

New York State Energy Research and Development Authority

New York's RGGI-Funded Programs Status Report

Quarter Ending December 31, 2011

April 2012

nyserda
Energy. Innovation. Solutions.

NYSERDA's Promise to New Yorkers:

New Yorkers can count on NYSERDA for objective, reliable, energy-related solutions delivered by accessible, dedicated professionals.

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

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

Our Core Values: Objectivity, integrity, public service, and innovation.

Our 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 & Renewable Programs

Helping New York to achieve its aggressive clean energy goals – including programs for consumers (commercial, municipal, institutional, industrial, residential, and transportation), renewable power suppliers, and programs designed to support market transformation.

Energy Technology Innovation & Business Development

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

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, K-12 energy education programs, and 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 – 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 policy-makers and consumers have objective and reliable information to make informed energy decisions – including State Energy Planning, policy analysis to support the Low-Carbon Fuel Standard and Regional Greenhouse Gas Initiative, nuclear policy coordination, and a range of energy data reporting including *Patterns and Trends*.

Table of Contents

1 Introduction	1-1
1.1 New York’s RGGI Funds	1-1
2 Budget and Spending Status	2-1
3 Summary of Portfolio and Program Benefits	3-1
4 Program Activities and Implementation	4-1
4.1 Residential, Commercial, Industrial, and Municipal Sectors	4-1
4.1.1 Green Jobs – Green New York (GJGNY)	4-1
4.1.2 Residential Energy Services	4-4
4.1.3 Municipal Water and Wastewater Program	4-7
4.1.4 Industrial Process Improvement Program.....	4-7
4.2 Transportation	4-8
4.2.1 Transportation Research	4-8
4.3 Power Supply and Delivery (PSD)	4-9
4.3.1 Statewide Photovoltaic Program	4-9
4.3.2 Advanced Power Technology Program	4-9
4.4 Multi-Sector Programs	4-10
4.4.1 Clean Technology Industrial Development	4-10
4.4.2 Climate Research and Analysis	4-10
4.4.3 Cleaner Greener Communities	4-10

NYSERDA RECORD OF REVISION

Document Title
New York's RGGI Funded Programs Status Report Quarter Ending December 31, 2011 Final Report April 2012

Revision Date	Description of Changes	Revision on Page(s)
4/24/12	Original Issue	Original Issue

1 Introduction

To implement the Regional Greenhouse Gas Initiative (RGGI), New York State established its Carbon Dioxide (CO₂) Budget Trading Program through regulations promulgated by the Department of Environmental Conservation (DEC) and the CO₂ Allowance Auction Program through regulations promulgated by the New York State Energy Research and Development Authority (NYSERDA).¹ This report is prepared pursuant to the “Operating Plan for Investments in New York under the CO₂ Budget Trading Program and the CO₂ Allowance Auction Program” (Operating Plan),² and provides an update on the progress of programs through the quarter ending December 31, 2011. It contains an accounting of program spending, an estimate of program benefits, and a summary description of program activities and implementation. An amendment providing updated program descriptions and funding levels for the 2011 version of the plan was approved by NYSEDA’s Board of Directors on June 20, 2011.³

1.1 New York’s RGGI Funds⁴

As of December 31, 2011, New York sold over 149.2 million CO₂ allowances and received approximately \$345 million in auction proceeds. An additional \$1,034,063 in interest earnings were allocated on the RGGI portfolio. These funds are reinvested for program implementation and are allocated to various RGGI programs. Detailed auction results are presented in Table 1-1, while total RGGI funds are shown in Table 1-2.

¹ For the DEC adopted regulations, see 6 NYCRR: CO₂ Allowance Auction Program Regulations.

² On June 21, 2010, NYSEDA Part 242: CO₂ Budget Trading Program Regulations; for the NYSEDA adopted regulations, see 21 NYCRR Part 507 published an Operating Plan that provides the budgets and descriptions for the programs that would be funded by the RGGI auction proceeds. Please refer to [RGGI Use of Auction Proceeds](#) for ongoing developments.

³ Please refer to the [2011 RGGI Operating Plan Amendment](#) for details.

⁴ RGGI funds include both auction proceeds and interest earned from those proceeds. See [NY Proceeds by Auction](#) for more details on auction results.

Table 1-1. New York State's RGGI Auction Results⁵

Auction Date	Control Period	Clearing Price	New York State Allowances Sold	New York State Auction Proceeds
12/17/08	Current	\$3.38	12,422,161	\$41,986,904
3/18/09	Current	\$3.51	12,422,161	\$43,601,785
	Future	\$3.05	776,385	\$2,367,974
6/17/09	Current	\$3.23	11,861,849	\$38,313,772
	Future	\$2.06	776,385	\$1,599,353
9/09/09	Current	\$2.19	11,861,849	\$25,977,449
	Future	\$1.87	776,385	\$1,451,840
12/02/09	Current	\$2.05	11,861,850	\$24,316,793
	Future	\$1.86	571,423	\$1,062,847
3/10/10	Current	\$2.07	15,136,022	\$31,331,56
	Future	\$1.86	740,167	\$1,376,711
6/9/10	Current	\$1.88	15,136,022	\$28,455,721
	Future	\$1.86	756,801	\$1,407,650
9/8/10	Current	\$1.86	11,421,736	\$21,244,429
	Future	\$1.86	464,418	\$863,817
12/1/10	Current	\$1.86	8,678,724	\$16,142,427
	Future	\$1.86	414,863	\$771,645
3/9/11	Current	\$1.89	15,153,524	\$28,640,160
	Future	\$1.89	757,676	\$1,432,008
6/8/11	Current	\$1.89	4,519,648	\$8,542,135
	Future	\$1.89	383,114	\$724,085
9/7/2011	Current	\$1.89	2,689,151	\$5,082,495
	Future	n/a	0	\$0
12/7/2011	Current	\$1.89	9,621,954	\$18,185,493
	Future	n/a	0	\$0
Current Control Period Total			142,786,651	\$331,821,129
Future Control Period Total			6,417,617	\$13,057,930
TOTAL			149,204,268	\$344,879,060

Source: RGGI Inc.

⁵ 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.

Table 1-2. New York State's RGGI Funds through December 31, 2011

Fund Category	Cumulative Funds
RGGI Auction Proceeds	\$344,879,060
Interest Allocated to the RGGI Portfolio	\$1,034,063
TOTAL	\$345,913,123

2 *Budget and Spending Status*

This section presents financial data for the approved RGGI programs through December 31, 2011. Table 2-1 reflects how the \$345.9 million of current funds are allocated across the four major program areas:

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

Table 2-1 also presents the current contract commitments and spending levels for each program.

Table 2-1. Anticipated Available Funding and Financial Status through December 31, 2011 (\$ million)

	Allocation of Cumulative Funds ^a	Contract Commitments ^b	Funds Spent
Residential/Commercial/Industrial/Municipal			
Residential Energy Services	26.2	13.4	5.3
Municipal Water and Wastewater	3.5	1.6	1.0
Industrial Process Improvement	4.7	1.6	0.3
Total Residential/Commercial/Industrial/Municipal	34.4	16.7	6.6
Transportation			
Transportation Research	2.0	1.5	0.4
Total Transportation	2.0	1.5	0.4
Power Supply and Delivery			
Statewide Photovoltaic Initiative	11.7	11.7	11.1
Advanced Power Technology	4.5	3.7	2.5
Total Electric Power Supply and Delivery	16.2	15.3	13.6
Multi-Sector			
Clean Technology and Industrial Development	13.8	4.8	1.8
Climate Research and Analysis	8.6	2.0	1.4
Cleaner Greener Communities	32.5	-	-
Total Multi-Sector	54.8	6.7	3.2
Other Costs ^c			
Deficit Reduction Plan (DRP) Transfer ^d	90.0	90.0	90.0
Con Edison Smart Grid Program ^e	12.3	12.3	12.3
Program Administration ^f	10.3	5.4	5.4
Metrics and Evaluation	7.1	0.6	0.1
RGGI Inc. Costs ^g	4.3	3.9	3.3
New York State Cost Recovery Fee	2.4	0.9	0.9
OTHER COSTS TOTAL	126.5	113.1	112.0
SUBTOTAL	233.9	153.3	135.9
Green Jobs/Green NY			
Green Jobs/Green NY	112.0	112.0	18.5
TOTAL	345.9	265.3	154.4

^a Includes auction proceeds and allocated interest on the RGGI portfolio. The allocation is consistent with the 3-year budget presented in the Operating Plan.

^b Represents total cumulative encumbrances, i.e. funds that have been spent or legally obligated. In addition, contract commitments for Green Jobs/Green NY (GJGNY) include funds set aside in a dedicated account that are not otherwise spent or legally obligated to particular contracts.

^c 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.

^d 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.

^e On December 22, 2009, NYSEDA's Board approved a proposed consent decree that resolves the legal challenge to the State's RGGI program. The parties to the consent decree estimate that the total commensurate benefit for years 2009 - 2014 is \$12.3 million and agreed to dedicate such funds for the development of smart grid technologies in the Con Edison territory. 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.

^f Includes NYSEDA's upfront administrative expenses related to the development and implementation of the CO₂ Budget Trading Program, the CO₂ Allowance Auction program, and the Operating Plan.

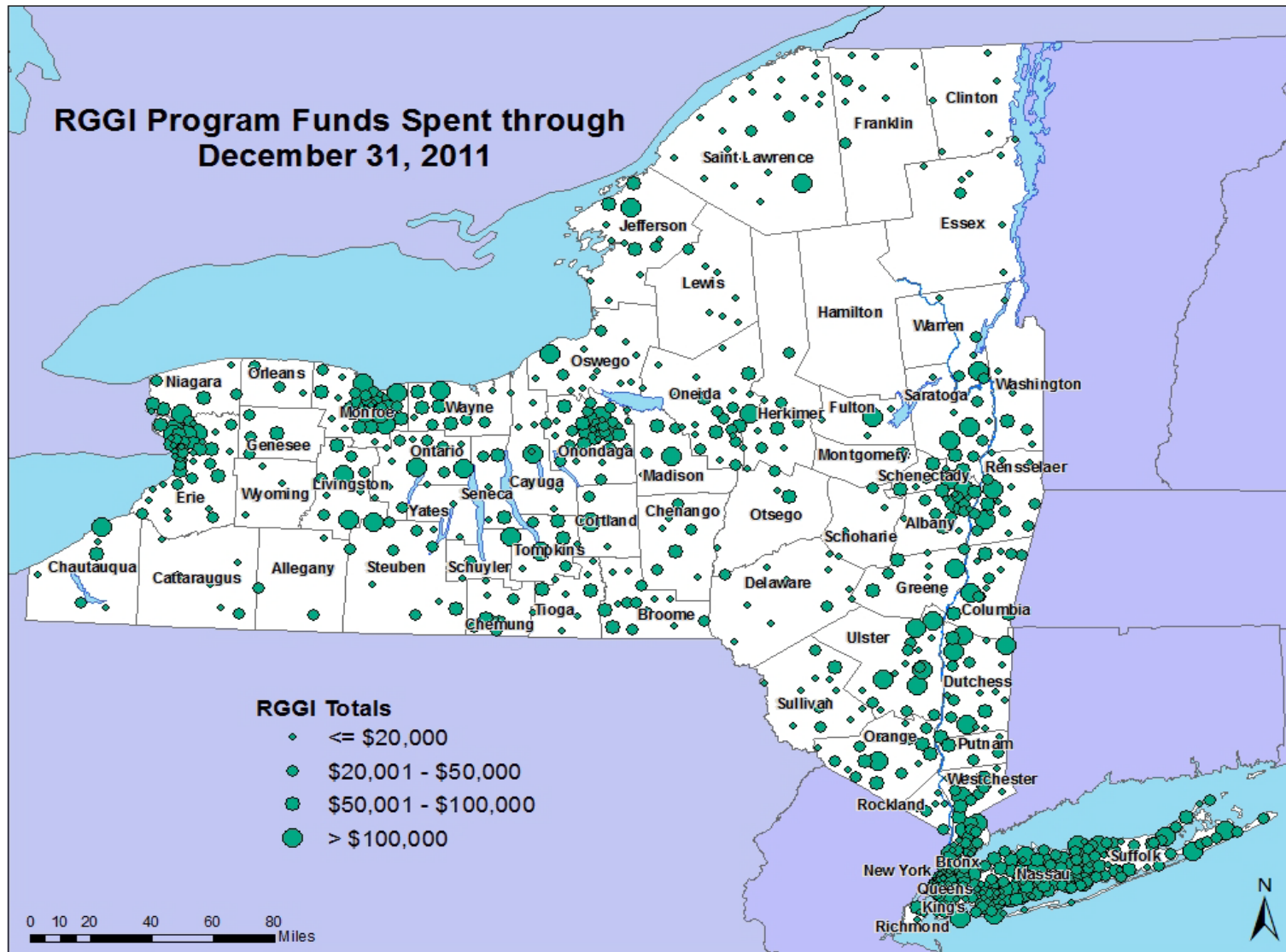
^g The first-year budget includes RGGI Inc. start-up costs and New York State's share of ongoing RGGI Inc. expenses. RGGI Inc. is a non-profit corporation created to support development and implementation of the CO₂ Budget Trading Program.

Totals may not sum exactly due to rounding.

Source: NYSEDA

As stated in the Operating Plan, geographic equity of expenditures will be pursued across the portfolio of RGGI programs. Figure 2-1 shows the distribution of over \$37.3 million in spent RGGI program funding across the state for projects or activities that can be associated with a specific geographic area. An additional \$5.0 million, not depicted in this figure, has been spent on activities that have statewide benefits, such as climate research and workforce development.

Figure 2-2. Geographic Distribution of RGGI Program Funds Spent



3 Summary of Portfolio and Program Benefits

Table 3-1 and Table 3-2 show the estimated cumulative annual benefits as of December 31, 2011 at the portfolio and program levels, respectively.⁶ 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 Annual 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. 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. At this time, the program benefits include some projects that also are supported by other non-RGGI funding sources administered by NYSERDA.

Table 3-1. Summary of Cumulative Portfolio Benefits

Benefits	Results through December 31, 2011
Net Greenhouse Gas Emission Savings ¹ (Annual Tons CO ₂ e ²)	23,805
Net Electricity Savings (Annual MWh)	8,126
Renewable Energy Generation (Annual MWh)	4,218
Net Natural Gas Savings (Annual MMBtu)	88,439
Net Fuel Oil Savings (Annual MMBtu)	150,163
Net Propane Savings (Annual MMBtu)	7,344
Net Steam Savings (Annual MMBtu) ³	10,157
Net Wood Savings (Annual MMBtu)	592
Net Kerosene Savings (Annual MMBtu)	285
Net Gasoline Savings (Annual MMBtu)	---
Net Diesel Savings (Annual MMBtu)	---
Annual Energy Bill Savings to Participating Customers (\$ Million) ⁴	6.0

¹ 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. Nevertheless, electric efficiency projects will reduce end-users' responsibility or footprint associated with emissions from electricity production.

² CO₂e stands for carbon dioxide equivalent and describes the amount of CO₂ 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.

³ Steam savings went down from last quarter due to a data entry error for a project that has not been inspected, and therefore cannot claim any savings, yet.

⁴ This total excludes bill savings associated with steam for the Multifamily Performance Program.

Source: NYSERDA

⁶ Cumulative annual benefits are reflective of the annual impacts from all currently operational projects installed since program inception.

Table 3-2. Summary of Cumulative Program Benefits

Program	Net Electricity Savings or Renewable Energy Generation (Annual MWh)	Net Energy Savings (Annual MMBtu)	Net Greenhouse Gas Emission Savings ¹ (Annual Tons CO₂e²)
<i>Residential, Commercial, Industrial & Municipal Sectors</i>			
<i>Green Jobs - Green New York</i>			
GJGNY - Single-Family Residential Audit Component ³	1,308	91,798	6,437
GJGNY - Single-Family Residential Loan Component ³	658	46,978	3,303
GJGNY - Multifamily Residential Audit Component ³	2,630	30,593	3,005
<i>Residential Energy Services</i>			
Multifamily Performance Program ⁴	3,652	107,707	10,634
EmPower New York SM	0	4,919	385
Home Performance with ENERGY STAR [®]	6.7	3,678	305
Green Residential Building Program ³	317	6,292	510
Solar Thermal Incentive & Outreach Program	0	1,101	77
<i>Power Supply & Delivery</i>			
Statewide Photovoltaic Program	4,218	0	1,742
Cross-Program Overlap ⁵	446	36,086	2,594
TOTAL	12,344	256,980	23,805

¹ 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. Nevertheless, electric efficiency projects will reduce end-users' responsibility or footprint associated with emissions from electricity production.

² CO₂e stands for carbon dioxide equivalent and describes the amount of CO₂ 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.

³ At this time, the benefits for this program include some projects that also have been supported by other non-RGGI NYSERDA funding sources.

⁴ Net Energy Savings (Annual MMBtu) went down from last quarter due to reprogramming of funds.

⁵ 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 or the Multifamily Performance Program.

Source: NYSERDA

4 Program Activities and Implementation⁷

4.1 Residential, Commercial, Industrial, and Municipal Sectors

4.1.1 Green Jobs – Green New York (GJGNY)

GJGNY is a statewide program to promote energy efficiency and the installation of clean technologies to reduce energy costs and greenhouse gas emissions. GJGNY will provide subsidized energy audits to single family, multifamily, small business, and not-for-profit building owners as well as financing options for completing the energy efficiency services. GJGNY is also designed to support sustainable community development and create opportunities for green jobs. The GJGNY Annual Report was issued on September 30, 2011⁸. Table 4-1 presents financial data for the approved GJGNY programs through December 31, 2011.

⁷ The metrics presented in this section are estimates made by program implementation staff and are not validated; evaluation results will be presented, as they are available, in the Annual Evaluation and Status Reports.

⁸ For more information, see the [Green Jobs – Green New York Annual Report](#).

Table 4-1. Anticipated Green Jobs – Green New York Available Funding and Financial Status through December 31, 2011 (\$ million)

	Allocation of Cumulative Funds ^a	Contract Commitments ^b	Funds Spent
Workforce Development, Outreach and Marketing			
Workforce Development	8.0	2.3	0.6
Outreach and Marketing	10.3	6.9	1.0
Total Workforce Development, Outreach and Marketing	18.3	9.2	1.6
Residential			
Energy Audit Incentive	11.6	2.8	2.8
Implementation Costs	1.0	0.8	0.6
Financing: Loans	-	7.9	7.9
Financing: Loan Repayments	-	(0.4)	(0.4)
Total Financing	26.7	7.5	7.5
Total Residential	39.2	11.1	11.0
Multifamily			
Energy Audits	3.3	0.8	0.6
Implementation Costs	1.6	1.5	1.3
Total Financing	11.1	-	-
Total Multifamily	16.0	2.3	1.9
Small Commercial			
Energy Audits	5.6	3.9	0.9
Implementation Costs	5.0	0.4	0.1
Total Financing	13.0	-	-
Total Small Commercial	23.7	4.3	1.0
SUBTOTAL	97.2	26.9	15.4
Other Costs			
Program Administration	7.8	3.0	3.0
Program Evaluation	5.6	0.8	0.4
New York State Cost Recovery Fee	1.9	0.3	0.3
OTHER COSTS TOTAL	15.3	4.0	3.7
TOTAL	112.6	30.9	19.1

^a Includes auction proceeds and allocated interest on the Green Jobs/Green NY (GJGNY) funds. The allocation is consistent with the 3-year budget presented in the Operating Plan.

^b Represents total cumulative encumbrances, i.e. funds that have been spent or legally obligated.

Financing. NYSERDA continued to work actively throughout the fourth Quarter of 2011 with staff from the Department of Public Service and the utilities to develop the processes to be used to implement On-Bill Recovery, which was signed into law by Governor Cuomo on August 4, 2011. Residential On-bill Financing was launched in January 2012, with Multifamily and Small Business/Not-for-Profit to follow.

GJGNY financing, a vital component of the GJGNY program, continues to expand and offer additional services to participants. Through December 2011, a total of 1,658 residential Tier 1 (traditional underwriting criteria) and Tier 2 (alternative underwriting criteria) loans have been approved, and 922 loans have been closed. These loans provided \$8,016,678 in funding enabling the completion of NYS GJGNY energy efficiency projects that, without financing, may never have been started. The energy efficiency projects financed are anticipated to save 658,194 kWh and 46,978 MMBtu per year.

The residential loan underwriting criteria for Tier 2 loans were revised in July to allow a Debt-to-Income (DTI) Ratio of up to 70% if the borrower has a FICO score of 680 or higher (prior standard was up to a 55% DTI ratio with a FICO score of 640 or higher), and also to allow borrowers to qualify as long as they have had no bankruptcy within the last five years (reduced from seven years). An additional modification was made to the Tier 2 underwriting criteria in October that waives the DTI requirement for those applicants approved for Assisted Home Performance with ENERGY STAR. These changes are estimated to increase the proportion of the alternate Tier 2 loan underwriting standards to 12% of cumulative total Program loan approvals. Tier 2 already represents nearly 7% of cumulative loan approvals, up from less than 3% before the standards were changed in July 2011.

Single-Family Residential. Since the launch of GJGNY on November 15, 2010, 2,701 project completions are attributable to GJGNY audits and are anticipated to save 1,307,818 kWh and 91,798 MMBtu annually. The number of project completions represents 34% of the 7,785 Home Performance project completions since the Program's launch. This number continues to rise with 75% of the 452 project completions in December 2011 that were eligible for a GJGNY audit actually originating from a GJGNY audit.

Contractors continue to report strong demand for free/reduced-cost comprehensive home assessments. The conversion from audit to energy retrofit continues strong at 31%, with some contractors reporting greater than 50% conversion rates.

Multifamily Residential. GJGNY provides funding for Multifamily Performance Program (MPP) audits and financing. Through December 31, 2011, the MPP GJGNY audit program received 90 audit applications and completed 66 audits. Eighteen projects have moved forward to contracts to have measures installed. Energy savings associated with installed measures total 2,629,979 kWh and 30,593 MMBtu per year.

The multifamily financing component of GJGNY was launched in June of 2011, to be delivered through the Multifamily Performance Program. Building owners participating, or who have participated in the Multifamily Performance Program, may be eligible for reduced interest financing. NYSERDA is currently seeking lenders to participate in the Multifamily Financing Program.

Small Business and Not-for-Profit. The FlexTech program was expanded January 2011 in support of the GJGNY legislation. GJGNY energy audits are offered statewide at no charge to small businesses and not-for-profits with an average electric demand of 100kW or less and ten employees or less. For participants ineligible for GJGNY audit funding, FlexTech also uses American Recovery and Reinvestment Act (ARRA) funding to provide free energy audits to any small business or not-for-profit with an average electric demand of 100 kW or less. As of December 31, 2011, 578 GJGNY audits and 331 ARRA audits have been completed.

The Small Business/Not-For-Profit Energy Efficiency Financing Program was launched in June 2011. As of December 31, 2011, six lending institutions had signed up to be listed as participating lenders on the NYSERDA website. Three customer applications have been received to date.

Workforce Development. NYSERDA workforce development (WFD) efforts funded under GJGNY are aligned with program strategies that promote the widespread implementation of energy efficiency and clean energy measures. The WFD program is designed to help provide meaningful employment opportunities for displaced workers, the long-term unemployed, and new workforce entrants. Workforce training initiatives are underway to assist people with the processes of career planning, training, certification, and identifying energy employment opportunities. The most recent initiatives include incentives for job placement, mentoring, and other on-the-job training (OJT) to ensure workers are prepared to provide quality work based on sound principles and to provide maximum energy savings

through the proper installation of energy efficiency measures. The training equipment, video conferencing, training/simulation houses, hands-on diagnostics, and other training approaches needed to master skills and pass certification exams also are provided, enabling businesses to find and employ workers that are trained to deliver quality work. In addition, NYSERDA is using video conferencing to communicate to GJGNY stakeholders and provide training through Department of Labor One-Stop Centers.

During the fourth quarter of 2011, NYSERDA continued to process applications resulting from a number of GJGNY open-enrollment Workforce Development solicitations and finalize contracts with proposers selected through competitive solicitations. Of particular note, Northern Manhattan Improvement Corporation held a graduation ceremony for participants in a Bridge Training and Job Readiness program targeting disadvantaged, unemployed residents of Washington Heights. Students received preparation for a GED, training in weatherization and job placement services. The program is a direct feeder into entry-level energy efficiency jobs through Community Retrofit New York City (CRNYC) and to advanced technical training offered through the Association for Energy Affordability and Solar One.

Outreach and Marketing. NYSERDA staff provided significant training to the Community Based Organizations that were competitively selected to provide outreach for GJGNY. In-person trainings were held during the fourth quarter 2011 with ongoing web-based training being provided. Multi-language educational and marketing materials to promote the GJGNY program, including on-bill financing, are being developed as a result of feedback that this language presents a significant barrier to participation.

Evaluation. The GJGNY Evaluation Operating Plan was approved by NYSERDA's Officers during the third quarter of 2010.⁹ One of the first tasks outlined in the GJGNY Evaluation Operating Plan, development of a program theory and logic model report, is now complete. The program theory and logic model report was developed by NYSERDA's evaluation contractors and presented to the Advisory Council by Energy Analysis staff on December 14, 2011. The logic model work was summarized in the October 2011 GJGNY Annual Report and the full program theory and logic model report is posted on NYSERDA's website.¹⁰ The program theory and logic model report identifies program inputs, activities, outputs and outcomes. It also lists indicators and research issues to help guide and focus future evaluations of the program.

Early evaluation efforts are well underway for the GJGNY Program. A Residential Single Family Homes Process and Market Characterization and Assessment study is underway with survey data collection to support the study initiated. Data collection is anticipated to be finalized in March 2012 with the final report expected to be available by May 2012.

4.1.2 Residential Energy 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, NYSERDA has been able to use limited funds for gas efficiency measures, primarily for low-income consumers, in select gas utility service territories.

⁹ For more information, see the [Green Jobs – Green New York Operating Plan for Program Evaluation](#).

¹⁰ For more information, see the [Green Jobs – Green New York Program Logic Model Report](#).

The addition of the Residential Energy Services programs allows 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. The Residential Energy Services program seeks to address environmental justice issues by directly targeting outreach to environmental justice communities and by referring CBOs that address environmental justice issues to appropriate programs.

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 and propane energy use in the multi-unit residential buildings and increasing the efficiency and performance of space and domestic water heating systems, ventilation systems, and building enclosures through system replacement and optimization.

All buildings receive program support for energy audits to determine what measures are cost effective, expected energy savings, and the costs to install them. Projects also receive implementation incentives. Sixty percent of the program funds are targeted to low-income and affordable housing. NYSERDA will coordinate closely with the Weatherization Assistance Program (WAP) to ensure the most effective use of RGGI funds.

Through December 31, 2011, RGGI funds supported 25 completed energy efficiency projects that are expected to save a total of 3,651,967 kWh and 107,707 MMBtu per year.

Multifamily Carbon Emission Reduction Program. The Multifamily Carbon Emissions Reduction Program (MCERP) will provide financial assistance and technical support to owners of multifamily buildings currently burning #6 fuel oil to convert their heating systems to use less carbon-intensive fuels. Less carbon-intensive fuels include #2 fuel oil, biodiesel and biodiesel blends, natural gas, and renewables (geothermal, solar thermal). This program is positioned to help encourage early adoption of the City of New York's phase-out of #6 fuel oil and early compliance with city-level legislation (Int. 194-2010), which requires all buildings that burn fuel oil to burn biofuel blends. Converting #6 fuel oil heated buildings to cleaner fuels will reduce carbon emissions, improve air quality, and produce positive public health benefits.

MCERP launched on April 4, 2011. As of June 30, nearly \$6 million in RGGI funding was allocated to 176 ongoing projects that are anticipated to serve 29,717 units in 370 buildings. This program is available to the entire state, but only five applications came from areas outside of the five boroughs of New York City (four from Westchester County and one from Nassau County).

EmPower New YorkSM. EmPower New YorkSM (EmPower) provides cost-effective energy reduction services to households with incomes at or below 60% of the State Median Income. RGGI funding permits cost-effective oil and propane efficiency measures such as insulation, blower-door assisted air sealing, and heating systems repair and replacements. All households meeting the income eligibility requirements, regardless of electric service provider, will be eligible to apply for heating efficiency assistance. NYSERDA will continue to coordinate closely with the Weatherization Assistance Program (WAP) to ensure effective use of RGGI funds.

Through December 31, 2011, 287 energy efficiency projects were completed and are projected to save a total of 4,919 MMBtu per year. An additional 61 projects are currently in progress.

Home Performance with ENERGY STAR[®]. Home Performance with ENERGY STAR (HPwES) is a comprehensive energy efficiency services program for existing one-to-four family homes. 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.

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 oil and propane consumption. Through December 31, 2011, 87 energy efficiency projects were completed, and are projected to save approximately 3,678.2 MMBtu and 6,749 kWh per year.

Green Residential Building Program. The Green Residential Building Program (GRBP)¹¹ 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 eleven dwelling units. The GRBP offers incentives to building owners for certifying buildings to meet or exceed Leadership in Energy and Environmental Design (LEED) or National Green Building Standard guidelines, as well as other 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. The GRBP provides an innovative approach to program design and is one of the first statewide programs in the country to offer direct financial incentives to building owners for certified green residential buildings.

From the Program's inception in September 2010 through the end of 2011, the GRBP received 182 applications; 89 of these buildings received incentives paid with RGGI funds.¹² Most projects that receive GRBP funding also receive incentives through NYSERDA's New York ENERGY STAR Homes Program, such that the projects' energy savings may not be solely attributable to the GRBP. The GRBP is an important addition to NYSERDA's suite of residential programs, and has helped effectuate approximately 5,201 MMBtu natural gas, 1,091 MMBtu propane, and 316,682 kWh of energy savings through December 31, 2011.

Integral to the market transformation approach is the need to increase the awareness of, and demand for, comprehensive building performance services while simultaneously building an infrastructure of trained, certified Technicians. Outreach to NYSERDA residential program partners to raise awareness of the GRBP is ongoing. Through December 31, 2011, 34 Technicians have been approved for program participation to verify GRBP building eligibility.

Solar Thermal Incentive & Outreach Program. RGGI funds will support incentives for the installation of solar thermal systems to replace fossil-fuel domestic hot water systems. Incentives will be available for new and existing multifamily and single-family buildings. Incentives also will be fully coordinated with the Multifamily Performance Program, Home Performance with ENERGY STAR, the New York ENERGY STAR Homes Program, and the new solar thermal program under the Renewable Portfolio Standard. RGGI funds may be used to support the installation of residential solar thermal systems through outreach efforts targeted at increasing the market and demand for solar thermal.

The Program Opportunity Notice for the Solar Thermal Program (PON 2149) was released on December 10, 2010. Currently there are 68 approved installers. NYSERDA received 58 incentive applications totaling \$ 431,178 for RGGI-funded projects. As of December 31, 2011, 49 solar thermal projects were installed and are anticipated to save a total of 1,101 MMBtu annually. PON 2149 has a total of \$550,035

¹¹ Public Authorities Law Section 1872(4) directs NYSERDA to create and administer a green residential building program in New York

¹² Energy savings associated with these incentives and projects are currently captured in the System Benefits Charge and Energy Efficiency Portfolio Standard progress reports, and are not represented within this report.

available for funding incentives. This amount increased from the previous total of \$456,486 due to an additional \$93,549 in unspent funding for PV projects becoming available. This funding will be used for solar thermal units that can displace between 50% and 80% of the fossil fuels used to produce domestic hot water.

4.1.3 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 Municipal Water and Wastewater program offers coordinated assistance designed to achieve cost-effective CO₂ reductions by providing technical support and implementation assistance to existing facilities and new construction projects.

Wastewater Energy Efficiency Program (WWEP). The Wastewater Energy Efficiency Program (WWEP) provides a unique opportunity to coordinate RGGI climate change goals and funding with US Environmental Protection Agency (USEPA) goals and funding while installing infrastructure that will improve the environment and keep New York 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 USEPA 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.

WWEP reviews likely Green Project Reserve projects on the SRF Intended Use Plan, and identifies candidates for energy efficiency and carbon abatement opportunities. 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.

Through December 2011, NYSERDA and EFC continued to initiate outreach to municipalities in order to discuss the WWEP and the benefits of participation in the program. Cumulatively, RGGI funds supported the technical energy analyses of 50 municipal wastewater treatment plants. Once installed, the measures currently recommended by the analyses are projected to save a total of 38,379 MWh and 54,355 MMBtu annually. Three technical energy analyses are ongoing.

4.1.4 Industrial Process Improvement Program

The Industrial Process Improvement 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 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's manufacturing base; are likely to be cost effective; and are presently not supported under SBC programs. For Industrial Process Improvements, 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 inputs and development of advanced controls provided they directly bring about GHG reductions.

NYSERDA completed a competitive PON for Ultraviolet Light and Electron Beam Process Innovation and Market Transformation (PON 1641) and selected projects for RGGI funding. Twelve proposals were received and RGGI funding was approved for three projects that requested a total of \$888,610. While

project contracting was ongoing, two proposers retracted their projects. Consequently, NYSERDA has contracted with the remaining project in the amount of \$547,487.

NYSERDA has initiated efforts to issue a solicitation (RFP 2413, issued in January of 2012) using a newly-refined strategy for Accelerating the Commercialization of Industrial Technologies (ACIT) focusing specifically on innovative technologies that have high replication potential for New York's manufacturing base. The program will be funded at a \$5 million level, of which \$3,040,000 will consist of RGGI funds. RFP 2413 will support multiple full-scale demonstrations for several NYSERDA-R&D contractors' technologies that have been demonstrated successfully, and for which business and marketing plans exist, but are not yet widely accepted by the marketplace. To maximize potential benefits to NYS, two or more contractors' technologies will be selected competitively based on a range of factors, including, but not limited to: energy and CO₂ reduction potential, technical integrity, economic potential, and replicability. The Program will require each industrial demonstration site to involve a NYS engineering consultant, who will serve as a "commissioning agent," involved with the demonstration from start to finish. This requirement is expected to increase project success rate and enhance education and replication opportunities. All commissioning agents and demonstration site staff associated with a specific technology will meet regularly to share lessons learned and develop a "best practices" guidebook to accelerate transition of the technology to NYSERDA deployment programs and direct market uptake. The fleet of demonstrations for a given technology will have staggered starts, thus providing critical opportunity for knowledge to pass from demonstration to demonstration and into the wider marketplace. Aggressive technology transfer that includes testimonials from site personnel and commissioning agents will help establish credibility, minimize risk, and encourage the industrial-customer base to adopt innovative technologies.

NYSERDA also completed a competitive PON for the Next Generation of Technologies for End Use Efficiency (PON 1772). PON 1772 sought proposals to develop and demonstrate emerging and innovative technologies or systems that increase the efficiency of end-use energy consumption in buildings, reduce GHG emissions in buildings, reduce energy demand in New York State, or are of strategic importance to the state's energy and environmental future. Nineteen proposals were received, and RGGI funding was approved for four projects that requested a total of \$1,042,381. Project contracting is ongoing.

4.2 Transportation

4.2.1 *Transportation Research*

The goal of the Transportation Research Program is to commercialize technologies, products, systems, and services that provide superior GHG reduction performance and cost-per-ton values. Activities include product development, field testing, performance validation, policy development, and business assistance associated with emerging products that provide verified GHG benefits.

RGGI funding was used for nine contracts in the transportation arena. These projects range from electric vehicle infrastructure, vehicle components and new fuels, as well as transportation optimization systems for both roadways and airports. Anti-idling systems for NYC ferry boats are also under development. NYSERDA has contracted a combined \$1.5 million toward these efforts, and has been invoiced \$361,998 to date.

Projects include electric vehicle charging infrastructure, development of products for the management of aircraft departures and taxiing for fuel reduction, biofuels, traffic light control, and fuel reduction in commercial fleets.

4.3 Power Supply and Delivery (PSD)

The objective of the two PSD programs is to help reduce greenhouse gas (GHG) emissions from the electric power sector in New York. 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, including 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.

4.3.1 Statewide Photovoltaic Program

The Statewide Photovoltaic Program focuses on reducing GHG emissions in the short term by helping establish a sustainable market for solar energy throughout New York that includes targeted financial incentives. The 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.

Through December 31, 2011, the Statewide Photovoltaic Program supported the installation of 362 solar photovoltaic systems with a total capacity of approximately 3,372 kW. It is estimated these systems will produce 4,218 MWh of electricity annually. An additional 15 projects are approved.

4.3.2 Advanced Power Technology Program

The Advanced Power Technology Program (APTP) is designed to reduce GHG emissions in the long term. The program has two RGGI-funded focus areas — advanced renewable energy, and carbon capture, recycling, and sequestration — and will provide support activities to yield substantial GHG reductions. Other advanced power generation systems and technologies may be explored in the future.

Advanced Renewable Energy. The Advanced Renewable Energy component of the APTP supports projects that foster the market introduction of a broad range of promising renewable energy technologies in New York, including advanced biomass, tidal and off-shore wind technologies.

Five ongoing contracts are assessing renewable power generation technologies, including anti-reflective coatings and nano-conductors for photovoltaic sources, solar thermal generation, and a wind plant analyzer. A completed study has taken stock of small scale hydro sites for NYS with recommendations for further development. \$1.1 million of the approved \$1.7 million has been invoiced in this effort.

In addition, a series of technical analyses that characterize and establish, on a preliminary basis, the suitability of an ocean site area for a wind energy project were conducted on behalf of a collaboration among the New York Power Authority, the Long Island Power Authority, and Con Edison to procure energy from a 350-700 MW offshore wind farm located in the New York City-Long Island harbor-bay area (also known as the NY Bight). These studies are intended to establish a baseline of knowledge of geophysical features, meteorology, climatology, and natural resources/biota in the affected ocean tract, and will provide some basis for supporting future leasing applications and project siting and development activities.

Carbon Capture, Recycling, and Sequestration. The Carbon Capture, Recycling, and Sequestration component of the APTP will focus 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.

The TriCarb Consortium for Carbon Sequestration continued project work to identify potential sequestration targets in Rockland County. The project, which is also supported by the U.S. Department of Energy (USDOE), will complete detailed geological analysis of Rockland County's Newark Basin bedrock. Drilling of the deep stratigraphic well at Exit 14 of the NYS Thruway began in August, with all permits in place, and concluded in October, at a total depth of almost 6,900 feet. Logging and coring was completed. The well was plugged, equipment removed, and the site restored by mid-December.

4.4 Multi-Sector Programs

4.4.1 Clean Technology Industrial Development

The Clean Technology Industrial Development Program seeks to create, attract, and grow industries in New York that can exploit emerging business opportunities in clean energy and environmental technologies while supporting the goal of carbon mitigation. Key elements of the program include advanced industrial research and development of innovative technologies, providing risk capital and business assistance, and development of advanced research centers.

NYSERDA selected six companies for award through the Renewable, Clean Energy and Energy Efficiency Product Manufacturing Incentive Program (PON 1176). Each project is receiving \$1.5 million, with the majority of funding tied to manufacturing the defined products in New York State. Four of these projects ultimately were contracted. The \$6 million in RGGI funds already awarded attracted private investment of approximately \$43 million.

4.4.2 Climate Research and Analysis

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.

In the fourth quarter of 2011 the program pursued outreach activities related to the issuance of a major climate adaptation project entitled, "Responding to Climate Change in New York State" (aka ClimAID). The Climate Research and Analysis Program continues to work on a major climate mitigation project. These projects have been instrumental in supporting climate-related initiatives throughout New York State, including the State's Climate Action Plan. The interim Climate Action Plan was published on November 9, 2010.¹³ Work continues on additional components of the Climate Action Plan and new initiatives are focusing on addressing research needs identified both in the plan as well as from additional stakeholder input. A Program Opportunity Notice has been issued for research related to climate adaptation.

Plans for 2012 include solicitations for a New York State climate change clearinghouse and climate change mitigation research.

4.4.3 Cleaner Greener Communities

The Cleaner Greener Communities program was announced by Governor Cuomo in his 2011 State of the State address. It will build 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 as a

¹³ For more information, see the [New York State Climate Action Plan Interim Report](#)

whole, toward a more environmentally sustainable future. The program will encourage communities to use public-private partnerships and develop regional sustainable growth strategies in areas such as emissions control, energy efficiency, renewable energy, low-carbon transportation, and other carbon reductions. The program will emphasize activities such as revitalizing urban areas through smart growth, creating green jobs, building green infrastructure, and strengthening environmental justice and protection.

The program will have two primary components: (1) development of, and updating to, regional sustainable growth plans; and (2) implementation of the sustainability plans. At least 10 region-specific planning teams will be competitively selected to develop Regional Sustainability Plans, one for each of the 10 Regional Economic Development Council regions. Each team selected will work closely with their corresponding Regional Economic Development Council(s) to ensure that the region's sustainability goals are coordinated with their Regional Economic Development Plans. Approximately 90% of the incentives budget will be used to support the implementation component of the program.

Implementation of the regional sustainable growth plans also will be a competitive program. Support will be provided for project proposals that address specific items within the regions' sustainability plan. Projects that have garnered community buy-in, as well as those that include public-private partnerships, will be encouraged. Consideration will be given to support implementation projects in multiple types of communities (*i.e.*, rural, suburban, and urban communities). RGGI proceeds can be used for the implementation of plan elements that fall within the scope of the permissible use of RGGI proceeds (energy efficiency, renewable energy, and innovative carbon reduction programs).

Outreach and community support for the overall Cleaner, Greener Communities initiative will be provided in part through Climate Smart Communities and Energy Smart Communities.

To date, seven of the 10 regions have been awarded grants for the development of, and updating to, regional sustainability plans. Another round of competitive funding for planning grants will be launched in March 2012 that will be open to the remaining three regions. The seven regions that have been awarded grants are expected to begin work on their regional sustainability plans in March 2012 and their plans are expected to be completed by the end of the year. The implementation component of the program is currently being designed and is expected to launch in late 2012 or early 2013 after the majority of regional plans have been completed.

Climate Smart Communities. The Climate Smart Communities (CSC) Program was established in 2009 by the state departments of Environmental Conservation (DEC) and State (DOS), the Public Service Commission (PSC), and NYSERDA. It operates under the joint management of DEC and NYSERDA. The CSC Program was designed to strengthen and enhance the participating agencies' outreach to local governments (counties, towns, villages, and cities). Contractors selected under NYSERDA's Request for Proposals (RFP) 2141 will engage local communities in climate action planning, greenhouse gas emissions inventories, energy conservation, use and encouragement of low-carbon energy, improved waste management, reduction of transportation emissions, and adaptation to climate change through land-use and other planning. NYSERDA is in the process of contracting with successful proposers and it is anticipated contracts will be signed in the beginning of April 2012.

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 their reliance on fossil fuels. NYSERDA professionals work to protect our environment and create clean-energy jobs. NYSERDA has been developing partnerships to advance innovative energy solutions in New York since 1975.

To learn more about NYSERDA programs and funding opportunities visit nyserda.ny.gov

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

17 Columbia Circle
Albany, New York 12203-6399

toll free: 1 (866) NYSERDA
local: (518) 862-1090
fax: (518) 862-1091

info@nyserda.ny.gov
nyserda.ny.gov



State of New York
Andrew M. Cuomo, Governor

New York's RGGI-Funded Programs Status Report

Quarter Ending December 31, 2011

New York State Energy Research and Development Authority
Francis J. Murray, Jr., President and CEO