New York State Energy Research and Development Authority

New York's Regional Greenhouse Gas Initiative-Funded Programs Status Report

Quarter Ending September 30, 2013

March 2014

The New NY WORKS for Energy

nyserda
Energy. Innovation. Solutions.

NYSERDA's Promise to New Yorkers:

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

Mission Statement:

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

Vision Statement:

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

Core Values:

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

Portfolios

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

Energy Efficiency and Renewable Energy Deployment

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

Energy Technology Innovation and Business Development

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

Energy Education and Workforce Development

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

Energy and the Environment

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

Energy Data, Planning, and Policy

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

NYSERDA Record of Revision

Document Title
New York's Regional Greenhouse Gas Initiative Programs Status Report Quarter Ending September 30, 2013 March 2014

Revision Date	Description of Changes	Revision on Page(s)
3-14-14	Original Issue	Original Issue

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1 Introduction

To implement the Regional Greenhouse Gas Initiative (RGGI), New York State (NYS) established its Carbon Dioxide (CO_2) Budget Trading Program through regulations promulgated by the Department of Environmental Conservation (DEC) and the CO_2 Allowance Auction Program through regulations promulgated by the New York State Energy Research and Development Authority (NYSERDA). This report is prepared pursuant to the New York's Regional Greenhouse Gas Initiative Investment Plan (2013 Operating Plan) and provides an update on the progress of programs through the quarter ending September 30, 2013. It contains an accounting of program spending, an estimate of program benefits, and a summary description of program activities, implementation, and evaluation. An amendment providing updated program descriptions and funding levels for the 2013 version of the Operating Plan was approved by NYSERDA's Board of Directors on June 17, 2013.

New York State invests RGGI proceeds to support comprehensive strategies that best achieve the RGGI CO_2 emission reduction goals. These strategies aim to reduce global climate change and pollution through energy efficiency, renewable energy, and carbon abatement technology. Deploying commercially available renewable energy and energy efficiency technologies helps to reduce greenhouse gas (GHG) emissions from both electricity and other energy sources in the short term. To move the State toward a more sustainable future, RGGI funds are used to empower communities to make decisions that prompt the use of cleaner and more energy efficient technologies that lead to lower carbon emissions as well as economic and societal co-benefits. RGGI helps to build capacity for long-term carbon reduction by training workers and partnering with industry. Using innovative financing, RGGI supports the pursuit of cleaner, more efficient energy systems and encourages investment to stimulate entrepreneurial growth of clean-energy companies. All of these activities use funds in ways that accelerate the uptake of low-emitting technologies.

2 Summary of Portfolio and Program Benefits

An overview of the quantifiable benefits that are expected to be achieved with expended and encumbered funds through this quarter related to carbon dioxide equivalent (CO_2e) reductions, energy savings, and energy bill savings is presented in this section. For more information on the methodology used to calculate CO_2e reductions and energy bill savings, see Appendix A. Former program names are listed in Appendix B. Detailed benefits results are presented in Appendix C.

Table 1 and Table 2 show the estimated cumulative annualized and expected lifetime benefits as of September 30, 2013, at the portfolio and program levels, respectively.[1] Figure 1compares the benefits by fuel type. These metrics are estimates made by program implementation staff and have not been evaluated. When evaluation results are available, they will be presented in subsequent Evaluation and Status Reports, which also will include these metrics along with macroeconomic indicators such as job creation resulting from program activity. NYSERDA begins tracking program benefits once projects have been installed, and provides estimated benefits for projects under contract but not yet operational (pipeline benefits). The reporting of fund transfers may lag behind the installation date such that program benefits are reported prior to the financial reporting of funds spent. Additionally, NYSERDA provides the estimated expected lifetime benefits from installed and pipeline savings. At this time, the program benefits include some projects that are also supported by other non-RGGI funding sources administered by NYSERDA.

This report also includes case studies to highlight the diversity and effectiveness of the RGGI portfolio of projects.

Case Study 1: Commercializing High-Energy-Producing, Low-Cost Batteries

A $1.5 million investment from RGGI proceeds is helping NOHMs Technologies Inc. develop a pilot nanoscale manufacturing facility in Rochester, N.Y., to commercialize high-energy-producing, low-cost lithium sulfur battery materials and battery cell prototypes. The company projects that these batteries will supply more than twice the energy at half the cost of battery materials currently used in mobile devices, electric vehicles, and military and stationary grid storage products. RGGI support for this project is part of New York State's comprehensive strategy to use RGGI proceeds in ways that best achieve carbon emission goals both in the short- and long-term. This strategy includes support for entrepreneurship and clean-energy companies in the State that develop products that will reduce energy use and carbon emissions. The state-of-the-art battery materials manufacturing facility is expected to be completed in October 2014.

[1] Cumulative annual benefits are reflective of the annual impacts from all currently operational projects installed, projects under a signed contract and projects with an application received that are not yet operational since program inception. Expected lifetime benefits are reflective of the total impacts over the entire lifecycle from all currently operational projects installed, projects under a signed contract and projects with an application received that are not yet operational since program inception. Please see Appendix A-4 for the measure-life assumptions.

Table 1. Summary of Expected Cumulative Portfolio Benefits through September 30, 2013

Benefits through September 30, 2013[a]	Net Greenhouse Gas Emission Savings[b] (Tons CO_2e[c])	Total Net Fuel Savings (MMBtu)	Net Efficiency Electricity Savings (MWh)	Net Renewable Energy Generation (MWh)	Total Net Electricity Savings/Generation (MWh)	Energy Bill Savings to Participating Customers (Millions of Dollars)
Cumulative Annualized Installed Savings[d]	96,916	889,027	24,385	16,710	41,095	21.2
Cumulative Annualized Pipeline Savings[e]	61,470	461,665	18,898	16,498	35,396	13.6
Cumulative Annualized Committed Savings[f]	158,386	1,350,692	43,283	33,208	76,491	34.8
Expected Lifetime Total Savings[g]	2,861,349	26,816,192	639,632	830,202	1,469,834	720.3

[a] Cross-program overlap for projects that received any combination of a Green Jobs-Green New York (GJGNY) audit, a GJGNY loan, or a RGGI-funded incentive through the Home Performance with ENERGY STAR® Program has been removed.

[b] These emission reductions are associated with both electric and fossil-fuel saving measures. Under a cap-and-trade system, the total number of emission allowances is determined by regulation. Regulated entities can purchase allowances and collectively emit up to the cap that is currently in place. Therefore, in the near term, electric efficiency projects may not decrease the overall amount of emissions going into the atmosphere. However, electric efficiency projects will reduce end-users' responsibility or footprint associated with emissions from electricity production.

[c] CO_2e stands for carbon dioxide equivalent and describes the amount of CO_2 that would have the same global warming potential as a given mixture of gases based on factors published by the Intergovernmental Panel on Climate Change.

[d] Inclusive of savings from all currently operational projects installed since program inception.

[e] Inclusive of savings from all projects under a signed contract and projects with an application received that are not yet operational.

[f] The sum of Installed Savings and Pipeline Savings.

[g] The expected benefits over the lifetime of all operational projects, projects under a signed contract, and projects with an application received that are not yet operational. Please see Appendix A-4 for the measure-life assumptions.

Table 2. Summary of Expected Cumulative Annualized Program Benefits through September 30, 2013

Program	Costs (millions of dollars)		Net Energy Savings (Annualized MMBtu)					Net Electricity Savings or Renewable Energy Generation (Annualized MWh)					Net Greenhouse Gas Emission Savings[a] (Annualized Tons CO_2e[b])				
	Total Incentives[c]	Total Associated Costs[d]	Installed Savings[e]	Pipeline Savings[f]	Total Committed Savings[g]	$/MMBtu Savings[h]	$/MMBtu EXPECTED LIFETIME Savings[i]	Installed Savings[e]	Pipeline Savings[f]	Total Committed Savings[g]	$/MWh Savings[h]	$/MWh EXPECTED LIFETIME Savings[i]	Installed Savings[e]	Pipeline Savings[f]	Total Committed Savings[g]	$/Ton CO2e Savings[h]	$/CO2e EXPECTED LIFETIME Savings[i]
Residential, Commercial, Industrial & Municipal Sectors																	
Green Jobs - Green New York																	
One- to Four-Family Residential Buildings Program Audits[j]	$12.0	$0.7	363,830	217,579	581,409	22	1	4,847	2,899	7,745	1,637	91	26,074	15,587	41,660	304	13
One- to Four-Family Residential Buildings Program Financing[j]	$13.9	$3.5	197,308	20,401	217,709	80	3	2,982	308	3,291	5,270	277	14,341	1,482	15,823	1,096	48
Multifamily Residential Buildings Program Audits[j]	$3.0	$1.4	250,525	91,390	341,916	13	1	14,172	6,568	20,740	214	16	21,976	11,450	33,426	133	10
Residential Efficiency Services																	
Multifamily Performance Program	$9.0	$1.4	184,857	175,780	360,636	29	2	4,586	4,732	9,318	1,118	86	16,672	16,007	32,678	319	21
Multifamily Carbon Emissions Reduction Program[k]	$6.8	$0.2	-	-	-	-	-	-	-	-	-	-	17,889	11,554	29,443	236	18
EmPower New York	$5.8	$0.5	33,293	17,850	51,143	123	5	-	-	-	-	-	2,586	1,395	3,981	1,575	66
Home Performance with ENERGY STAR®	$6.8	$0.6	94,690	16,140	110,830	67	3	538	69	608	12,267	682	8,190	1,316	9,505	785	33
Green Residential Building Program	$2.9	$0.3	26,541	16,551	43,092	73	3	970	1,837	2,807	1,120	62	1,975	1,753	3,728	843	38
Solar Thermal Incentive Program	$0.9	$0.1	2,640	471	3,111	307	15	-	-	-	-	-	191	37	228	4,192	208
Low-Rise Residential New Construction Program	$0.4	$0.0	351	14,128	14,479	24	1	12	500	513	688	39	29	1,174	1,203	293	13
Power Supply & Delivery																	
NYSERDA Photovoltaic Initative	$5.2	$0.1	-	-	-	-	-	2,008	34	2,042	2,608	104	829	14	843	6,314	253
LIPA Photovoltaic and Efficiency Initiative	$40.2	$0.0	-	-	-	-	-	14,702	16,464	31,166	1,290	52	6,072	6,800	12,872	3,123	125
Multi-Sector																	
Regional Economic Development & GHG Reduction	$11.3	$0.8	-	5,812	5,812	2,079	116	-	3,687	3,687	3,277	182	-	1,912	1,912	6,319	351
Cross-Program Overlap[l]	N/A	N/A	-265,007	-114,438	-379,445	N/A	N/A	-3,723	-1,703	-5,425	N/A	N/A	-19,908	-9,009	-28,917	N/A	N/A
TOTAL Annualized Cumulative Benefits	**$118.2**	**$9.4**	**889,027**	**461,665**	**1,350,692**	**94**	**N/A**	**41,095**	**35,396**	**76,491**	**1,668**	**N/A**	**96,916**	**61,470**	**158,386**	**806**	N/A
TOTAL Expected Lifetime Cumulative Benefits	**$118.2**	**$9.4**	**17,816,869**	**8,999,323**	**26,816,192**	**N/A**	**5**	**770,325**	**699,509**	**1,469,834**	**N/A**	**87**	**1,792,548**	**1,068,801**	**2,861,349**	**N/A**	**45**

Table notes are on the next page

Table 2 Continued

[a] These emission reductions are associated with both electric and fossil-fuel saving measures. Under a cap-and-trade system, the total number of emission allowances is determined by regulation. Regulated entities can purchase allowances and collectively emit up to the cap that is currently in place. Therefore, in the near term, electric efficiency projects may not decrease the overall amount of emissions going into the atmosphere. However, electric efficiency projects will reduce end-users' responsibility or footprint associated with emissions from electricity production.

[b] CO_2e stands for carbon dioxide equivalent and describes the amount of CO_2 that would have the same global warming potential as a given mixture of gases based on factors published by the Intergovernmental Panel on Climate Change.

[c] Inclusive of incentive dollars for expenditures, encumbrances and contract pre-encumbrances.

[d] Inclusive of all non-incentive expenditures.

[e] Inclusive of savings from all currently operational projects installed since program inception.

[f] Inclusive of savings from all projects under a signed contract and projects with an application received that are not yet operational.

[g] The sum of Installed Savings and Pipeline Savings.

[h] The sum of Total Incentives and Total Associated Costs divided by Total Committed Savings.

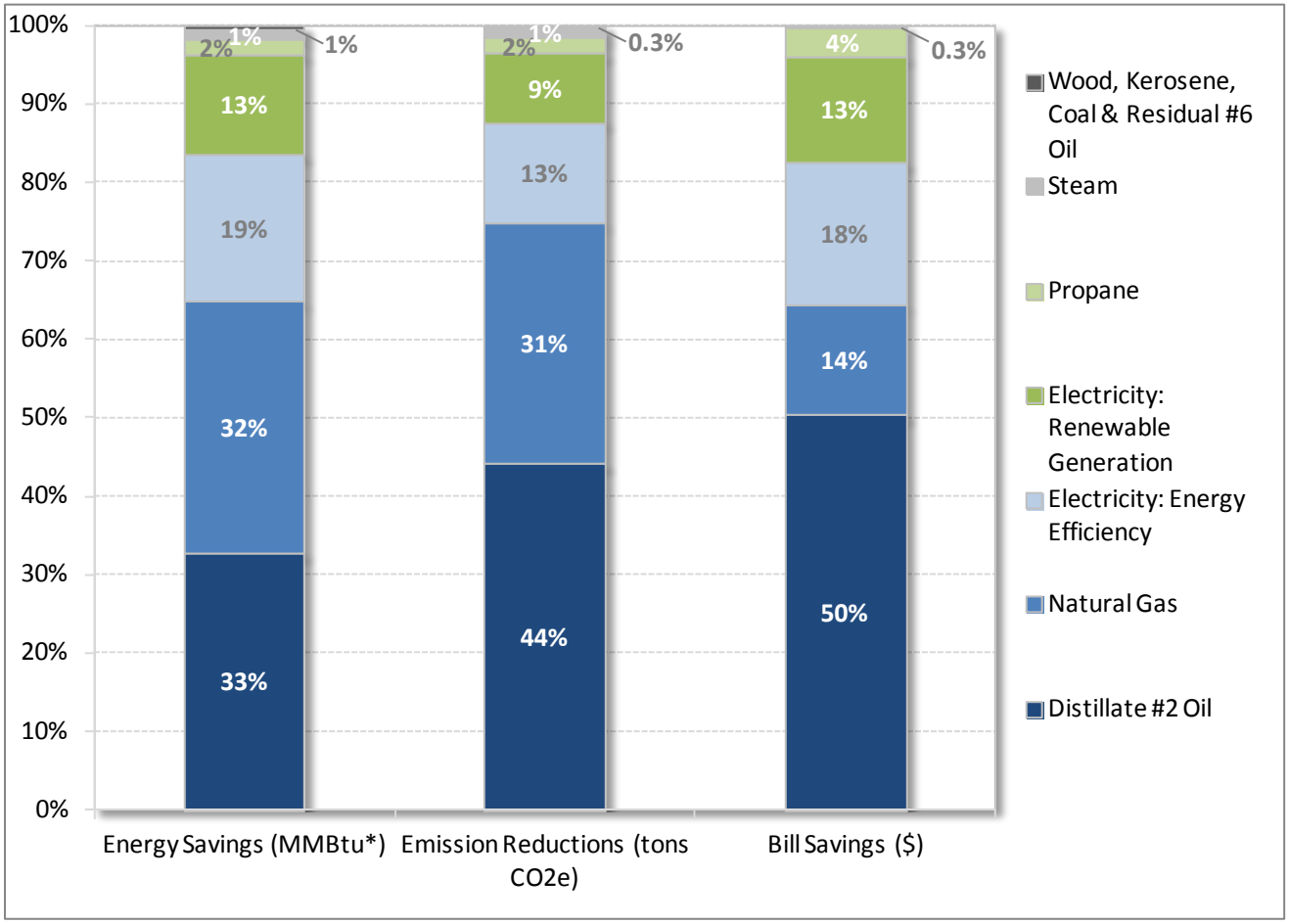
[i] The sum of Total Incentives and Total Associated Costs divided by the Expected Lifetime Total Committed Savings.

[j] The benefits for this program include some projects that have also been supported by other non-RGGI NYSERDA funding sources.

[k] The Multifamily Carbon Emissions Reduction Program is a fuel-switching program and does not claim any energy or bill savings.

[l] Cross-program overlap accounts for projects that received any combination of a GJGNY audit, a GJGNY loan, or a RGGI-funded incentive through the Home Performance with ENERGY STAR® Program.

Figure 1. Percent Contribution by Fuel Type for Energy Savings, Emission Reductions and Bill Savings through September 30, 2013



* To convert to source MMBtu, the kWh savings and generation for the electric measures were adjusted to account for savings at the source of generation. This approach enables an order of magnitude comparison between electric and fuel energy savings/generation. The source factor used is 9,949.2 Btu/kWh, which is based on a 3-year average (2006, 2007, and 2008), and includes a line loss factor of 7.2%. The number is based on natural gas only because natural gas represents the fuel on the margin.

3 Funds

3.1 Proceeds

As of September 30, 2013, New York State sold more than 227.8 million CO_2 allowances and received nearly $539.6 million in auction proceeds. In addition, nearly $3.0 million in interest earnings were allocated on the RGGI portfolio and nearly $0.8 million in interest earnings were allocated on the Green Jobs – Green New York (GJGNY) program. These funds are reinvested for program implementation and are allocated to various RGGI programs. Detailed auction proceeds and total funds for NYS RGGI are presented in Appendix D and Appendix E, respectively. Total NYS RGGI funds are listed in Table 3, and detailed auction proceeds for NYS RGGI are visually displayed in Figure 2.

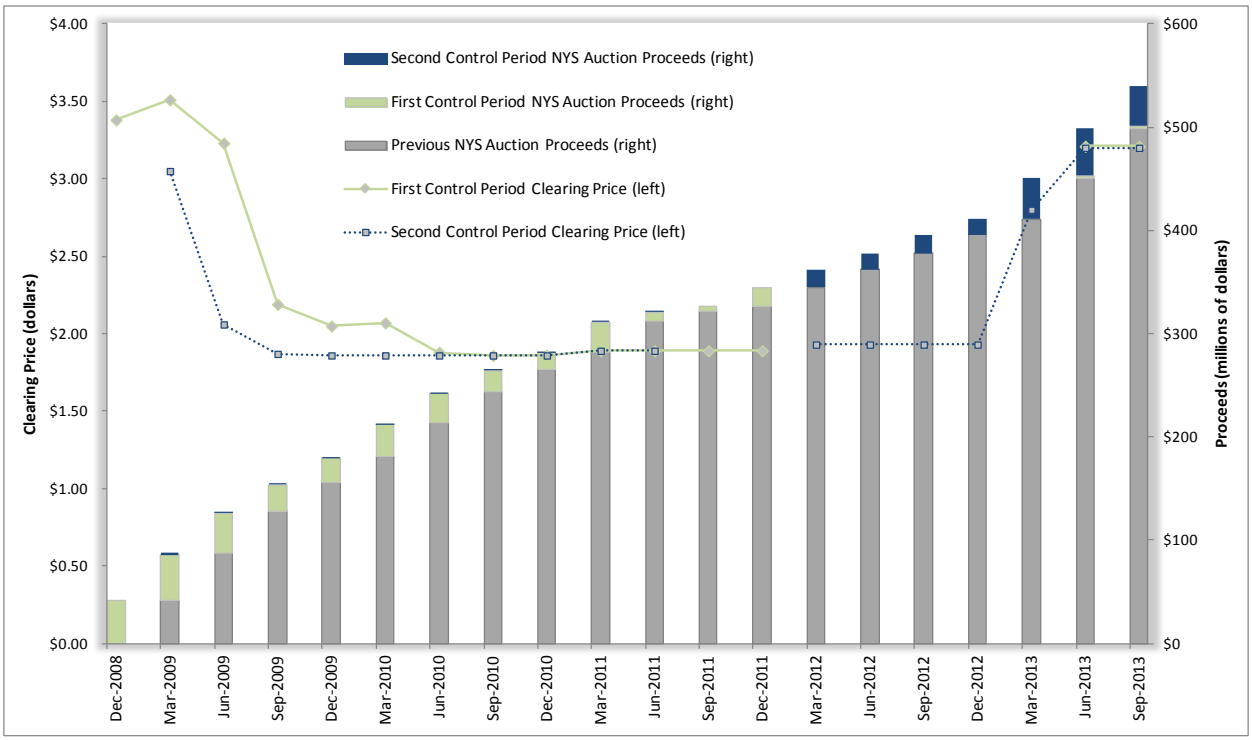
Table 3. New York State's RGGI Auction Results and Funds through September 30, 2013[a]

Source: RGGI, Inc. and NYSERDA

Fund Category	NYS Allowances Sold	Cumulative Funds
First Control Period Total	144,305,904	$336,282,535
Second Control Period Total	83,546,917	$203,348,977
RGGI Auction Proceeds	**227,852,821**	**$539,631,512**
Interest Allocated to the RGGI Portfolio		$3,026,525
Interest Allocated to the GJGNY Program		$770,000
TOTAL Funds		**$543,428,037**

[a] The first control period for fossil-fuel fired electric generators took effect on January 1, 2009 and concluded on December 31, 2011. The second control period took effect on January 1, 2012 and extends through December 31, 2014.

Figure 2. New York State's RGGI Auction Result through September 30, 2013



3.2 Budget

Table 4 through Table 6 present financial data for the approved RGGI programs through September 30, 2013. Table 4 presents the current expended, encumbered, and committed funds for each program and reflects how the nearly $543.5 million of current funds are allocated across the four major program areas:

- Residential/Commercial/Industrial/Municipal.
- Transportation.
- Power Supply and Delivery.
- Multi-Sector.

Table 5 and Table 6 present the financial data for the approved GJGNY and NY Green Bank programs through September 30, 2013.

Table 4. Available Funding and Financial Status through September 30, 2013 (millions of dollars)

Source: NYSERDA

	Budgeted Funds [a]	Expended Funds [b]	Open Encumbrances [c]	Pre-Encumbrances [d]	Committed Funds [e]	Uncommitted Funds [f]
Residential/Commercial/Industrial/Municipal						
Residential Efficiency Services	41.7	23.3	8.8	4.4	36.5	5.2
Municipal Water and Wastewater	1.9	1.2	0.4	-	1.7	0.3
Advanced Buildings	3.1	0.9	0.2	-	1.1	2.0
Industrial Innovations	10.2	1.3	2.1	3.7	7.2	3.0
Total Residential/Commercial/Industrial/Municipal	**56.9**	**26.7**	**11.6**	**8.2**	**46.4**	**10.5**
Transportation						
Transportation Research	2.0	1.2	0.8	-	2.0	0.0
Total Transportation	**2.0**	**1.2**	**0.8**	**-**	**2.0**	**0.0**
Power Supply and Delivery						
NYSERDA Photovoltaic Initiative	5.3	5.3	0.0	-	5.3	0.0
LIPA Photovoltaic and Efficiency Initiative	40.2	20.6	-	19.6	40.2	
Power Systems	3.9	3.6	0.2	-	3.8	0.1
Competitive Greenhouse Gas Reduction Pilot	14.5	-	-	-	-	14.5
Total Electric Power Supply and Delivery	**63.9**	**29.5**	**0.3**	**19.6**	**49.3**	**14.6**
Multi-Sector						
Climate Research and Analysis	8.0	2.6	2.9	0.6	6.1	2.0
Clean Energy Business Development	21.2	6.2	3.2	1.5	11.0	10.3
Regional Economic Development and Greenhouse Gas Reductions	10.4	0.8	6.5	4.1	11.3	(0.9)
Cleaner, Greener Communities	72.4	12.0	4.8	35.0	51.9	20.5
Total Multi-Sector	**112.0**	**21.6**	**17.4**	**41.2**	**80.2**	**31.8**
Other Costs [g]						
Deficit Reduction Plan (DRP) Transfer [h]	90.0	90.0	-	-	90.0	-
Con Edison Smart Grid Program [i]	14.4	15.5	-	-	15.5	(1.0)
Program Administration [j]	22.5	9.6	-	-	9.6	12.9
Metrics and Evaluation	13.7	0.5	1.8	1.0	3.3	10.4
RGGI Inc. Costs [k]	5.5	4.5	0.6	-	5.0	0.4
New York State Cost Recovery Fee	5.0	2.6	-	-	2.6	2.4
OTHER COSTS TOTAL	**151.1**	**122.5**	**2.4**	**1.0**	**125.9**	**25.2**
SUBTOTAL	**386.0**	**201.4**	**32.4**	**70.0**	**303.9**	**82.1**
Green Jobs - Green New York						
Green Jobs - Green New York	112.8	52.3	10.2	19.7	82.3	30.5
New York Green Bank						
New York Green Bank	44.7	0.0	-	-	0.0	44.7
TOTAL [l]	**543.4**	**253.8**	**42.6**	**89.8**	**386.2**	**157.2**

Table notes are on the next page

Table 4 Continued

[a] Includes auction proceeds and allocated interest on the RGGI and GJGNY portfolios. The allocation is consistent with the three-year budget presented in the Operating Plan.

[b] Invoices processed for payment by NYSERDA.

[c] Remaining funding obligated under a contract, purchase order, or incentive award.

[d] Planned funding for contracts awarded and under negotiation; and planned funding under active development through open solicitations with upcoming proposal due dates.

[e] The sum of Expended, Encumbered, and Pre-Encumbered funds.

[f] The values for Program Administration, Metrics and Evaluation, and the New York State Cost Recovery Fee represent aggregate funds and commitments for RGGI-funded activities, NOT including GJGNY. For information on GJGNY finances, please refer to Table 4.1.

[g] On December 4, 2009, New York State enacted numerous deficit reduction measures that included the transfer of $90 million in RGGI auction proceeds to the General Fund.

[h] On December 22, 2009, NYSERDA's Board approved a proposed consent decree that resolves the legal challenge to the State's RGGI program. In October 2010, State Supreme Court Judge Thomas J. McNamara signed a Stipulation and Order of Discontinuance signed by all the parties, thereby formally ending the litigation. As of June 30, 2013, the parties to the consent decree estimate that the total commensurate benefit for the years 2009-2014 is $13.2 million and agreed to dedicate such funds for the development of smart grid technologies in the Con Edison territory. NYSERDA is also responsible for certain additional costs that may be incurred through 2017. NYSERDA's annual audited financial statements show an amount expended of $15.5 million to reflect these additional estimated costs that were required to be recorded.

[i] Includes NYSERDA's upfront administrative expenses related to the development and implementation of the CO_2 Budget Trading Program, the CO_2 Allowance Auction program, and the Operating Plan.

[j] The first-year budget includes RGGI Inc. start-up costs and New York State's share of ongoing RGGI Inc. expenses. RGGI Inc. is a non-profit corporation created to support development and implementation of the CO_2 Budget Trading Program.

[k] Totals may not sum exactly due to rounding.

Table 5. Green Jobs – Green New York Available Funding and Financial Status through September 30, 2013 (millions of dollars)

	Budgeted Funds [a]	Expended Funds[b]	Open Encumbrances[c]	Pre-Encumbrances[d]	Committed Funds[e]	Uncommitted Funds[f]
Workforce Development, Outreach and Marketing						
Workforce Development	8.0	3.7	2.7	0.1	6.5	1.5
Outreach and Marketing	15.5	7.8	2.4	6.2	16.4	-0.9
Total Workforce Development, Outreach and Marketing	**23.5**	**11.5**	**5.1**	**6.3**	**22.9**	**0.6**
Residential						
Energy Audit Incentive	14.6	10.4	-	1.5	12.0	2.6
Implementation Costs	1.0	0.7	0.2	-	0.9	0.1
Financing: Loans	26.7	38.4	(0.0)	4.1	42.5	
Financing: Loan Repayments	-	(4.3)	-	-	(4.3)	
Financing: Implementation Costs	-	2.4	0.2	0.7	3.3	
Financing: Bond Proceeds	-	(24.3)	-	-	(24.3)	
Financing: Bond Issue Costs	-	1.0	-	-	1.0	
Total Financing	**26.7**	**13.3**	**0.2**	**4.8**	**18.2**	**8.5**
Total Residential	**42.2**	**24.4**	**0.4**	**6.3**	**31.1**	**11.2**
Multifamily						
Energy Audits	3.8	1.6	1.3	0.2	3.0	0.8
Implementation Costs	1.6	1.4	0.0	-	1.4	0.2
Financing: Loans	7.8	2.0	0.4	-	2.5	
Financing: Loan Repayments	-	(0.2)	-	-	(0.2)	
Financing: Implementation Costs	0.3	0.1	0.2	-	0.3	
Total Financing	**8.1**	**2.0**	**0.6**	**-**	**2.5**	**5.5**
Total Multifamily	**13.5**	**5.0**	**1.9**	**0.2**	**7.0**	**6.5**
Small Commercial						
Energy Audits	5.6	2.8	1.1	4.8	8.7	-3.1
Implementation Costs	4.8	0.3	0.1	2.2	2.6	2.2
Financing: Loans	7.5	0.1	-	-	0.1	
Financing: Loan Repayments	-	(0.02)	-	-	(0.02)	
Financing: Implementation Costs	0.3	0.2	0.2	-	0.4	
Total Financing	**7.8**	**0.3**	**0.2**	**-**	**0.5**	**7.2**
Total Small Commercial[g]	**18.2**	**3.4**	**1.5**	**7.0**	**11.9**	**6.3**
SUBTOTAL	**97.4**	**44.3**	**8.8**	**19.7**	**72.9**	**48.5**
Other Costs						
Program Administration	7.8	5.5	-	-	5.5	2.4
Program Evaluation	5.6	1.5	1.4	-	2.9	2.7
New York State Cost Recovery Fee	1.9	1.1	-	-	1.1	0.8
OTHER COSTS TOTAL	**15.3**	**8.0**	**1.4**	**-**	**9.4**	**5.9**
TOTAL[h]	**112.8**	**52.3**	**10.2**	**19.7**	**82.3**	**54.5**

[a] Includes auction proceeds and allocated interest on the Green Jobs-Green New York (GJGNY) funds. The allocation is consistent with the three-year budget presented in the Operating Plan.

[b] Invoices processed for payment by NYSERDA.

[c] Remaining funding obligated under a contract, purchase order or incentive award.

[d] Planned funding for contracts awarded and under negotiation; and planned funding under active development through open solicitations with upcoming proposal due dates.

[e] The sum of Expended, Encumbered and Pre-Encumbered funds.

[f] Actual Pre-Encumbrances towards the Solicitation for the contracting of implementation, quality assurance, and energy assessments contractors total $7.0 million. The total Pre-Encumbrances for the Small Commercial program presented in this table reflects additional funding from sources that include new funds, transfers, and funds disencumbered from current energy assessment contracts.

[g] Totals may not sum exactly due to rounding.

Table 6. Green Bank Available Funding and Financial Status through September 30, 2013 (millions of dollars)

	Budgeted Funds [a]	Expended Funds[b]	Open Encumbrances[c]	Pre-Encumbrances[d]	Committed Funds[e]	Uncommitted Funds[f]
Program Costs						
NY Green Bank	41.1	-	-	-	-	41.1
SUBTOTAL	**41.1**	**-**	**-**	**-**	**-**	**41.1**
Other Costs						
Program Administration	3.6	0.04	-	-	0.04	3.5
Program Evaluation	-	-	-	-	-	-
New York State Cost Recovery Fee	0.07	0.001	-	-	0.001	0.1
OTHER COSTS TOTAL	**3.6**	**0.05**	**-**	**-**	**0.05**	**3.6**
TOTAL[g]	**44.7**	**0.05**	**-**	**-**	**0.0**	**44.7**

[a] Includes auction proceeds and allocated interest on the Green Jobs-Green New York (GJGNY) funds. The allocation is consistent with the three-year budget presented in the Operating Plan.

[b] Invoices processed for payment by NYSERDA.

[c] Remaining funding obligated under a contract, purchase order, or incentive award.

[d] Planned funding for contracts awarded and under negotiation; and planned funding under active development through open solicitations with upcoming proposal due dates.

[e] The sum of Expended, Encumbered, and Pre-Encumbered funds.

[f] Totals may not sum exactly due to rounding.

4 Program Descriptions and Accomplishments

4.1 Residential, Commercial, Industrial, and Municipal Sectors

4.1.1 Green Jobs – Green New York (GJGNY)

Green Jobs – Green New York provides funding for energy assessments, low-cost financing for energy upgrades, and technical and financial support to develop a clean energy workforce. GJGNY is a statewide effort to strengthen communities through energy efficiency and uses constituency-based organizations to support program outreach in underserved communities. GJGNY enables New Yorkers to make a significant difference in homes, businesses and neighborhoods—making them more comfortable, more sustainable, and more economically sound. GJGNY is administered by NYSERDA and made available by the Green Jobs – Green New York Act of 2009. The GJGNY 2013 Annual Report was issued on October 1, 2013.[2] The report presents financial data for the approved GJGNY programs through June 30, 2013.

4.1.1.1 Audits

One- to Four-Family Residential Buildings Program Audits

Home Performance with ENERGY STAR (HPwES) is a comprehensive energy efficiency services program for existing one- to four-family homes and low-rise[3] residential buildings. Participating HPwES contractors accredited by the Building Performance Institute (BPI) conduct comprehensive home energy assessments and upgrades. Free and reduced-cost home energy assessments have been made available to homeowners in New York State through GJGNY funding, which is driving increased participation in this program and cutting additional GHG emissions.

Key accomplishments during this quarter:

- 3,418 audits were completed this quarter bringing the total to 41,452 residential GJGNY audits completed; 38,433 (93 percent) were provided at no cost to the customer.
- 3,420 of the 11,245 completed residential units served through HPwES resulting from a GJGNY audit and/or GJGNY financing, (30 percent) units are associated with income-qualified Assisted HPwES customers.
- Constituency-based organizations (CBOs) assisted with the completion of 630 units, or 5 percent of all completed GJGNY projects.

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2 NYSERDA. 2013. "Green Jobs-Green New York 2013 Annual Report." http://www.nyserda.ny.gov/Publications/Program-Planning-Status-and-Evaluation-Reports/-/media/Files/EDPPP/Planning/GJGNY/Annual-Report-GJGNY/2013-gjgny-annual-report.pdf

3 HPwES low-rise buildings encompass buildings with three stories or less, with eight units or less, constructed using building techniques common to one- to four-family homes. They must be served by residential scale heating equipment with a maximum rating of 300,000 Btu. Taller residential buildings that fit the above criteria are also eligible. Examples include brownstones, row housing, and other urban-style buildings.

- HPwES launched a new program management tool called the NY Home Performance Portal. This web-based interface will improve the process of reviewing and approving program applications and work scopes in addition to providing information to all parties (customer, contractor, NYSERDA staff, and NYSERDA implementation and financing contractors) regarding the status of any application or project.
- The One- to Four-Family Residential Buildings Audits program has expended 72 percent of its total audit incentive budget of $14.6 million through September 30, 2013.

Multifamily Residential Buildings Program Audits

Through GJGNY, the Multifamily Residential Buildings Program provides financing and co-funding for comprehensive energy audits and the development of an Energy Reduction Plan (ERP), serving market-rate and low- to moderate-income projects to increase adoption of clean energy in New York State. The needs of the multifamily sector are addressed by working with developers, building owners, and their representatives to improve the energy efficiency, health, safety, and security of multifamily residential buildings, targeting potential participants who are committed to the implementation of energy-related improvements. NYSERDA offers incentives to install eligible measures outlined within the ERP. Each incentive is subject to funding availability from the Energy Efficiency Portfolio Standard (EEPS) or RGGI. Per-unit incentives are available for projects predicted to achieve the 15 percent energy reduction threshold. Additional Performance Payments apply to eligible projects that predict and achieve savings of more than 15 percent.

Key accomplishments during this quarter:

- Eleven audit applications were received this quarter, bringing the total number of audit applications received to 250; of these, 56% are associate with affordable housing.
- The total number of audits completed through September 30, 2013 is 202; of these, 51% are associated with affordable housing.
- A total of 61 projects are contracted to have measures installed; of these, 50% are associate with affordable housing.

Small Commercial Energy Efficiency Program Audits

The GJGNY Small Commercial Energy Efficiency Program offers energy assessments and technical assistance to help small businesses and not-for-profit organizations improve their energy efficiency and reduce their energy costs in support of the goal to increase adoption of clean energy projects in New York State. The program offers free energy audits, along with technical assistance, to help identify economically viable improvements that may yield substantial annual energy savings. GJGNY energy assessments are offered to small businesses and nonprofits with an average electric demand of 100 kW or less and 10 employees or fewer. Audits and technical assistance are provided by regional firms competitively selected by NYSERDA.

Key accomplishments during this quarter:

- 135 new energy assessments were completed during this quarter, keeping the total number of completed assessment at 1,797.
- Based on Expeditor Pilot findings, NYSERDA conservatively estimates that 20 percent of energy efficiency improvements recommended on energy assessments are implemented by small business and not-for-profit customers, resulting in an estimated cumulative total of 359 project completions through September 2013.

4.1.1.2 Financing

One- to Four-Family Residential Buildings Program Financing

GJGNY financing is available to participants in Home Performance with ENERGY STAR® (HPwES) to finance the installation of recommended energy efficiency improvements that may be repaid through energy savings. The Smart Energy Loan and the innovative On-Bill Recovery (OBR) Financing Program are the two low-interest rate financing options available through GJGNY, which enable more projects resulting in greater reductions of GHG emissions than might otherwise have been achieved.

Key accomplishments during this quarter:

- 411 loans were issued this quarter, bringing the total to 4,011 loans issued with a total loan value of $38.4 million.
- 27 percent of the loans issued are associated with Assisted HPwES customers, representing 20 percent of the total loan funds.
- The innovative On-Bill Recovery Loan program reached a major milestone in closing its 1,000th loan in August. Through September 30, 2013, a total of 1,096 OBR Loans have closed, valued at approximately $11.5 million.
- In August, NYSERDA raised $24.3 million in its first-ever issuance of revenue bonds to finance loans for consumers across the State for residential energy efficiency improvements. The proceeds of the bonds were used to replenish the residential portion of the $42.5 million GJGNY revolving loan fund established under the Green Jobs-Green New York Act of 2009. The bond issuance allowed NYSERDA to continue offering low-interest rate GJGNY loans to residential consumers.
- On August 28, NYSERDA received approval from the U.S. Department of Energy (DOE) to extend the BetterBuildings Neighborhood Program grant from September 30, 2013 until November 1, 2014. The extension period will allow NYSERDA and select sub-grantees to continue making progress toward the BetterBuildings goals and objectives. NYSERDA's $40 million grant through the BetterBuildings program is the largest in the nation.

Multifamily Residential Buildings Program Financing

Launched in 2011, GJGNY Multifamily Residential Buildings Financing Program 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 support of the goal to increase adoption of clean energy in New York State. These programs make it easier to assess, fund, implement, and measure energy efficiency upgrades that improve building performance and reduce costs. The program makes participation loans available in which a participating lender

issues a loan to a multifamily building owner for a qualifying energy efficiency project, with NYSERDA participating in the funding of 50 percent of the loan (up to a maximum of $5,000 per unit or $500,000 per building) at zero percent interest, and the lender setting the interest rate on its share of the loan.

Key accomplishments during this quarter:

- One loan was closed this quarter, bringing the total to nine closed loans with a total value of $7.6 million. NYSERDA's share of the total loan value is $2.0 million.
- Multifamily building owners who are in the Energy Reduction stage of identifying cost-effective energy saving measures for their buildings have expressed interest in NYSERDA's financing options.

Small Commercial Energy Efficiency Program Financing

The GJGNY Small Commercial Energy Efficiency Program offers low-interest financing to help small businesses and not-for-profit organizations improve their energy efficiency and reduce their energy costs in support of the goal to increase adoption of clean energy in New York State. In June 2011, NYSERDA launched the Participation Loan product to small business and not-for-profit customers, in which NYSERDA provides 50 percent of the loan principal, up to $50,000, at zero percent interest and the participating lender provides the remaining loan principal at the market interest rate. In June 2012, NYSERDA launched the OBR financing program for small business and not-for-profit customers, making available a NYSERDA loan of up to $50,000 at 2.5 percent interest to finance recommended energy efficiency improvements. Customers can then repay their loan through a charge on their utility bill. Six lenders have agreed to offer both participation loans and OBR loans.

Key accomplishments during this quarter:

- Three customer applications were approved this quarter, bringing the total to 20 approved customer applications for participation loans.
- Three loans were approved this quarter for the OBR program financing, bringing the total to 13 approved OBR loans.
- Four participation loans were issued this quarter, bringing the total to eight loans issued with a total value of $342,668. NYSERDA's share of the total value is $164,054.

4.1.1.3 Workforce Development, Outreach, and Marketing

Workforce Development

The GJGNY Workforce Training and Development (WFD) initiative complements other NYSERDA and New York State Department of Labor (NYSDOL) programs targeted at preparing individuals for energy efficiency, solar thermal, and photovoltaic careers in New York State, to build New York's capacity for long-term carbon reduction and facilitate energy education programs that will help build the State's clean energy future. NYSERDA supports a broad range of education and training programs aimed at creating an experienced clean energy workforce that will have the relevant skills and credentials needed to support New York State's growing clean energy economy and meet the demand for energy efficiency and renewable energy measures and technologies. Specifically, WFD efforts

under GJGNY seek 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 while reaching out to low-income neighborhoods to expand training opportunities to these communities.

Key accomplishments during this quarter:

- NYSERDA has executed on-the-job training agreements with 49 businesses seeking to hire new employees or advance incumbent workers under GJGNY. As of September 30, 2013, 144 people have been hired from NYSDOL's One-Stop lists, and 12 incumbent workers have been advanced due to training. Approximately $1.2M in wage and training subsidies has been awarded. The average wage of workers hired under the program is $16.20 per hour.
- More than 1,250 individuals have completed GJGNY-funded training in courses including Infrared Thermography, Solar Thermal Installation, Basic Air Sealing and Insulation, Green Operations and Building Maintenance, Multifamily Building Analyst, and Green Professional (GPRO).
- Community Power Network (CPN) has trained nearly 600 oilheat technicians at locations across the state. Course offerings include NORA Silver Certification Review, NORA Gold Certification Review, NORA Tank Installation, and Combustion Air and Venting. The courses are designed to improve the technical skills of service technicians, while integrating "whole house" concepts to provide increased home heating safety and efficiency. Spring training sessions are scheduled for the Capital Region, Hudson Valley, Central New York, Western New York, Long Island, New York City and the North Country.

Outreach and Marketing

GJGNY provides for community-based outreach, enabling one-to-one assistance with the process of participating in the program in order to deliver services in underserved communities. The GJGNY program provides outreach services in targeted communities through constituency-based organizations (CBOs), which locate residents, businesses, not-for-profits, multifamily building owners, and potential workforce candidates to participate in the program. This community-based approach, combined with statewide marketing, is expected to increase the reach of the program, particularly among disadvantaged populations and those not traditionally participating in energy-efficiency programs, thus empowering these communities in their transition toward sustainability, while producing lower carbon emissions.

Key accomplishments during this quarter:

- The Outreach team worked with NYSERDA's Workforce Development team to further refine the definition of "green or clean energy" jobs for the purpose of giving clearer direction to the CBOs regarding workforce metrics.
- NYSERDA released the Green Jobs-Green New York Outreach Program Round 2 Request for Proposals in early July 2013. The RFP seeks proposals from eligible CBOs, and coalitions of CBOs, to assist in outreach services in 14 regions throughout New York State.

- In July 2013, a meeting was held with NYSERDA's Small Commercial team to discuss marketing needs through the end of 2013. As a result, NYSERDA's marketing contractor will produce a brochure promoting NYSERDA's financing options, focusing on beneficial features to lenders.
- The NYSERDA CBO locator pages continue to generate leads for CBOs. As a result of the Residential Financing Print Ads, visitors browsing the NYSERDA site are spending on average about 7.5 minutes per visit. The web view bounce rate is zero, indicating that customers are staying on the site to read the information.

4.2 Residential Efficiency Services

NYSERDA currently offers a suite of programs that provide comprehensive energy services for single and multifamily existing buildings and new construction, including low-income households. In addition to energy savings, these programs provide significant health and safety benefits through comprehensive testing and verification, improved air quality, and improved comfort. Historically, these programs were funded through the System Benefits Charge (SBC), and more recently, through the Energy Efficiency Portfolio Standard (EEPS), and offer incentives to implement electric and gas efficiency measures. The Residential Efficiency Services programs allow NYSERDA to use RGGI funds for fossil-fuel based measures and renewable energy measures not eligible for SBC and EEPS incentives. Coordination of these funding sources expands the number of households served and ensures that opportunities for carbon reduction measures are not lost.

4.2.1.1 Multifamily Performance Program

The Multifamily Performance Program (MPP) serves residential buildings with five or more units. RGGI funds are used to supplement the program's current SBC and EEPS funding streams. Specifically, these funds are targeted at reducing oil, non-firm natural gas, steam, and propane energy use in multi-unit residential buildings. All buildings receive program support for energy audits to determine cost effective measures, expected energy savings, and installation costs. Projects also receive implementation incentives to support the installation of measures identified by program supported audits.

Key accomplishments during this quarter:

- Nine energy efficiency projects were completed during this quarter, bringing the total number of completed energy efficiency projects to 45.

4.2.1.2 Multifamily Carbon Emission Reduction Program.

The Multifamily Carbon Emissions Reduction Program (MCERP) is currently providing financial assistance and technical support to owners of multifamily buildings converting their heating systems from #6 fuel oil to cleaner fuel alternatives. Less carbon-intensive fuels include #2 fuel oil, biodiesel and biodiesel blends, natural gas, and renewable energy (geothermal and solar thermal). Converting #6 fuel oil-heated buildings to cleaner fuels will reduce carbon emissions, improve air quality, and produce positive public health benefits. MCERP was positioned

to encourage early adoption of New York City's phase-out of #6 oil and, as such, has contributed to an overall improvement in New York City's air quality. City-wide conversions have resulted in 69 percent and 23 percent reductions in airborne sulfur dioxide and soot concentrations, respectively. These benefits are concentrated in low-income areas of New York City, where poor air quality leads to higher rates of asthma and other respiratory illnesses, especially in children and the elderly.

Key accomplishments during this quarter:

- Emissions savings attributable to the MCERP more than doubled in the third quarter of 2013 due to a large number of installed projects
- MCERP paid out over $0.5 million in incentives to New York State building owners and service providers during this quarter, bringing the total paid incentive amount to $4.2 million.
- In total, 118 multifamily buildings have converted through MCERP from burning #6 oil to cleaner alternatives such as primarily natural gas or a blend of natural gas and #2 oil.

4.2.1.3 EmPower New York

NYSERDA's EmPower New York (EmPower) program offers no-cost energy efficiency services to low-income (i.e., HEAP-eligible) homeowners and renters. These services include electric reduction and home performance measures such as appliance replacement, energy efficient lighting, insulation and air-sealing. EmPower utilizes the RGGI funding to serve low-income applicants that heat with oil and propane and are ineligible for EEPS funding. These energy efficiency measures aid in the reduction of GHG emissions and provide long-term carbon reductions. On-site energy education offers customers additional strategies for managing their energy costs. Services are provided by participating contractors accredited through the Building Performance Institute. Currently there are 172 EmPower contractors assisting in RGGI-funded projects.

Key accomplishments during this quarter:

- 273 households across New York State were served during this quarter, bringing the total to 1,210 households served to date with EmPower RGGI funding.

4.2.1.4 Home Performance with ENERGY STAR® (HPwES)

Home Performance with Energy Star (HPwES) is a comprehensive energy efficiency services program for existing one- to four-family homes and low-rise residential buildings. The program uses a network of service providers accredited by the Building Performance Institute (BPI) to perform diagnostic testing on the home, recommend improvements, determine the payback period for those improvements, and install improvements selected by the homeowner. Currently, 235 contractors are participating in the HPwES Program. The HPwES Program uses RGGI funds for cost-effective oil and propane efficiency measures, such as replacing inefficient oil and propane heating equipment and other measures that have a direct impact on reducing GHG emissions from oil and propane consumption. Income-qualified homeowners are eligible for higher incentive rates to make energy improvements. HPwES applicants may also qualify for GJGNY audit and financing programs.

Key accomplishments during this quarter:

- 349 energy efficiency projects were completed during this quarter at a contracted value of $3.5 million, bringing the total to 2,981 energy efficiency projects completed at a contracted value of $29.7 million.
- 28 percent of RGGI-funded HPwES projects were eligible for Assisted Home Performance with
- ENERGY STAR®.
- 31 percent of all HPwES projects were RGGI-funded; an increase of 17 percent from 2012.

4.2.1.5 Green Residential Buildings Program (GRBP)

The Green Residential Building Program (GRBP) is a market transformation initiative designed to change the building practices of the residential construction industry for single-family homes and multifamily homes with up to 11 dwelling units. The GRBP offers incentives to building owners who build and obtain certification that their newly constructed residences meet or exceed Leadership in Energy and Environmental Design (LEED®) or National Green Building Standard guidelines, as well as other GRBP program-specific energy efficiency and health and safety requirements. Buildings meeting GRBP requirements will help to reduce energy use and greenhouse gas emissions, save water and other natural resources, use sustainable building materials, reduce waste, and improve indoor air quality. 69 contractors are participating in this program. The following data provided represents only those projects where the incentive was funded by RGGI.

Key accomplishments during this quarter:

- 37 RGGI-funded projects were completed during this quarter, bringing the total number of completed projects to 289.

4.2.1.6 Solar Thermal (ST) Incentive Program

NYSERDA's Solar Thermal Incentive Program incentivizes the installation of ST for the production of hot water that displaces electrically heated hot water systems. System incentives are capped at $4,000 per site/meter for residential systems and $25,000 per site/meter for nonresidential applicants. 88 contractors are participating in this program. Funding for the Solar Thermal Incentive Program has been allocated by the New York State Public Service Commission through the Renewable Portfolio Standard (RPS) program to displace electrically heated domestic hot water; RGGI funds have been used to displace heating fuels other than electricity. GJGNY financing is also available for these projects.

Key accomplishments during this quarter:

- 7 solar thermal hot water systems were installed during this quarter, bringing the total to 98 system installations across New York State.

4.2.1.7 Low-rise Residential New Construction Program

NYSERDA's Low-rise Residential New Construction Program[4] (LRNCP) includes the New York ENERGY STAR® Certified Homes Program and the New York Energy $mart initiative for certain low-rise multiunit buildings and gut rehabilitation projects (market-rate and affordable components). These programs are designed and intended to encourage the construction of new single-family homes and low-rise residential dwelling units that operate more energy efficiently and reduce long-term GHG emissions; are more durable; and provide a healthier environment for their occupants than would otherwise be achieved. Five contractors are participating in this program. RGGI funds have been used, starting in July 2013, to pay the MMBtu savings component of the LRNCP incentive for projects using propane or oil as the primary heating fuel.

Key accomplishments during this quarter:

- 6 new homes were constructed, bringing the cumulative total of new homes constructed to date to 44.
- $26,136 in private sector funds were leveraged, making the program total to date to $191,664.

4.2.2 Municipal Water and Wastewater Program

The purpose of the Municipal Water and Wastewater program is to reduce energy use through energy efficiency and process improvement measures. The program offers coordinated assistance designed to achieve cost-effective CO_2 reductions by providing technical support and implementation assistance to existing facilities and new construction projects.

4.2.2.1 Wastewater Energy Efficiency Program

The Wastewater Energy Efficiency Program (WWEP) provides a unique opportunity to coordinate RGGI climate change goals and funding with U.S. Environmental Protection Agency (EPA) goals as well as funding while installing infrastructure that will improve the environment and keep New York State waters clean and healthy. This program is co-managed by the New York State Environmental Facilities Corporation (EFC) and NYSERDA. EFC has secured Green Project Reserve Funds offered by the EPA that will bolster efforts to finance water and wastewater infrastructure via the Clean Water State Revolving Fund (SRF) Program. Plants financed with Green Project Reserve monies will be constructed energy efficiently, thus minimizing carbon emissions and improving their economic and environmental performance.

[4] Low-Rise Residential New Construction is defined as the ground-up new construction of dwelling unit(s) contained within residential buildings of not more than three (3) stories in height. Additionally, residential buildings which are more than three (3) stories in height and determined to be eligible to participate in the EPA's ENERGY STAR® Certified Homes program will be considered for eligibility on a case-by-case basis. Dwelling units which will be "gut-rehabbed" or fully rehabilitated will also be considered by NYSERDA for eligibility on a case-by-case basis.

Selected projects receive RGGI-funded technical analysis to identify costs and savings associated with energy efficiency, process improvement, and carbon abatement opportunities, as well as Green Project Reserve grants to cost share plant upgrades. WWEP was selected as one of five national recipients of the States Stepping Forward Program Award for excellence by the American Council for an Energy-Efficient Economy.

Key accomplishments during this quarter:

- No new technical energy analyses were conducted during this quarter, keeping the total at 54 municipal wastewater treatment plants technical energy analyses.
- Projected annual savings are 39,823 MWh and 54,355 MMBtu, pending installation of currently recommended measures.
- Five technical energy analyses are ongoing.

4.2.3 Industrial Innovations Program

The Industrial Innovations program is a longer-term initiative that will support development and demonstration of technologies with substantial greenhouse gas (GHG) reduction potential and technologies that are relevant to New York State manufacturing industries and building systems. Funded projects will focus mainly on innovations that reduce the use of fossil fuels, have high replication potential for New York State's manufacturing base, are likely to be cost effective, and are presently not supported under SBC programs. Projects will focus on technical innovations, including thermal-efficiency improvements for fossil-fuel based processes and alternative processes that eliminate the use of fossil fuels directly and indirectly for technologies that bring about thermal destruction of byproducts. Projects also may include changes in material input and development of advanced controls provided they directly bring about GHG reductions.

Key accomplishments during this quarter:

- Four manufacturing businesses (OLEDWorks LLC, C9 Corporation, Watt Fuel Cell Corporation, and Release Control LLC) were competitively selected to receive funding to support development and/or demonstration of new and improved low-carbon manufacturing processes (as an added benefit, three businesses are immediately applicable for manufacture of energy-efficient products, namely, OLED lights, solar photovoltaic materials, and fuel cells, and thus their manufacture and their use will both reduce GHG emissions).
- $1.2 million of RGGI funds is leveraging $2.9 million of proposers' funds (including $1 million of federal funds).
- Free From Fibers raised an additional $1.5 million in grants and equity to leverage NYSERDA funding.

4.3 Transportation Research

The goal of the Transportation Research Program is to commercialize technologies, products, systems, and services that provide superior GHG reduction. Activities include product development, performance validation, field testing, policy development, and business assistance to help emerging technologies achieve successful commercialization.

Key accomplishments during this quarter:

- Try It Distributing, a Lancaster-based food Distribution Company, unveiled 15 new long-haul natural gas trucks and installed new fueling equipment. These long-haul trucks represent first-of-a-kind technology in New York State, with significantly reduced GHG emissions and lower cost of operations. RGGI funds of $600,000 will be combined with $400,000 in federal American Recovery and Reinvestment Act (ARRA) funds. Try It Distributing will provide an additional $4.6 million investment.
- Saab Sensis Corporation has developed under a NYSERDA contract a software-based gate management tool to help coordinate on-ground aircraft for greater efficiency, fewer delays, as well as reduce plane taxiing and engine idling. Large airports such as JFK could see a 10 percent decrease in delays, representing millions of dollars saved in fuel and improved productivity. The software is currently undergoing integration with existing systems for deployment and may also be used at other large airports around the country.

4.4 Power Supply and Delivery

The objective of the two Power Supply and Delivery (PSD) programs is to help reduce greenhouse gas (GHG) emissions from the electric power sector in New York State. The initiative has both near-term and long-term components that will support a portfolio of diverse projects relating to electric power generation, transmission, and distribution systems. These projects will reduce GHG emissions throughout the sector and include the implementation of an integrated strategy enabling smart-grid functionality and maintenance of a diverse portfolio of efficient generation resources. The PSD programs are designed to simultaneously maintain system reliability, safety, and security.

4.4.1 Statewide Photovoltaic Program

4.4.1.1 NYSERDA Photovoltaic Program

The NYSERDA Photovoltaic (PV) Program focuses on reducing GHG emissions in the long term by helping to establish a sustainable market for solar energy throughout New York State that includes targeted financial incentives. The PV program supports end-use solar installations for commercial, industrial, and residential customers as well as electric utility applications to improve the performance of distribution circuits and reduce peak electric load in critical load pockets. These projects assist New York State communities to transition to clean-energy, healthy communities and empower economic development. These funds supplement, and do not supplant Renewable Portfolio Standard (RPS) funds, particularly in regions that do not pay into the RPS. There are 359 participation contractors.

Key accomplishments during this quarter:

- No new PV systems were installed during this quarter, keeping the total number of installed PV systems at 128.

4.4.1.2 LIPA Photovoltaic and Efficiency Initiative

LIPA offers its customers rebates for grid-connected photovoltaic (PV) systems as part of the Solar Pioneer and Solar Entrepreneur programs. Residential PV systems up to 25 kW and non-residential PV systems up to 2 MW are eligible for an incentive based on expected system performance and depending on the customer sector. The program has historically only been available for customer-owned systems, rendering third-party owned systems ineligible for incentives. However, the program rules have recently been changed to allow residential systems installed under third-party ownership arrangements (i.e., power purchase agreements or leases) to qualify for incentives.

Rebate amounts are limited to the amount dictated by a system sized to produce no more than 105% of on-site electricity consumption during the prior 12 months. LIPA's rebates are designed to reflect the current PV costs. The rebate may not exceed the lesser of 50% of installed system costs for residential and business-owned systems, 65% for municipal and non-profit systems, or the incentive value as determined by the rebate schedule. The installed costs are defined as the PV system cost to the customer minus any government grants or subsidies.

Key accomplishments during this quarter:

- Through September 30, 2013, 1,588 PV systems have been installed.

4.4.2 Power Systems

The Power Systems Program is designed to reduce GHG emissions in the long term. The program has two RGGI-funded focus areas: (1) advanced renewable energy, and (2) carbon capture, recycling, and sequestration.

4.4.2.1 Advanced Renewable Energy Program

The Advanced Renewable Energy component of the Power Systems Program supports projects that foster the market introduction of a broad range of promising renewable energy technologies in New York State, including advanced biomass, tidal, and offshore wind technologies.

Key accomplishments during this quarter:

- To dramatically increase efficiency of thin film solar PV panels, Magnolia Solar Inc. has used RGGI funds to develop advanced optical coatings that can scatter light laterally into the cell while also maintaining both high optical transparency and high electrical conductivity. This advance will minimize reflection losses and maximize photon absorption.

- The Photovoltaic Manufacturing Consortium (PVMC) is a $5 million effort with more than 40 industrial collaborators as members or affiliates. Its goal is to accelerate the development, commercialization, manufacturing, field testing and deployment of next-generation solar photovoltaic (PV) and lightweight photovoltaic systems. During this quarter, PVMC continued to make significant progress in business development, operations, and technical areas. Companies have been recruited to participate in the consortium, where there has been a targeted focus on reducing downstream balance-of-system (BOS) costs in conjunction with PV installers.
    - The solar PV facility in Halfmoon, NY is operational.
    - Consortium members have access to the facility, and are able to process small manufacturing runs to test batch processing methods and devices. The focus of this quarter was on developing cells with steel substrates. This will be important for rapid roll-to-roll manufacturing and flexible solar products.
    - Phase1 of the 10-MW production facility is complete, and has been commissioned by the College of Nanoscale Science and Engineering (CNSE) Environmental Health and Safety group. Manufacturing tools and machines have been ordered and installed for the production of various types of solar PV devices. This facility will experiment with new solar manufacturing technology, with hopes that new production methods will reduce the cost and increase the quality of solar cells.

4.4.2.2 Carbon Capture, Recycling, and Sequestration

This component aims to help build New York State's capacity for long-term carbon reduction by researching strategies to reduce CO_2 emissions. The program focuses on assessing and demonstrating carbon capture, reuse, compression, and transport technologies; characterizing and testing the State's geological sequestration potential; and supporting the development of carbon capture and sequestration demonstration projects in New York State. Currently, the program's largest supported project, TriCarb, combines NYSERDA funding with several million dollars of federal funds to investigate the potential for geological sequestration in the Newark Basin.

Key accomplishments during this quarter:

- A geological characterization well was drilled at the Lamont-Doherty Earth Observatory. Well cuttings and cores were collected to help determine the potential for geological CO_2 sequestration in the Newark Basin of New York State.

4.4.3 Competitive Greenhouse Gas Reduction Pilot

Under this program, funding will be provided for market-ready projects that reduce greenhouse gas (GHG) emissions at electric generating facilities in New York State. Projects will be selected based on a combination of requested funding per ton of GHG emission reduction, expected level of GHG emission reduction and the technical merit/replication of the project across the power plant fleet in New York State. It is anticipated that projects could include, but will not be limited to, supply-side energy efficiency and advanced controls that will reduce GHG emissions cost-effectively.

Key accomplishments during this quarter:

- Progress was made during this quarter to develop the first solicitation for the CGGR Pilot Program.

4.5 Multi-Sector Programs

4.5.1 Clean Energy Business Development

The Clean Energy Business Development program seeks to create, attract, and grow industries in New York State that can benefit from emerging business opportunities in clean-energy and environmental technologies while supporting the goal of carbon mitigation. Key elements of the program include providing financial support to leverage private investment in early-stage and expansion-stage clean-energy companies in New York State and accelerate the market introduction of innovative energy efficiency, renewable energy, or carbon abatement technologies; advancing the transition of clean-energy technologies or technologies that improve the energy efficiency of industrial processes from the development/demonstration stage to the launch of commercial-scale manufacturing or application; and developing and supporting a portfolio of programs designed to translate clean-energy technology research into commercially viable business enterprises.

Key accomplishments during this quarter:

- Through a combination of events and market intelligence, (Green Capital Empire), a project managed by CB Insights, introduces early-stage clean tech companies with investment opportunities, 16 of the 50 companies in the initial class of the program have gone on to raise $91 million across 21 deals through September 30, 2013.

4.5.2 Climate Research and Analysis Program

The Climate Research and Analysis Program supports research studies, demonstrations, policy research and analyses, and outreach and education efforts. Through these activities, the program addresses critical climate change related problems facing the State and the region, including the needs of environmental justice communities.

Key accomplishments this quarter:

- In the third quarter of 2013, NYSERDA has been preparing for the kickoff meeting for the web-based New York Climate Change Science Clearinghouse project. Project partners include NESCAUM, Cornell University, SUNY-ESF, and the NOAA. The Clearinghouse will help educate policy-makers, provide practitioners the specific information they need, help identify data gaps, and promote information-sharing across scientific/engineering disciplines. The website will leverage and improve upon the capabilities of existing climate related websites at State, regional and federal levels. A beta version of the web-based clearinghouse is planned for testing within a year.
- Progress continues on finalizing the updated Climate Research and Analysis Program research plan. The updated plan will guide new solicitations targeting climate mitigation and adaptation research, scheduled for the first and second quarters of 2014.

- A new project was initiated to update the climate projections originally published in the 2011 ClimAID report. The new projections will be available in the first quarter of 2014.

4.5.3 Regional Economic Development and Greenhouse Gas Reductions

The Regional Economic Development and Greenhouse Gas Reductions (REDGHG) Program supports projects that are identified as priority initiatives consistent with Governor Andrew M. Cuomo's Regional Economic Development Council (REDC) initiative and that are not otherwise provided financial support by other authority programs or initiatives. REDGHG provides cost-share funding for energy efficiency, clean and renewable energy, and/or innovative carbon abatement projects that address the regional priorities of the REDCs, results in strategic investments, and builds the capacity within the region to participate in the State's clean energy economy. Projects selected are capable of moving forward in the near term, while positioning the region for long term economic growth. Project funds can be used for implementation of measures and equipment, including project design and engineering costs, infrastructure investments, and demonstrations of new and emerging technologies and approaches. Eligible sectors include businesses, agri-businesses, municipalities (counties, towns, cities, or villages), local development corporations, business or municipal improvement districts, public and private institutions (e.g. universities, colleges, hospitals, schools), and not-for-profits. REDGHG focuses on several end uses, including transportation, manufacturing and industrial process, buildings, agriculture, municipal processes, renewable electric generation, and district energy.

Key accomplishments during this quarter:

- 17 projects received awards.
- 8 contracts have been executed.
- 4 projects have held events and ribbon cuttings.

CASE STUDY 2: Geothermal System at Greater Binghamton Airport Avoids 103 Tons of GHG

The Greater Binghamton Airport is using RGGI funding to avoid 103 tons of greenhouse gas emissions annually with a first-in-the-nation geothermal system that melts snow on a portion of the airport's terminal pavement during winter and cools the terminal building during summer. The airport will also have an educational energy display so visitors can see how the building is performing. RGGI and Federal Aviation Administration funding will cover installation of a geothermal well field, construction of a mechanical building, installation of mechanical equipment and connection piping, connections to a chilled water cooling system, and replacement of two existing terminal building boilers. The project is expected to be completed in August 2014.

4.5.4 Cleaner, Greener Communities

The Cleaner, Greener Communities program was announced by Governor Cuomo in his 2011 State of the State address. It builds on the Climate Smart Communities program, providing enhanced support for development and implementation of regional sustainability plans to help ensure that the State's ongoing and substantial investments in infrastructure help to move communities and New York State as a whole toward a more environmentally sustainable future. The programs encourage communities to use public-private partnerships and develop regional sustainable growth strategies in areas such as emission control, energy efficiency, renewable energy, low-carbon transportation, and other carbon reductions. The programs emphasize activities associated with smart growth, such as creating green jobs, building green infrastructure, investing in environmental justice communities, and strengthening environmental protection.

Key accomplishments during this quarter:

- For Phase II of the Cleaner, Greener Communities Program (Implementation Support) received a total of 193 applications for Category 2 (Comprehensive Planning and Zoning) and Category 3 (Large-Scale Sustainability Projects). Awards will be announced in December 2013. These awards constitute the first projects that will be funded under Phase II of the Cleaner, Greener Communities program.
- Continued to provide one-on-one assistance to Climate Smart Communities in four pilot regions across the state. Assistance consisted of creating climate action plans, completing local greenhouse gas inventories, and providing customized education and training to municipal officials.

4.5.5 NY Green Bank

NY Green Bank, a division of NYSERDA, is a $1 billion initiative proposed by Governor Cuomo in his 2013 State of the State address. NY Green Bank is a central component of Governor Cuomo's strategic statewide vision to scale up clean energy markets, enhance New York State's competitiveness for clean energy businesses, and make the State's energy systems more resilient. It will foster greater private sector investment in projects deploying commercially-proven energy efficiency, renewable energy, and other clean technologies. It is expected to begin operations early in 2014.

Key accomplishments during this quarter:

- An organizational plan as developed to determine specific activities and a timeline required to launch NY Green Bank.
- A business plan, staffing plans, performance metrics, and governance systems for NY Green Bank were developed.
- A competitive Request for Proposals (RFP) seeking innovative finance arrangements for clean energy projects was drafted.
- A petition with the Public Service Commission requesting $165 million to capitalize the Green Bank was filed.
- A business plan assessment was completed.

4.5.6 Economic Development Growth Extension Program (EDGE)

The Economic Development Growth Extension (EDGE) Program facilitated by Regional Outreach Contractors (ROCs) performs on-the-ground outreach, education, and marketing of NYSERDA program opportunities to residents, businesses, institutions, and local governments across the state to promote the value of energy efficiency, sustainable growth practices, clean energy technologies, and innovations using carefully constructed public-private partnerships. The program is aligned with Governor Cuomo's Regional Economic Development Council initiative and provides direct support to advance the strategic priorities and regionally significant projects identified in each region. Through this new alignment with the Regional Councils, NYSERDA can provide a greater level of education and adoption of energy-efficiency and renewable energy practices at the community level.

Key accomplishments during this quarter:

- 103 new partnerships that may help to identify and assist in customer engagement were developed, bringing the total to 348 partnerships.
- 657 project referrals from partners were received, bringing the total to 777 project referrals.
- 91 public outreach activities, such as events, presentations or other speaking engagements were conducted, bringing the total to 210 public outreach activities.
- 807 projects were referred to various NYSERDA programs, bringing the total number of referrals to 919.
- Outreach and program support was provided to the REDCs on 42 projects, bringing the total to 63.

4.6 Program Evaluation

Several RGGI evaluation studies are underway or in the planning stages as of the third quarter of 2013. The study objectives and timing are discussed in the following sections.

4.6.1 Impact Evaluation

Impact evaluation measures the outcomes and benefits of a program, calculates the cost-effectiveness of the program, and compares the outcomes to the program goals. The following impact evaluations are underway or planned. Other study plans are also in development and will be detailed in future quarterly reports.

- Multifamily Performance Program: A major impact evaluation of the SBC/EEPS-funded MPP is being leveraged to assess the impacts of RGGI fuel efficiency incentives. The study will include measurement and verification of energy savings, and attribution analysis of projects completed from 2009 through 2011. The study is expected to be completed by mid-2014.
- Multifamily Carbon Emission Reduction Program: NYSERDA is beginning an impact evaluation to measure and verify the energy and emission impacts attributable to the program. The evaluation is expected to be completed in late 2014 or early 2015.

- Home Performance with ENERGY STAR Program: NYSERDA is beginning an assessment of energy and emission impacts from Green Jobs-Green New York "audit only" participants who may have installed measures on their own in the absence of incentives. NYSERDA will also undertake an evaluation to measure and verify impacts attributable to RGGI fuel incentives. These studies will leverage major, in-progress evaluation of the SBC/EEPS-funded HPwES Program. The completion date for this study is to be determined.
- Municipal Water and Wastewater Program: NYSERDA plans to conduct an impact evaluation to measure and verify energy savings and emission impacts attributable to the program. The study will begin when a critical mass of projects are installed, likely in 2015 or 2016.
- Cost-Effectiveness Assessment Methods Study: A study is currently underway to identify and recommend best practices for assessing cost effectiveness of research, development, demonstration and market-based programs. This study is jointly funded with RGGI and other NYSERDA funds. The study is expected to be completed in early 2014 and will help inform future cost-effectiveness analysis of RGGI research, development, demonstration, and market-based programs.
- Residential Non-Energy Impact Study: A study is currently underway to identify and begin to quantify measurable non-energy impacts from residential programs, including possibly HPwES and the Green Residential Building Program. This study is jointly supported with RGGI and other NYSERDA funds. The study is expected to be completed in early 2014 and is expected to help inform future non-energy impact analysis and reporting for RGGI programs.
- Green Jobs-Green New York Jobs Quantification Study: This study quantified the direct, indirect and induced jobs created/retained from the GJGNY program, including those in disadvantaged communities. The study also examined changes in worker skill level and wages resulting from GJGNY. NYSERDA will issue the final reports for both phases of the study in late 2013.

4.6.2 Process Evaluation/Market Characterization and Assessment

Process evaluation reviews oversight and operations, gauges customer satisfaction, and recommends process and efficiency improvements. Market characterization and assessment develops an understanding of markets and market actors; provides information to support program design and delivery; and tracks changes in markets over time. The following process and market evaluations are underway or planned. Other study plans are also in development and will be detailed in future quarterly reports.

- Multifamily Performance Program: A major, in-progress process/market evaluation of the SBC/EEPS-funded MPP is being leveraged to assess the RGGI fuel efficiency incentive activity and GJGNY audit/loan activity. The study is expected to be completed in the mid-2014.
- Home Performance with ENERGY STAR Program: A major, in-progress process/market evaluation of the SBC/EEPS-funded HPwES is being leveraged to assess the RGGI fuel efficiency incentive activity and GJGNY audit/loan activity. The study is expected to be completed in late 2014.
- GJGNY Constituency Based Organization (CBO) Program: The CBO initiative evaluation is using case studies and in-depth interviews of CBOs to explore various program objectives and to understand the success and barriers experienced by CBOs. Preliminary results will be available in late 2013. In addition, CBO-related activities will be addressed as a part of the above HPwES process evaluation.

- GJGNY Small Business/Not-for-Profit Program: This study will examine program operations, characterize, and understand small commercial and not-for-profit offerings in New York and other areas through benchmarking best practices, identify reasons for participation and measure implementation, and provide recommendations for program improvement. Phase 1 will conclude in late 2013. The scope of Phase 2 is under development and is planned to include research with non-participating small commercial and not-for-profit organizations, lenders, and loan originators.

4.6.3 Baseline Studies

NYSERDA is also conducting two major baseline studies to assess residential and commercial markets across a broad range of customer segments and energy measures. The goals of these studies are: 1) to better understand building stock and associated energy use, including saturations of energy-consuming measures, penetrations of energy-efficient equipment, building characteristics and energy management practices; and 2) use this information to estimate the technical, economic and achievable energy efficiency opportunities in New York State in the next three and five years. Though these large studies are being supported by SBC funding, RGGI funds are supplementing the budget to allow for robust data collection on fuel measures.

The residential baseline study is currently well underway and is expected to conclude in late-2014. In the third quarter of 2013, NYSERDA Evaluation staff received management approval to issue a request for proposals to hire a contractor to conduct the Commercial Baseline Study. The RFP will be released in the fourth quarter of 2013. Study planning and implementation for the Commercial Baseline is expected to begin in early 2014 once a contractor is selected and an agreement is finalized.

Appendix A: Savings Calculations Methodology

This appendix describes the general methods and assumptions that are used to calculate the energy savings, emission reductions, bill savings, and cost-effectiveness metrics presented in the New York's Regional Greenhouse Gas Initiative Investment Plan (2013 Operating Plan).

A.1 Energy Savings

Annual energy savings values are based on the past performance of publicly funded energy efficiency programs and information obtained from various sources of technical literature.

A.2 CO_2 Reductions

Emissions factors are used to translate the energy savings data into annual GHG emissions reduction values. The GHGs evaluated in the report include carbon dioxide, methane, and nitrous oxide. Because each of these gases has a different global warming potential,[5] emissions for gases other than carbon dioxide are converted into carbon dioxide equivalent units (CO_2e) through multiplication with their appropriate Intergovernmental Panel on Climate Change (IPCC) global warming potential value,[6] shown in Table A-1.

Table A-1. Global Warming Potentials

These values represent a 100-year time horizon.

Source: Intergovernmental Panel on Climate Change. 1995. Second Assessment: Climate Change.

Gas	Global Warming Potential
Carbon dioxide (CO_2)	1
Methane (CH_4)	21
Nitrous Oxide (N_2O)	310

[5] A global warming potential is a measure that estimates how much a given mass of a GHG contributes to global warming. It is calculated over a specific time interval, which is 100 years for the IPCC Second Assessment Report values.

[6] Intergovernmental Panel on Climate Change. 1995. Second Assessment: Climate Change 1995. According to EPA guidance, this inventory uses potentials from the IPCC Second Assessment report, rather than values from the more current Third Assessment: Climate Change 2001 report. New York DEC regulation Part 242 1.2 (49) uses the Third Assessment values. Reconciliation between these two methodologies will be investigated as part of the program implementation and evaluation process.

Table A-2 shows the emission factors used in the Operating Plan to calculate emissions from on-site fuel combustion, which are derived from U.S. Environmental Protection Agency (EPA) emission coefficients. The CO_2e values represent aggregate CO_2, CH_4, and N_2O emissions. If a program in the Operating Plan covers more than one sector (e.g., the Commercial and Industrial Program) then the estimated reduction is based on a straight average emission factor.

Table A-2. Fuel Combustion Emission Factors by Sector

Sources: EPA's Inventory of U.S. Greenhouse Gas Emissions and Sinks: 1990 – 2006, Annexes 2 & 3 and EPA State Climate Energy Program's State Inventory Tools released on 1/3/2011

	Transport (lb CO_2e/MMBtu)	Residential (lb CO_2e/MMBtu)	Commercial (lb CO_2e/MMBtu)	Industrial (lb CO_2e/MMBtu)
Coal	0.00	224.89	211.43	207.58
Natural Gas	117.25	117.14	117.14	113.38
#2 Oil/Distillate/ Diesel	163.22	163.78	163.78	161.80
#6 Oil/Residual	-	-	166.28	174.20
Kerosene	-	162.10	162.10	159.89
Propane	140.51	136.94	136.94	139.45
Gasoline	159.09	-	-	-
Aviation Fuel	160.86	-	-	-
Wood	-	15.79	15.79	3.92
Steam		139.30	139.30	

An average emission factor of 826 lb CO_2e/MWh is used to estimate emission reductions associated with electricity use reductions for all sectors. This value includes emissions from in-state electricity generation as well as emissions associated with net-imports of electricity.[7] Although electricity savings may not lead to near-term emission reductions under the RGGI CO_2 cap, savings will potentially reduce imports of electricity to New York State; the demand for CO_2 allowances, leading to a possible future reduction in the cap; and the carbon-footprint of end-users, as they will be responsible for a smaller percent of the emissions associated with electricity production.

[7] The emission factor for electricity is based on data from Patterns & Trends- New York State Energy Profiles: 1997 – 2011 (NYSERDA 2013) and methodology from the GHG Inventory and Forecast prepared for the 2009 New York State Energy Plan (August 2009).

A.3 Bill Savings

Annual bill savings values for each program are estimated by multiplying the energy savings by sector-specific fuel price data.

Table A-3 shows fuel prices by sector. Electricity and natural gas prices represent average values for six service territories weighted by the percentage of RGGI projects located in each utility area; basic service charges have been excluded.

Table A-3. Fuel Prices by Sector[a]

Sector	Electricity ($/kWh)	Natural Gas ($/MMBtu)	Fuel Oil / Distillate ($/MMBtu)	Propane ($/MMBtu)
Residential	0.19	10.17	25.59	34.21
Commercial	0.22	7.26	24.51	26.04
Industrial	0.12	7.25	23.39	30.32
Transportation	0.05	N/A	27.58	N/A
C&I	0.17	7.26	23.95	28.18

Sector	Residual ($/MMBTU)	Kerosene ($/MMBTU)	Wood ($/Cord)	Coal ($/Ton)
Residential	N/A	28.13	7.83	N/A
Commercial	17.41	28.13	N/A	5.78
Industrial	17.41	24.56	N/A	4.74
Transportation	N/A	N/A	N/A	N/A
C&I	17.41	26.35	N/A	5.26

[a] For electricity and natural gas, prices are an average of January and July 2011 prices as reported by the NYS Department of Public Service billing data http://www3.dps.ny.gov/W/PSCWeb.nsf/All/C56A606DB183531F852576A50069A75D?OpenDocument. For all other fuel types, prices reflect 2011 retail prices as reported in NYSERDA's *Patterns and Trends- New York State Energy Profiles: 1997-2011*

Table A-4. Program Measure Life Assumptions

Average savings-weighted measure life, shown by program, is used to calculate expected lifetime benefits.

Program	Electricity Measure Life	Fuels Measure Life
GJGNY - Single-Family Residential Audit Component	18	24
GJGNY - Single-Family Residential Loan Component	19	23
GJGNY - Multifamily Residential Audit Component	13	12
RGGI - Multifamily Performance Program	13	15
RGGI - Multifamily Carbon Emissions Reduction Program	N/A	13
RGGI - EmPower New York	N/A	24
RGGI - Home Performance with ENERGY STAR®	18	24
RGGI - Green Residential Building Program	18	24
RGGI - Solar Thermal Incentive Program	N/A	20
RGGI - Low-Rise Residential New Construction Program	18	24
RGGI - NYSERDA Photovoltaic Initiative	25	N/A
LIPA Photovoltaic and Efficiency Initiative	25	N/A
Regional Economic Development and GHG Reduction	18	18

Appendix B: Former Program Names

Table B-1. Former Program Names

Current Program Name	Formerly Known As
Residential Efficiency Services	Residential Space and Water Heating
Municipal Water and Wastewater	Water and Wastewater Efficiency; Water and Wastewater Energy Efficiency
Industrial Innovations	Industrial Process Improvements; Advanced Building Systems and Industrial Process Improvements
Transportation Research	Advanced Transportation Development
Clean Energy Business Development	Clean Technology and Industrial Development
Power Systems	Advanced Power Technology Program (APTP)

Appendix C: Summary of Portfolio Benefits

Table C-1. Summary of Portfolio Benefits

Quarter	Cumulative Annual MMBtus	Cumulative Annual MWhs Saved	Cumulative Annual MWhs Generated	Cumulative Annual Tons of CO_2e Mitigated	Cumulative Annual Bill Savings Realized by Participating Customers ($)
Qrt 2	3409	4371	0	2100	700000
Qrt 3	47332	4371	0	5630	1200000
Qrt 4	91471	838	4316	9310	2900000
Qrt 1	115763	1213	3903	10950	2700000
Qrt 2	152501	5233	3992	15553	4000000
Qrt 3	197622	6473	4205	17874	4600000
Qrt 4	256980	8126	4218	23805	6000000
Qrt 1	318273	13363	4218	31194	7800000
Qrt 2	411462	13702	4248	40368	9400000
Qrt 3	519144	15023	4278	51353	10700000
Qrt 4	577025	16895	4345	56764	12000000
Qrt 1	651564	18206	4305	60349	16300000
Qrt 2	770186	20038	4386	69068	18100000
Qrt 3	889027	24385	16710	96916	21200000

Table C-2. Summary of Fuel Savings by Type

Quarter End Date	Quarter	Fuel Type	Cumulative Annual MMBtus	Cumulative Annualized Pipeline MMBtus[a]
6/30/2010	Qrt 2	Diesel	0	
6/30/2010	Qrt 2	Gasoline	0	
6/30/2010	Qrt 2	Natural Gas	0	
6/30/2010	Qrt 2	Oil	3409	
6/30/2010	Qrt 2	Propane	0	
9/30/2010	Qrt 3	Diesel	0	
9/30/2010	Qrt 3	Gasoline	0	
9/30/2010	Qrt 3	Natural Gas	0	
9/30/2010	Qrt 3	Oil	47332	
9/30/2010	Qrt 3	Propane	0	
12/31/2010	Qrt 4	Diesel	0	
12/31/2010	Qrt 4	Gasoline	0	

Table C-2 Continued

Quarter End Date	Quarter	Fuel Type	Cumulative Annual MMBtus	Cumulative Annualized Pipeline MMBtus[a]
12/31/2010	Qrt 4	Natural Gas	3926	
12/31/2010	Qrt 4	Oil	74691	
12/31/2010	Qrt 4	Propane	301	
12/31/2010	Qrt 4	Steam	12553	
3/31/2011	Qrt 1	Diesel	0	
3/31/2011	Qrt 1	Gasoline	0	
3/31/2011	Qrt 1	Natural Gas	18206	
3/31/2011	Qrt 1	Oil	85998	
3/31/2011	Qrt 1	Propane	1280	
3/31/2011	Qrt 1	Steam	10157	
3/31/2011	Qrt 1	Wood	122	
6/30/2011	Qrt 2	Diesel	0	
6/30/2011	Qrt 2	Gasoline	0	
6/30/2011	Qrt 2	Kerosene	27	
6/30/2011	Qrt 2	Natural Gas	20481	
6/30/2011	Qrt 2	Oil	118963	
6/30/2011	Qrt 2	Propane	2272	
6/30/2011	Qrt 2	Steam	10557	
6/30/2011	Qrt 2	Wood	201	
9/30/2011	Qrt 3	Diesel	0	
9/30/2011	Qrt 3	Gasoline	0	
9/30/2011	Qrt 3	Kerosene	208	
9/30/2011	Qrt 3	Natural Gas	40683	
9/30/2011	Qrt 3	Oil	140917	
9/30/2011	Qrt 3	Propane	4818	
9/30/2011	Qrt 3	Steam	10557	
9/30/2011	Qrt 3	Wood	439	
12/31/2011	Qrt 4	Diesel	0	
12/31/2011	Qrt 4	Gasoline	0	
12/31/2011	Qrt 4	Kerosene	285	
12/31/2011	Qrt 4	Natural Gas	88439	
12/31/2011	Qrt 4	Oil	150163	
12/31/2011	Qrt 4	Propane	7344	
12/31/2011	Qrt 4	Steam	10157	
12/31/2011	Qrt 4	Wood	592	
3/31/2012	Qrt 1	Diesel	0	

Table C-2 Continued

Quarter End Date	Quarter	Fuel Type	Cumulative Annual MMBtus	Cumulative Annualized Pipeline MMBtus[a]
3/31/2012	Qrt 1	Gasoline	0	
3/31/2012	Qrt 1	Kerosene	285	
3/31/2012	Qrt 1	Natural Gas	108635	
3/31/2012	Qrt 1	Oil	186637	
3/31/2012	Qrt 1	Propane	11810	
3/31/2012	Qrt 1	Steam	10157	
3/31/2012	Qrt 1	Wood	749	
6/30/2012	Qrt 2	Diesel	0	
6/30/2012	Qrt 2	Gasoline	0	
6/30/2012	Qrt 2	Kerosene	285	
6/30/2012	Qrt 2	Natural Gas	140597	
6/30/2012	Qrt 2	Oil	246477	
6/30/2012	Qrt 2	Propane	12798	
6/30/2012	Qrt 2	Steam	10157	
6/30/2012	Qrt 2	Wood	1000	
6/30/2012	Qrt 2	Residual Oil	144	
9/30/2012	Qrt 3	Diesel	0	
9/30/2012	Qrt 3	Gasoline	0	
9/30/2012	Qrt 3	Kerosene	285	
9/30/2012	Qrt 3	Natural Gas	183379	
9/30/2012	Qrt 3	Oil	303649	
9/30/2012	Qrt 3	Propane	14187	
9/30/2012	Qrt 3	Residual Oil	144	
9/30/2012	Qrt 3	Steam	15901	
9/30/2012	Qrt 3	Wood	1599	
12/31/2012	Qrt 4	Diesel	0	
12/31/2012	Qrt 4	Gasoline	0	
12/31/2012	Qrt 4	Kerosene	1026	
12/31/2012	Qrt 4	Natural Gas	203118	
12/31/2012	Qrt 4	Oil	337096	
12/31/2012	Qrt 4	Propane	16593	
12/31/2012	Qrt 4	Residual Oil	144	
12/31/2012	Qrt 4	Steam	15969	
12/31/2012	Qrt 4	Wood	3079	
3/31/2013	Qrt 1	Diesel	0	0
3/31/2013	Qrt 1	Gasoline	0	0

Table C-2 Continued

Quarter End Date	Quarter	Fuel Type	Cumulative Annual MMBtus	Cumulative Annualized Pipeline MMBtus[a]
3/31/2013	Qrt 1	Kerosene	1359	353
3/31/2013	Qrt 1	Natural Gas	231225	90488
3/31/2013	Qrt 1	Oil	378533	317149
3/31/2013	Qrt 1	Propane	18848	7747
3/31/2013	Qrt 1	Steam	15969	37123
3/31/2013	Qrt 1	Wood	5129	1338
3/31/2013	Qrt 1	Residual Oil	144	27
3/31/2013	Qrt 1	Coal	357	0
6/30/2013	Qrt 2	Diesel	0	0
6/30/2013	Qrt 2	Gasoline	0	0
6/30/2013	Qrt 2	Kerosene	1270	138
6/30/2013	Qrt 2	Natural Gas	313287	76148
6/30/2013	Qrt 2	Oil	411518	262809
6/30/2013	Qrt 2	Propane	21051	7341
6/30/2013	Qrt 2	Steam	15969	30232
6/30/2013	Qrt 2	Wood	6550	935
6/30/2013	Qrt 2	Residual Oil	144	20
6/30/2013	Qrt 2	Coal	397	0
9/30/2013	Qrt 3	Diesel	0	0
9/30/2013	Qrt 3	Gasoline	0	0
9/30/2013	Qrt 3	Kerosene	1365	356
9/30/2013	Qrt 3	Natural Gas	415512	182146
9/30/2013	Qrt 3	Oil	424549	239750
9/30/2013	Qrt 3	Propane	23656	24099
9/30/2013	Qrt 3	Steam	15969	13112
9/30/2013	Qrt 3	Wood	7497	2203
9/30/2013	Qrt 3	Residual Oil	144	0
9/30/2013	Qrt 3	Coal	335	0

[a] Tracked beginning Quarter 1, 2013

Appendix D: NYS RGGI Auction Proceeds

Table D-1. NYS RGGI Auction Proceeds[a]

Auction Date	Control Period	Clearing Price	New York State Allowances Sold	New York State Auction Proceeds
12/17/2008	First	$3.38	12,422,161	$41,986,904
3/18/2009	First	$3.51	12,422,161	$43,601,785
3/18/2009	Second	$3.05	776,385	$2,367,974
6/17/2009	First	$3.23	11,861,849	$38,313,772
6/17/2009	Second	$2.06	776,385	$1,599,353
9/9/2009	First	$2.19	11,861,849	$25,977,449
9/9/2009	Second	$1.87	776,385	$1,451,840
12/2/2009	First	$2.05	11,861,850	$24,316,793
12/2/2009	Second	$1.86	571,423	$1,062,847
3/10/2010	First	$2.07	15,136,022	$31,331,566
3/10/2010	Second	$1.86	740,167	$1,376,711
6/9/2010	First	$1.88	15,136,022	$28,455,721
6/9/2010	Second	$1.86	756,801	$1,407,650
9/8/2010	First	$1.86	11,421,736	$21,244,429
9/8/2010	Second	$1.86	464,418	$863,817
12/1/2010	First	$1.86	8,678,724	$16,142,427
12/1/2010	Second	$1.86	414,863	$771,645
3/9/2011	First	$1.89	15,153,524	$28,640,160
3/9/2011	Second	$1.89	757,676	$1,432,008
6/8/2011	First	$1.89	4,519,648	$8,542,135
6/8/2011	Second	$1.89	383,114	$724,085
9/7/2011	First	$1.89	2,689,151	$5,082,495
12/7/2011	First	$1.89	9,621,954	$18,185,493
3/14/2012	Second	$1.93	8,895,733	$17,168,765
6/6/2012	Second	$1.93	8,265,426	$15,952,272
9/5/2012	Second	$1.93	9,315,659	$17,979,222
12/5/2012	Second	$1.93	7,568,550	$14,607,302
3/13/2013	Second	$2.80	14,252,818	$39,907,890
6/5/2013	First	$3.21	750,000	$2,407,500
6/5/2013	Second	$3.20	14,252,818	$45,751,546
9/4/2013	First	$3.21	769,253	$2,053,906
9/4/2013	Second	$3.20	14,578,296	$38,924,050
9/4/2013	First	$3.21	769,253	$2,053,906
9/4/2013	Second	$3.20	14,578,296	$38,924,050
First Control Period Total			**144,305,904**	**$336,282,535**
Second Control Period Total			**83,546,917**	**$203,348,977**
TOTAL			**227,852,821**	**$539,631,512**

[a] New York did not offer allowances for sale in the RGGI auction held on December 25, 2008, where the clearing price for 2009 vintage allowances was $3.07. The first control period for fossil-fuel fired electric generators took effect on January 1, 2009 and concluded on December 31, 2011. The second control period took effect on January 1, 2012 and extends through December 31, 2014

Appendix E: Total NYS RGGI Funds

Table E-1. NYS RGGI Funds

Quarter End Date	Quarter	Fund Category	Cumulative Funds ($)
9/30/2010	Qrt 3	Interest Allocated to the RGGI Portfolio	$ 940,276
9/30/2010	Qrt 3	RGGI Auction Proceeds	$ 265,358,611
12/31/2010	Qrt 4	Interest Allocated to the RGGI Portfolio	$ 940,276
12/31/2010	Qrt 4	RGGI Auction Proceeds	$ 282,272,683
3/31/2011	Qrt 1	Interest Allocated to the RGGI Portfolio	$ 940,276
3/31/2011	Qrt 1	RGGI Auction Proceeds	$ 312,344,851
6/30/2011	Qrt 2	Interest Allocated to the RGGI Portfolio	$ 1,034,063
6/30/2011	Qrt 2	RGGI Auction Proceeds	$ 321,611,071
9/30/2011	Qrt 3	Interest Allocated to the RGGI Portfolio	$ 1,034,063
9/30/2011	Qrt 3	RGGI Auction Proceeds	$ 326,693,566
12/31/2011	Qrt 4	Interest Allocated to the RGGI Portfolio	$ 1,034,063
12/31/2011	Qrt 4	RGGI Auction Proceeds	$ 344,879,060
3/31/2012	Qrt 1	Interest Allocated to the RGGI Portfolio	$ 1,998,557
3/31/2012	Qrt 1	RGGI Auction Proceeds	$ 362,047,824
6/30/2012	Qrt 2	Interest Allocated to the RGGI Portfolio	$ 1,998,557
6/30/2012	Qrt 2	RGGI Auction Proceeds	$ 378,000,097
9/30/2012	Qrt 3	Interest Allocated to the RGGI Portfolio	$ 1,998,557
9/30/2012	Qrt 3	RGGI Auction Proceeds	$ 395,979,318
12/31/2012	Qrt 4	Interest Allocated to the RGGI Portfolio	$ 3,026,525
12/31/2012	Qrt 4	Interest Allocated to the GJGNY Program	$ 770,000
12/31/2012	Qrt 4	RGGI Auction Proceeds	$ 410,586,620
3/31/2013	Qrt 1	Interest Allocated to the RGGI Portfolio	$ 3,026,525
3/31/2013	Qrt 1	Interest Allocated to the GJGNY Program	$ 770,000
3/31/2013	Qrt 1	RGGI Auction Proceeds	$ 450,494,510
6/30/2013	Qrt 2	Interest Allocated to the RGGI Portfolio	$ 3,026,525
6/30/2013	Qrt 2	Interest Allocated to the GJGNY Program	$ 770,000
6/30/2013	Qrt 2	RGGI Auction Proceeds	$ 498,653,556
9/30/2013	Qrt 3	Interest Allocated to the RGGI Portfolio	$ 3,026,525
9/30/2013	Qrt 3	Interest Allocated to the GJGNY Program	$ 770,000
9/30/2013	Qrt 3	RGGI Auction Proceeds	$ 539,631,512

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

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Quarter Ending September 30, 2013

March 2014

State of New York
Andrew M. Cuomo, Governor

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

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