:00 pm – 5:00 pm ET**

Meeting held at NYSERDA’s Albany, New York City, and Buffalo Offices.

Call-in number: 1-866-394-2346, Conference code: 5819671375

Welcome and Introductions	John Rhodes
Budget Reallocation	Karen Hamilton
GJGNY LMI Working Group Report	John Rhodes Karen Hamilton
How/Where GJGNY Initiatives Appear in the CEF Proposal	John Rhodes Karen Hamilton
Public Input	
Closing Remarks and Next Steps	

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ANDREW M. CUOMO
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RICHARD L. KAUFFMAN
Chair

JOHN B. RHODES
President and CEO

**Green Jobs – Green New York (GJGNY)
Advisory Council Meeting Agenda
October 23, 2015
1:00 pm – 3:30 pm ET**

Meeting held at NYSERDA's Albany, New York City, and Buffalo Offices.

Call-in number: 1-866-394-2346, Conference code: 5819671375

Welcome and Introductions. Membership Update	John Rhodes
Loan Fund Sustainability	John Rhodes Jeff Pitkin
GJGNY LMI Working Group Report	John Rhodes Karen Hamilton
<ul style="list-style-type: none">• Status of Recommendations• Discussion on Process for Addressing Additional Recommendations and Topics	
Public Input	
Closing Remarks and Next Steps	

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NYSERDA

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Governor

RICHARD L. KAUFFMAN
Chair

JOHN B. RHODES
President and CEO

**Green Jobs – Green New York (GJGNY)
Advisory Council Meeting Agenda
April 15, 2016
2:00 pm – 5:00 pm ET**

Meeting held at NYSERDA’s Albany, New York City, and Buffalo Offices.

Call-in number: 1-866-394-2346, Conference code: 5819671375

Welcome and Introductions	John Rhodes
Program Status	Jeff Pitkin
Future Funding Realities	John Rhodes Jeff Pitkin
Program Changes	John Rhodes
Analysis of Options	John Rhodes
Near Term Steps	John Rhodes
Public Input	
Closing Remarks and Next Steps	

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NYSERDA

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JOHN B. RHODES
President and CEO

**Green Jobs – Green New York (GJGNY)
Advisory Council Meeting Agenda
April 27, 2016
3:00 pm – 5:00 pm ET**

Meeting held at NYSERDA’s Albany, New York City, and Buffalo Offices.

Call-in number: 1-866-394-2346, Conference code: 5819671375

Welcome and Introductions	John Rhodes
Estimated Overcollateralization Requirements by Segment	Jeff Pitkin
Public Input	
Closing Remarks and Next Steps	

New York State Energy Research and Development Authority

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**West Valley Site
Management Program**
9030-B Route 219
West Valley, NY
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NYSERDA

ANDREW M. CUOMO
Governor

RICHARD L. KAUFFMAN
Chair

JOHN B. RHODES
President and CEO

**Green Jobs – Green New York (GJGNY)
Advisory Council Meeting Agenda
May 13, 2016
2:30 pm – 5:00 pm ET**

Meeting held at NYSERDA’s Albany, New York City, and Buffalo Offices.

Call-in number: 1-866-394-2346, Conference code: 5819671375

Welcome and Introductions	John Rhodes
Principles of the Program	John Rhodes
Summary of Discussions to Date	John Rhodes
Proposed Interest Rates	John Rhodes
Analysis of Changes	John Rhodes
Timing	John Rhodes
Public Input	
Closing Remarks and Next Steps	

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Appendix B: Annual On-Bill Recovery Report

Annual On-Bill Recovery Report

All OBR loans, energy savings and expenditures reported in this Appendix are included in the GJGNY Annual totals reported in the body of the report. Expenditures are pro-rated based on the percentage of OBR loans compared to the total GJGNY portfolio.

Reporting period - January 30, 2012 through June 30, 2016		Residential		Small Business / Not-For-Profit		Multifamily	
		Customers	Dollars	Customers	Dollars	Customers	Dollars
Utility Account Arrears > 60 Days	Central Hudson Gas and Electric	44	\$10,209	0	\$0	0	\$0
	Consolidated Edison	13	\$6,374	0	\$0	0	\$0
	PSEG Long Island	153	\$132,293	1	\$9,848	0	\$0
	National Grid	305	\$262,822	0	\$0	0	\$0
	New York State Electric and Gas Corporation	9	\$3,613	0	\$0	0	\$0
	Orange and Rockland Utilities	4	\$3,610	0	\$0	0	\$0
	Rochester Gas & Electric	2	\$1,096	0	\$0	0	\$0
	Total	530	\$420,018	1	\$9,848	0	\$0
On-Bill Recovery Payment Arrears > 60 Days ¹	Central Hudson Gas and Electric	121	\$17,373	0	\$0	0	\$0
	Consolidated Edison	42	\$28,301	0	\$0	0	\$0
	PSEG Long Island	688	\$249,259	9	\$21,166	0	\$0
	National Grid	942	\$215,402	0	\$0	0	\$0
	New York State Electric and Gas Corporation	9	\$3,996	0	\$0	0	\$0
	Orange and Rockland Utilities	4	\$1,046	0	\$0	0	\$0
	Rochester Gas & Electric	1	\$144	0	\$0	0	\$0
	Total	1,807	\$515,520	9	\$21,166	0	\$0
Utility Service Terminated	Central Hudson Gas and Electric	0	\$0	0	\$0	0	\$0
	Consolidated Edison	0	\$0	0	\$0	0	\$0
	PSEG Long Island	6	\$5,700	0	\$0	0	\$0
	National Grid	17	\$10,204	0	\$0	0	\$0
	New York State Electric and Gas Corporation	24	\$3,480	0	\$0	0	\$0
	Orange and Rockland Utilities	1	\$299	0	\$0	0	\$0
	Rochester Gas & Electric	4	\$455	0	\$0	0	\$0
	Total	52	\$20,138	0	\$0	0	\$0

Reporting period - January 30, 2012 through June 30, 2016		Residential		Small Business / Not-For-Profit		Multifamily	
		Units	Dollars	Units	Dollars	Units	Dollars
1st Year Energy Savings ²	Estimate of kWh savings	2,972,217	\$451,825	307,828	\$44,138	-	\$0
	Estimate of oil mmBtu savings	152,753	\$4,275,366	1,742	\$26,582	-	\$0
	Estimate of propane mmBtu savings	1,481	\$55,090	-	\$0	-	\$0
	Estimate of efficiency natural gas mmBtu savings	68,344	\$908,106	-	\$0	-	\$0
	Estimate of oil conversion gas mmBtu savings	(55,145)	(\$801,319)	-	\$0	-	\$0
	Estimate of other mmBtu savings	28,298	\$46,186	-	\$0	-	\$0
	Total Dollar Savings		\$4,935,254		\$70,720		\$0
Lifetime Energy Savings ²	Estimate of kWh savings	51,276,033	\$7,568,604	N/A	N/A	-	\$0
	Estimate of oil mmBtu savings	3,540,508	\$98,803,512			-	\$0
	Estimate of propane mmBtu savings	33,986	\$1,256,744			-	\$0
	Estimate of efficiency natural gas mmBtu savings	1,573,907	\$20,784,016			-	\$0
	Estimate of oil conversion gas mmBtu savings	(1,325,148)	(\$19,276,077)			-	\$0
	Estimate of other mmBtu savings	682,477	\$1,121,117			-	\$0
	Total Dollar Savings		\$110,257,916				\$0

OBR Expenditures through 6/30/16		
Program Area	Expended	
Administrative/General ¹	\$3,169,888	
Marketing	\$4,913,229	
Evaluation	\$1,063,433	
Audit Incentive	\$9,750,564	
Payment to Utilities (\$100 per loan & 1% of loan amount)	\$1,237,168	
OBR Loans	RES	\$75,226,177
	SB/NFP	\$466,015
	MF	\$0
	Total	\$75,692,192
Implementation/Services	RES	\$4,273,684
	SB/NFP	\$30,279
	MF	\$0
Total Expended	\$100,130,437	

¹ On-Bill Recovery (OBR) payment arrears include utility customers who have active Deferred Payment Arrangements (DPAs) with their utility company. OBR installment charges collected from the consumer are applied to active utility DPAs resulting in NYSERDA OBR delinquencies until the utility arrearage is satisfied.

² Energy savings do not include installed capacity from photovoltaic OBR loans.

³ Includes NYS Cost Recovery Fee

Appendix C: Home Performance with ENERGY STAR® Eligible Measures and Accessories

NY Home Performance with ENERGY STAR® Eligible Measures and Accessories

Effective: June 16, 2016

This is a general guide to eligible incentives and financing options available through NYSERDA’s Home Performance with ENERGY STAR (HPwES) Program. Eligibility may vary based on the energy efficiency requirements for each upgrade type, results of the comprehensive home assessment, fuel type, energy utility, and funding source availability.

Subject to the terms described on pages 2 and 3, the upgrades marked with an “✓” below on the “Prequalified List” are eligible for either a 10% High Efficiency Measure Incentive (HEMI), the 50% Assisted Subsidy for income-eligible households, or the Residential Loan Fund. NYSERDA also offers two low-interest financing options through Green Jobs – Green NY (GJGNY): a Smart Energy Loan and an On-Bill Recovery (OBR) Loan. A Smart Energy Loan project for up to \$13,000 that includes only the upgrades on the “Prequalified List” below requires no additional cost-effectiveness screening. If the project includes additional eligible upgrades below that are not on the Prequalified List, the loan is subject to cost-effectiveness standards as described on page 4. Items on this list without a checkmark are OBR or Smart Energy loan only.

Table 1. Eligible Measures – Prequalified List

	Eligible Measures	Minimum Efficiency Requirements	Prequalified
Primary Heating and Cooling System^{1, 6, 8}	Furnace ² – Natural Gas or LP	AFUE 95% (as long as not prohibited by local codes). Furnaces with ECM Motor allowed.	✓
	Furnace ² – Fuel Oil	AFUE 85%	✓
	Boiler – Gas Condensing	AFUE 90%	✓
	Boiler – Oil Condensing	AFUE 87%	✓
	Boiler – Non-Condensing ³	AFUE 85% (project must include boiler reset control)	✓
	Boiler – Steam	AFUE 82% (size must be matched to cumulative capacity of connected radiators, per Institute of Boilers & Radiator Mfrs (IBR) standards)	✓
	Boiler Reset Controls	Programmed properly per manufacturer’s specifications and site conditions. Maximum price of \$500.	✓
	Air Source Heat Pump (electric split systems) ²	14.5 SEER / 12 EER / 8.2 HSPF	
	Ground Source Heat Pump ²	ENERGY STAR Qualified (closed-loop, open-loop, or direct expansion). Requires submission of detailed engineering design work prior to approval.	
	Wood Stove ⁴	EPA certified for particulate matter output of 4.5 grams per hour or less	
	Pellet Stove/Pellet Stove Insert ⁵	EPA certified for particulate matter output of 2.0 grams per hour or less	
	Distribution Improvements in Natural Gas or Electrically Heated Homes ⁶	Installed in accordance with all applicable state and local codes	
	Distribution Improvements in Oil or Propane Heated Homes ⁶	Installed in accordance with all applicable state and local codes	✓
	Duct Sealing	UL 181B mastic or tape; use of “duct tape” is disallowed	✓
	Duct Insulation	Installed in accordance with all applicable state and local codes	✓
	Pipe Insulation	R-3	✓
Building Shell	Central Air Conditioner (split system) ^{7,9}	AHRI Certificate Required. 14.5 SEER / 12 EER. Except in Con Edison and Central Hudson electric territory, this measure is subject to site-specific TRC analysis in order to determine HEMI eligibility.	✓
	Programmable Thermostat	5+2 day programmable thermostat including smart thermostat. Limited to one thermostat installed per zone.	✓
	Insulation (attic, wall, floor, band joist, basement, crawl space)	Refer to Insulation Program Policy for homes heated with natural gas or electricity. Must be accompanied by blower door assisted air sealing per BPI and program guidelines.	✓
	Air Sealing	Supervised by professional; blower door assisted per BPI and program guidelines.	✓
	Replacement Windows	ENERGY STAR for climate/region. May be subject to SHPO review.	
Storm Windows and Doors	No minimum efficiency requirement. May be subject to SHPO review.		
Movable Window Insulation	R-3		
Exterior Doors	ENERGY STAR for climate/region. May be subject to SHPO review.		

	Eligible Measures	Minimum Efficiency Requirements	Prequalified
Water Heater ⁸		Tank: 40-100 gallons, EF \geq 0.67, FHR \geq 67 gallons per hour, <75,000 BTU. ENERGY STAR Qualified	✓
	Natural Gas	On-Demand: EF \geq 0.82, GPM \geq 2.5 over a 77°F rise, <2 gallons storage, <200,00 BTU. ENERGY STAR Qualified. Must replace a conventional 40 or 50 gallon tank.	✓
	Electric	EF .93	
		Tank: 20-100 gallons, EF \geq 0.67, FHR \geq 67 gallons per hour, <75,000 BTU. ENERGY STAR Qualified	✓
	Propane	On-Demand: EF \geq 0.82, GPM \geq 2.5 over a 77°F rise, <2 gallons storage, <200,00 BTU. ENERGY STAR Qualified	✓
	Oil	Tank: 20-100 gallons, EF \geq 0.67	✓
	Indirect-Fired Tank	UL Approved	✓
	Heat Pump Water Heaters	50 gallon tank, EF \geq .2.2, ENERGY STAR Qualified. Must be installed in an unconditioned space.	✓
	Pipe Insulation	R-3	✓
	Hot Water Tank Insulation - Electric	R-10	
Conservation	Faucet Aerator	No minimum efficiency requirement	✓
	Low Flow Showerhead	Maximum flow rate of 1.5 gallons per minute. Aerating type showerheads not eligible.	✓
Appliances & Lighting ⁹	Refrigerator	CEE Tier 2 or 3	✓
	Freezer	ENERGY STAR Qualified	✓
	Dishwasher	ENERGY STAR Qualified	
	Clothes washer	ENERGY STAR Qualified	
	Dehumidifier	ENERGY STAR Qualified	✓
	Room Air Conditioner	ENERGY STAR Qualified	✓
	CFLs	ENERGY STAR Qualified. Refer to Lighting Guidelines in Contractor Resource Manual (CRM).	✓
	LEDs	ENERGY STAR Qualified. Refer to Lighting Guidelines in CRM.	✓
	Light Fixtures	ENERGY STAR Qualified for compact fluorescent, or electronic ballast for fluorescent tubes	

¹ Defined as the primary heating system for the space being conditioned. Addition/replacement of secondary heating systems is not eligible. The new unit must be the primary heat for the space being served.

² Duct systems for warm air furnaces, heat pumps and central air conditioners should be tested and sealed to reduce leakage. This will help ensure that the total system will operate efficiently.

³ In instances where venting conditions require the installation of a non-condensing boiler, boiler reset controls must be included in the project; tank-less coil DHW is not allowed.

⁴ Wood stoves must supply a primary portion of heat.

⁵ Visit www.nysersda.ny.gov/renewableheatny/pelletstoves for qualifications and available incentives. RHNy qualified pellet stoves and inserts are loan pre-qualified for up to \$13,000. See guidance under RHNy documents on the Contractor Support website regarding proper modeling.

⁶ In instances where an area of a home lacks adequate distribution, installation of new distribution to serve the area is eligible. The area lacking adequate distribution must be located within the pre-existing thermal boundary.

⁷ Not eligible for the Assisted Home Performance subsidy.

⁸ Refer to the Fuel Conversion Policy for eligibility of fuel switches

⁹ Measure is only eligible for incentive when there is a replacement of an existing appliance or existing cooling system. Maximum Assisted Subsidy for each appliance is: \$300 for refrigerators and freezers; \$75 for dehumidifiers; and \$50 for room air conditioners. Only the base price of the appliance plus applicable tax is eligible; delivery, set-up, warranties or appliance accessories, and any associated taxes on these items are not eligible for incentives.

Eligible Health & Safety Measures and Accessories

Non-prequalified measures and Health and Safety Measures and Accessories are not eligible for the 10% HEMI, the 50% Assisted Subsidy, or the Residential Loan Fund.

Smart Energy Loan:

Up to 15%, not to exceed \$2,000, in non-prequalified measures listed in Table 1 and eligible Health & Safety Measures and Accessories in Table 2 may be included in a Smart Energy Loan without additional cost-effectiveness screening.

On-Bill Recovery:

Up to 15%, not to exceed \$2,000, in eligible Health & Safety Measures and Accessories in Table 2 may be included in an On-Bill Recovery Loan subject to cost-effectiveness requirements.

Table 2. Eligible Health & Safety Measures and Accessories

Health and Safety	Asbestos abatement	Ventilation Fans (Whole house fans or similar attic exhaust fans are not eligible)
	Electrical service upgrade necessary when installing a new heating/cooling unit	Repairs/upgrades to heating and/or DHW systems (including power venting kits) to correct spillage, inadequate draft, carbon monoxide failures
	Upgrade of knob and tube wiring in order to install insulation	Measures to provide sufficient combustion air and prevent Combustion Appliance Zone (CAZ) depressurization, spillage or inadequate draft
	Radon and lead abatement work	Gas leak repair
	Cost of removing an oil tank or replacing a faulty oil tank when done in connection with a heating system replacement	Dryer vent repair
	Repairs to the home due to water damage, molds and mildew, ice dams or other symptoms of poor building performance, as long as the cause(s) of building performance-related damage are addressed	Heat/Energy Recovery Ventilator
Qualified Accessories	Attic soffit, gable, or ridge vents	Furnace humidifier
	Attic storage areas / mechanical access	Chimney liners and caps
	Attic pull-down stairs	Germicidal UV lights or HEPA filters
	Drywall as thermal barrier for spray foam or air sealing	AC coil when not installed with condenser
	Thermal barriers for spray foam	Fuel conversion accessory items
	Air Cleaners	Oil burner replacement
	Additional thermostats	Moisture barriers

All Health and Safety Measures and Accessories costs must be itemized for the purposes of determining incentive eligibility and loan cost effectiveness. These costs are eligible for incorporation into a Smart Energy Loan or On-Bill Recovery Loan, but are not eligible for the 10% HEMI, the Assisted Subsidy, or the Assisted Loan.

The costs associated with the installation of certain measures can be included in the related energy saving measure. Items such as high hat covers, kneewall wrap, weather stripping, and outlet gaskets can be included with air sealing. Baffles, insulation dams, and creating access to the attic can be included with attic insulation.

Renewable Technologies

Solar thermal and solar photovoltaic (PV) systems may be included in a Smart Energy Loan or the On-Bill Recovery Loan, subject to cost-effectiveness requirements, with approval through the NYSERDA Solar Thermal Program or NY-Sun.

Table 3. Renewable Technologies

	Eligible Measures	Minimum Efficiency Requirements
Renewable Technologies	Solar Thermal	OG-100 or OG-300 certification from SRCC. SF 0.5. Warranty: 10 years on the panel, 5 years on the system. System needs to be reviewed and approved by the NYSERDA or PSEGLI Solar Thermal Program prior to submission to HPwES.
	Solar Photovoltaic (PV)	Warranty: 5 years on the system. System needs to be reviewed and approved by NY-Sun prior to submission to HPwES.

INCENTIVES

The HPwES Program offers a 10% cash-back HEMI on eligible measures. For income-qualified customers, Assisted HPwES offers a 50% work scope subsidy of up to \$5,000 for a single-family home and up to \$10,000 for 2 to 4-family homes. The balance of the project cost is eligible for financing. The HEMI and Assisted Subsidy can be used in combination with low interest rate Smart Energy or On-Bill Recovery Loan. For those borrowers who choose to finance through the Residential Loan Fund, that loan may be combined with the Assisted Subsidy, but not the HEMI.

Incentive Eligibility

The 10% HEMI, 50% Assisted Subsidy, and the Residential Loan Fund are available for natural gas or electric efficiency measures to customers in the following utility territories: Central Hudson, Con Edison, National Fuel, National Grid (NYC and Upstate), NYSEG, Orange & Rockland, and Rochester Gas and Electric. Customers of National Grid (Long Island) are eligible for the HEMI or the Assisted Subsidy for natural gas efficiency measures only. The 10% HEMI and the 50% Assisted Subsidy may not be combined with any other utility incentive.

The HEMI and Assisted Subsidy for eligible oil and propane efficiency measures are available statewide regardless of utility territory.

FINANCING OPTIONS

Program Financing is available statewide for all eligible measures that meet the cost-effectiveness standards of the loan product.

The maximum loan amount for the Smart Energy and On-Bill Recovery Loans is \$13,000 per applicant; up to \$25,000 if the payback period is 15 years or less. The minimum loan is \$1,500.

The calculation of cost-effectiveness for the Smart Energy and On-Bill Recovery Loans is based on the amount borrowed by the consumer, net of any incentives, including the 10% HEMI, 50% Assisted Subsidy or utility incentives. Financing charges are included in the cost effectiveness calculation. Customers have the option to “buy down” the project cost so that the financed amount meets the cost effectiveness criteria. The loan terms are 5, 10, or 15 years, but the term may not exceed the average useful life of the financed measures.

Smart Energy Loan

The Smart Energy Loan is available at 3.99%*, or 3.49%* with automatic (ACH) payment, and is repaid in installments to NYSERDA’s loan servicer.

Up to 15%, not to exceed \$2,000, in non-prequalified upgrades listed in Table 1 and eligible Health and Safety Measures and Accessories in Table 2 may be included in a Smart Energy Loan without additional cost-effectiveness screening. For those projects where more than 15% of the cost is for items other than those on the Prequalified List, a Savings to Investment Ratio (SIR) greater than .8 is required.

On-Bill Recovery Loan

The On-Bill Recovery Loan, available at 3.49%*, is repaid through an installment charge on the customer’s utility bill. Upgrades listed in Table 1 and Table 2 may be included in the loan, however the monthly loan installment payment may not exceed 1/12th of the estimated annual energy cost savings for the improvements over the loan term. Measures and accessories listed in Table 2 are capped at 15% of the total prequalified measure cost, not to exceed \$2,000.

Residential Loan Fund

The Residential Loan Fund provides an interest rate reduction of up to 4.0% less than a Participating Residential Loan Fund Lender’s normal interest rate on loans up to \$20,000, for a term up to 10 years. The Residential Loan Fund is offered in limited areas and may not be combined with the 10% HEMI. Only those upgrades on the Prequalified List may be included in the Residential Loan Fund, and no further cost-effectiveness screening is required. Eligible upgrades in Table 2 may not be included in the Residential Loan Fund.

*Interest rates and loans terms are subject to change. Full details about all Program Financing are available at <http://www.nysesda.ny.gov/residential-financing>.

**Appendix D: Green Jobs – Green New York
Outreach and Marketing Constituency-based
Organization (CBO) Training Webinar Details;
July 1, 2015-June 30, 2016**

Green Jobs – Green New York Outreach and Marketing
Constituency-based Organization (CBO) Training Webinar Details
July 1, 2015-June 30, 2016

NYSERDA provides bi-monthly training to CBOs via a series of webinars that provide regular program updates, information on best practices, and other necessary information. During the reporting period, webinars addressed the following additional topics.

July 2015: Overview of the Clean Energy Fund and what CBO's most need to know; How to Engage a Homeowner's Association to allow CBO's to engage with condo boards and other managed communities; CBO Innovative Outreach cases such as English as Second Language outreach and other potential community program champions

September 2015: Energy Justice and Community Resilience as presented by NAACP; Community Solar NY information; Kin-based Appeals in Conservation Messaging, how messages can be spread within family and close associate groups

October 2015: How to Supercharge Outreach with Social Media; Key to Success that Everyone Misses: Strong Brand, how CBO's can differentiate their messages; Public Policy Education Fund of the Southern Tier's Student Internship Program has been a successful effort and helps spur outreach

December 2015: Understanding the Comprehensive Audit Report (Reviewed Cake, Optimiser, SnuggPro and TREAT reports)

January 2016: Review of Invoicing Procedures; Customer Concern Ticket Tracking; Lockheed Martin Tool for Ordering Marketing Materials, a review of these program procedures to expedite CBO paperwork

March 2016: Clean Energy Fund Update; When It's a Gut Rehab (How-To), an overview of how some projects may fit into the Residential New Con/Rehab program for advanced performance; Attracting Potential Contractors, to aid CBOs in speaking with more home performance contractors about participating in programs; Press and Marketing Item Approval Process

May 2016 – Multifamily Performance Partners Outreach Orientation, to familiarize CBOs with the pending MPP offering

June 2016 – Marketing Guidelines, review programmatic requirements; Multifamily Program Overview; Small Commercial Program Introduction, suitable for community businesses that CBOs encounter; Energy Finance Solutions Portal Changes; Connecting with Leads via an Elevator Pitch, how CBOs can script a succinct verbal message to engage potential project participants.

NYSERDA, a public benefit corporation, offers objective information and analysis, innovative programs, technical expertise, and support 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 nyserdera.ny.gov or follow us on Twitter, Facebook, YouTube, or Instagram.

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State of New York

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