Green Jobs – Green New York Program Logic Model Report

Prepared for

The New York State

Energy Research and Development Authority (NYSERDA)

Prepared by

GDS Associates, Inc.

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New York State Energy Research and Development Authority Green Jobs – Green New York Program Logic Model Report

(September 29, 2011)

INTRODUCTION

This report identifies and documents key elements (inputs, market actors, barriers, goals, activities, outputs, outcomes, potential external influences and researchable issues) associated with the Green Jobs – Green New York (GJGNY) Program administered by the New York State Energy Research and Development Authority (NYSERDA). This logic model addresses NYSERDA's expanded activities occurring as a result of recently added GJGNY funding. In addition, for contextual purposes only, references to other related activities and associated funding sources may also be presented.

This document provides:

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

1.1 Related NYSERDA Documents

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

Table 1. Relevant Documents Reviewed

NYSERDA Document Description

Benenson Strategy Group and Larkspur Energy, GMMB, Statewide Market Research Report for New York State Public Service Commission, July 14, 2011.

Brand Cool Marketing, Green Jobs - Green New York Secondary Research Report, March 15, 2011.

Department of Labor, NY State's Clean Energy Industry: Labor Market and Workforce Intelligence Report, May 2009.

Green Jobs - Green New York Advisory Council Meeting, Meeting Notes, February 18, 2010.

Green Jobs - Green New York Advisory Council Meeting, Meeting Notes, January 26, 2010.

New York State Department of Labor, Part II – Technical Proposal, State Energy Sector Partnership (SESP) and Training Grant Solicitation for Grant Application (SGA/DFA PY-08-20).

NYSERDA Energy Analysis Staff, HPwES Contractor Presentation, October 28, 2010.

NYSERDA Multifamily All-Hands Contractor Meeting GJGNY Discussion Presentation, October 26, 2010.

NYSERDA Energy Analysis Staff, Small Business/ Not-For-Profit Presentation, October 26, 2010.

NYSERDA Energy Analysis Staff, Workforce Development Funding Presentation, Adele Ferranti, October 26, 2010.

NYSERDA Energy Analysis Staff, Outreach and Marketing Presentation, October 26, 2010.

NYSERDA, Green Jobs - Green New York Annual Report, October 2010.

NYSERDA, Green Jobs - Green New York Small Businesses/Not-For-Profits Operating Plan, October 28, 2010.

NYSERDA, Green Jobs - Green New York Multifamily Operating Plan, May 26, 2010.

NYSERDA, Green Jobs - Green New York Outreach and Marketing Operating Plan, June 28, 2010.

NYSERDA, Green Jobs - Green New York Presentation. Francis J. Murray Jr. January 26, 2010.

NYSERDA, Green Jobs - Green New York Single Family (1-4) Homes Operating Plan, October 28, 2010.

NYSERDA, Green Jobs - Green New York Webinar for DPS, March 25, 2011.

NYSERDA, Green Jobs - Green NY Workforce Development Funding Presentation, Rebecca Sterling, July 20, 2010.

NYSERDA, Green Jobs - Green New York Workforce Development Operating Plan, March 23, 2010.

Table 2. Relevant Documents Reviewed (continued)

NYSERDA Document Description

NYSERDA Program Opportunity Notices (PON):

- NYSERDA Energy Efficiency Career Pathways and Technical Training, Program Opportunity Notice (PON) No. 1817
- NYSERDA GJGNY OJT/Internships and Enhanced Standards for Apprenticeship, Program Opportunity Notice (PON) No.2033
- NYSERDA GJGNY Outreach by Constituency Based Organizations , Request For Proposal (RFP) No.2038
- NYSERDA GJGNY Technical Training and Certification Standards, Program Opportunity Notice (PON) No.2032
- NYSERDA GJGNY Training and Implementation Contractor, Request For Proposal (RFP) No.2080
- NYSERDA GJGNY Training Inventory, Assessment, and Curriculum Updates, Program Opportunity Notice (PON) No.2034
- NYSERDA Homeowner/Community Outreach Curriculum Development and Contactor Workshops, Program Opportunity Notice (PON) No.2014
- NYSERDA Solar Thermal Training, Program Opportunity Notice (PON) No.2011
- NYSERDA Workforce Development Training Partnerships, Program Opportunity Notice (PON) No.1816

NYSERDA, Workforce Development Training Partnership Program, EEPS Webinar. January 7, 2009.

Senate Assembly, Power New York Act of 2011, June 22,2011

State of New York Public Service Commission, Case 07-M-0548 Order Authorizing Workforce Development Initiatives, Issued and Effective June 22, 2009.

U.S. Environmental Protection Agency, The Clean Air Act, Regulation 40 CFR 50-88

Websites:

NYSERDA GJGNY Website: www.nyserda.org/GreenNY/

NYSERDA Website: www.nyserda.org

New York Green Careers Website: www.GreenCareersNY.com

NY Advisory Council, Workforce Development and Training Green Jobs-Green New York Meeting, Draft Workforce Operating Plan Presentation, Adele Ferranti, February 18, 2010.

Working Group VII - Workforce Development and Training Report to the PSC, Submitted 10-17-2008.

Section 2: CONTEXT AND PROGRAM DESCRIPTION

2.1 Program Description

On October 9, 2009, the Green Jobs Green New York (GJGNY) Act of 2009¹ was signed into law. GJGNY is a statewide initiative to promote energy efficiency, reduce energy consumption and costs, reduce greenhouse gas emissions, and create green jobs. GJGNY provides access to free or reduced-cost comprehensive energy audits, energy efficiency installation services, and low-interest financing, to support the installation of energy efficiency improvements, as well as aggressive workforce development initiatives, and job placement and outreach by constituency-based organizations (CBOs) serving targeted communities.

The GJGNY Act allocates \$112 million of funding from the proceeds of selling CO₂ allowances under the Regional Greenhouse Gas Initiative (RGGI) and directs NYSERDA to²:

- 1) establish a Revolving Loan Fund to provide access to financing for approved cost-effective energy efficiency improvements for residential, multifamily, and small business/ not-for-profit structures. The legislation established a loan cap of \$13,000 for the residential (existing 1- to 4-family homes) sector and \$26,000 for small business/ not-for-profits facilities, with NYSERDA directed to establish a loan cap for the multifamily sector (\$5,000 per unit, not to exceed \$500,000 per project)
- 2) pursue the feasibility of other innovative financing mechanisms, including but not limited to On-Bill Recovery, and Property Assessed Clean Energy (PACE);
- 3) issue one or more competitive solicitations seeking proposals from constituency-based organizations (CBOs) to serve as a local representative to connect community members to the program;
- 4) target communities in areas where energy costs are particularly high in relation to a measure of median household income as determined by NYSERDA, or that have been designated as a non-attainment area for one or more pollutants³;
- 5) give preference in awards to applicants that include significant participation by minority- and women-owned business enterprises and applications to serve economically distressed communities;
- 6) establish standards for comprehensive energy audits based on building type and other relevant considerations;
- 7) establish a schedule of fees for comprehensive energy audits, including a sliding scale;
- 8) enter into contracts to provide employment and training services to support the GJGNY program;
- 9) establish an Advisory Council; and
- 10) provide annual reports to the Governor, Senate and Assembly.

On August 4, 2011, Governor Cuomo signed The Power NY Act of 2011, an omnibus energy package that encouragers new investments in electric generating facilities across New York and creates the

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¹ A.8901/S.5888 and chapter amendment A.9031/S.6032

² NYSERDA, *Green Jobs – Green New York Annual Report*, October 2010. The Act Directs NYSERDA to administer the GJGNY Program in consultation with the Division of Housing and Community Renewal (DHCR), Department of Labor (DOL), Office of Temporary and Disability Assistance (OTDA), Department of Public Service (DPS), Power Authority of the State of New York (NYPA), Department of Economic Development (DED), and the Department of Environmental Conservation (DEC).

³ Pursuant to section 107 of the U.S. Environmental Protection Agency, The Clean Air Act, Regulation 40 CFR 50-88

nation's first statewide "On-Bill" Recovery program to increase energy efficiency for homeowners and businesses.

The new law builds upon the GJGNY Act of 2009 and is intended to aid in the creation of thousands of jobs and continue to advance the state on a course of reliable, cleaner energy while strengthening environmental protections.

Power NY directs NYSERDA to:

- 1) reduce energy demand by establishing an On-Bill Recovery program to allow New York homeowners and businesses to pay back loans for energy efficiency improvements via a surcharge on their local utility bill;
- 2) increase the loan cap for residential and small business/ not-for-profit facilities to \$25,000 and \$50,000, respectively; and
- 3) study potential policy approaches to increasing solar energy development in New York.

NYSERDA has established an Advisory Council⁴ to provide guidance to the Authority on program design and implementation, including the seven distinct Working Groups that were created to address specific focus areas in the development of GJGNY. GJGNY elements align closely with NYSERDA's existing residential, commercial and workforce development program initiatives. GJGNY program components include: ⁵

1) Workforce Development (WFD) – The GJGNY WFD activities are designed to provide employment opportunities for disadvantaged workers, long-term unemployed and new workforce entrants for green job opportunities. NYSERDA engages existing contractors to immediately deliver training services by structuring direct-entry apprenticeship and internship incentives and subsidies for on-the-job training (OJT) to help defray staffing costs. Initiatives also help build New York's training infrastructure through expanding programs in well established training centers, furnishing new training equipment and tools, and increasing field training and certification examination capacity and delivery protocols to help ramp up workforce participation in training and certification. GJGNY leverages existing NYSERDA EEPS Workforce Development (WFD) initiatives and other funding streams: System Benefit Charge (SBC), Energy Efficiency Portfolio Standard (EEPS), Renewable Portfolio Standard (RPS), and the Regional Greenhouse Gas Initiative (RGGI).⁶ NYSERDA works in cooperation with the New York State Department of Labor (NYS DOL) in the design and implementation of Workforce Development programs. Additionally, NYSERDA's training partners work directly with the NYS DOL Career One-Stop system in order to maximize the impact of Workforce Development programs on the long term unemployed, underemployed and disadvantaged populations of New York State.

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⁴ The Advisory Council consists of: (A) The President of NYSERDA; The Secretary of State; The Commissioner of Housing and Community Renewal; The Commissioner of Labor; The Commissioner of Temporary and Disability Assistance; The Chair of the Consumer Protection Board; The Chair of the Department of Public Service; The President of the Power Authority of the State of New York; The President of the Long Island Power Authority; The Commissioner of Economic Development; The Commissioner of Environmental Conservation; or the designees of such persons. And (B): Representatives of Constituency-Based Community Groups, Consumer Advocates on utility and housing issues; Community-Based Workforce Development Groups; Unions, Including Building Trades and Property Services; Home Performance Contractors; Large-Scale Construction Contractors; and Investment Market Experts. The President of NYSERDA serves as Chair of the Council.

⁵ NYSERDA, Green Jobs Green NY (GJGNY) Annual Report, October 2010.

⁶ System Benefit Charge (SBC), Energy Efficiency Portfolio Standard (EEPS), Renewable Portfolio Standard (RPS), Regional Greenhouse Gas Initiative (RGGI).

- 2) Residential (1- to 4- Family Homes) GJGNY residential financing and free or reduced-cost comprehensive home energy audits for existing 1- to 4- family homes are available to most New York homeowners through NYSERDA's Home Performance with ENERGY STAR® (HPwES) Program. HPwES relies on a "whole house" approach using building science to identify opportunities to improve energy efficiency and install cost-effective measures to reduce energy consumption. Participating Contractors perform a comprehensive home energy assessment, also referred to as an energy audit, which includes health and safety testing both prior to performing work and after work is complete, thus ensuring a safe and healthy environment after the installation of energy efficiency improvements. Participating New York homeowners are eligible to receive a homeowner cash-back incentive (High Efficiency Measures Incentive, or HEMI) in combination with available utility incentives and may finance the balance of the project through a GJGNY residential energy loan. Loan underwriting criteria is established by NYSERDA in consultation with its Financial Advisor. Loans of up to \$25,000 are currently available to finance approved energy efficiency projects with an interest rate of 3.99% for repayment by check or 3.49% for those Borrowers that opt to repay their residential energy loan via automatic (ACH) payments. Loan repayment terms of 5, 10 or 15 years are available, but the term of the loan may not exceed the weighted useful life of the financed measures. Audits and energy efficiency installation services for HPwES are conducted by BPI-Accredited contractors that have entered into a Contractor Partnership Agreement with NYSERDA.
- 3) Multifamily GJGNY co-financing of audits are offered through NYSERDA's existing multifamily performance program (MPP). MPP is a comprehensive, "one-stop program" for all 5+ unit residential buildings that serves market-rate and low-to moderate- income projects, and relies on a network of energy service contractors who have demonstrated their ability to provide building performance services to multifamily buildings (MPP Partners). MPP Partners assist participants with project implementation by completing the initial energy audits(s) and developing an Energy Reduction Plans (ERP) to reach a source energy use reduction target of less 15%. NYSERDA will provide financing though Participating Lenders, where the Lender conducts an evaluation of creditworthiness based upon its own individual underwriting criteria. Approved projects may access financing though NYSERDA, which will provide up to 50% of the total loan principal up to \$5,000 per unit, not to exceed \$500,000, at 0% interest. The Lender provides the balance of the loan principal at their market interest rate, and the Borrower receives a blended interest rate based upon the two funding streams. The MPP Partner is also responsible for verifying that the energy-related work scope is installed in compliance with GJGNY requirements.
- 4) <u>Small Business/ Not-For-Profits</u> Energy audits and GJGNY financing are available for buildings used or occupied by a small businesses⁸ or not-for-profits⁹ (NFPs).¹⁰ Free audits are available to small businesses and NFPs with an average electric demand of 100kW or less and 10

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⁷ An Energy Reduction Plan (ERP) identifies the set of cost-effective energy-related improvements to be installed, and provides information necessary to guide installation of those measures. The ERP includes a detailed description of the proposed work scope, with the associated costs, projected energy saving, an outline for how costs will be financed, and a proposed schedule for construction.

⁸ Small businesses are defined as businesses with 100 employees or less

⁹ The Act defines small business and not-for-profits eligible participants as building owner, lessee, or manager of a structure (not a unit within a structure), and who has the legal authority to contract for the provision of qualified energy efficiency services

¹⁰ Financing is available for small businesses and not-for-profits that own, lease, or manage the building that their business or organization occupies. For those small businesses and not-for-profits that do not occupy an entire building financing may be available if they are able to obtain permission from the owner of their building to make energy efficiency improvements to the space

employees or less. A limited amount of Federal American Recovery and Reinvestment Act (ARRA) funds have been secured to provide free audits for small businesses and not-for-profits with an average electric demand of 100kW or less and over 10 employees. Financing will be available for eligible small businesses and not-for-profits with qualified energy audits from either NYSERDA's FlexTech Audit Program, utility service providers or qualified energy auditors, as defined by the Program. NYSERDA's Business Partners may also begin to offer qualified energy audits to small business and not-for-profits. NYSERDA will share 50% of the loan principal, up to \$50,000 per applicant, at 0% interest. The participating lender will provide the remainder of the loan principal at market rate. NYSERDA is exploring methods, including the use of Project Expeditors, to provide assistance to small business and not-for-profit customers to encourage implementation of energy audit recommendations. GJGNY funds can be used statewide including service territories outside of the current SBC program areas.

- 5) Financing The GJGNY legislation calls for the development of innovative financing mechanisms for energy efficiency projects. Under GJGNY, Revolving Loan Funds have been established. Owners of 1-4 family homes participating in the Home Performance with ENERGY STAR program may receive an unsecured direct consumer loan through NYSERDA. Loans for multifamily and small business/ not-for-profit properties are originated by lenders chosen by the customer. NYSERDA will provide 50% of the principal of the load, up to \$50,000, at 0% interest and the lender will provide the remaining portion of the principal at market rate. Multifamily projects must participate in NYSERDA's Multifamily Performance Program to be eligible for GJGNY financing. Similarly, small businesses and not-for-profits must obtain qualified energy audits through NYSERDA's Flex Tech program, a utility service provider, or a qualified energy auditor to be eligible for financing. Other financing options may become available such as secured direct customer loans (PowerSaver loan), On-Bill Recovery¹¹, and Property Assessed Clean Energy (PACE), however not all options will be available to all customers.
- 6) Marketing Overall GJGNY program marketing is developed and deployed to support the GJGNY outreach efforts and the GJGNY program components, including Home Performance, Small Business, Multifamily, and the Community Based Organizations. Marketing to include: print, presentations, social media, on-line, public relations, events, and videos (contractor recruitment).
- 7) Outreach In addition to statewide marketing, GJGNY is designed to deliver outreach services in targeted communities through a network of CBOs. The CBOs encourage participation in energy efficiency programs, facilitate awareness of workforce training opportunities available through GJGNY, and assist with enrollment in those efforts. In this effort, several CBOs are also implementing Aggregation Pilots where free or reduced cost audit services are available to the community through contactors that live and work in the community, helping to creating jobs and local economic development. Outreach, marketing, and education target residents, small businesses, not-for-profit organization, multifamily building owners, and potential workforce participants.

¹¹ Note: On-Bill Recovery has been authorized and will become available soon.

2.1.1 Program Budget

The total proposed GJGNY budget is presented in Table 3 below.

Table 3. GJGNY Total Proposed Budget

Program Component	Budget
Workforce Development	\$8,000,000
Residential ¹	\$39,288,533
Multifamily ¹	\$15,692,550
Small Business/ Not-For-Profit ¹	\$23,674,917
Outreach & Marketing	\$10,000,000
Program Administration	\$7,840,000
Program Evaluation	\$5,600,000
NY Cost Recovery Fee	\$1,904,000
GJGNY TOTAL BUDGET	\$112,000,000

¹ May include use of funds for interim loan financing, credit enhancement or reserves for loans securitized and sold to leverage additional funds from capital market investor, and support for overall financing subsidies to cover difference between borrower loan interest rates and costs of financing.

SOURCE: Green Jobs – Green New York Annual Report 2010

The budgets for each program component presented above are aligned with the overall GJGNY goals. To this end, a two-pronged/three-year approach, including a Statewide effort to build awareness combined with targeted community outreach helps to ensure the program component budgets are aligned to deliver GJGNY goals. The overarching Outreach and Marketing efforts will build awareness of the Program and target small businesses, not-for-profit organizations (NFPs), as well as residential and multifamily building owners across New York State. At a minimum, 14 Constituency Based-Organizations (CBOs) will be delivering outreach, marketing, and education services through a coordinated approach that targets priority communities throughout the State. Early action on outreach and marketing activities will support the continued growth of a strong foundation of accredited contractors while targeting additional contractors based upon an assessment of regional coverage and the needs of the expanded GJGNY initiative. Communication through networks of alliances, partnerships, and organizations supporting job placement will help develop the pipeline of workers prepared for green collar jobs. In addition, research will be conducted to better understand audience motivators and drivers; to determine the most effective messages; and to determine the challenges, opportunities, and barriers associated with accomplishing GJGNY objectives.

2.1.2 Additional Funding Sources

New York State has seen significant public investment in the areas of energy efficiency retrofits, renewable energy resources, and energy efficiency and renewable energy workforce training and development. Investment in New York's energy sector includes resources such as the System Benefits Charge (SBC), Energy Efficiency Portfolio Standard (EEPS), Regional Greenhouse Gas Initiative (RGGI), Renewable Portfolio Standard (RPS), and federal sources such as the Weatherization Assistance Program (WAP), Department of Energy (DOE) Grant Awards, and the American Recovery & Reinvestment Act (ARRA).

Under the American Recovery and Reinvestment Act (ARRA) of 2009 (Recovery Act), NYSERDA was awarded a \$40,000,000 grant through the Department of Energy's (DOE) BetterBuildings Program to leverage the funding allocated though the GJGNY Act and encourage a ramp-up energy efficiency project production through the creation of strategic partnerships to promote innovative financing mechanisms and the expansion of energy-related marketing, outreach, education and workforce development activities. Funding though the Recovery Act will support residential, multifamily, and small business/ not-for-profit sectors, and allows NYSERDA to collaborate with municipal and regional stakeholders to explore

alternative approaches to driving awareness of energy related issues and ultimately converting that interest into action through energy efficiency improvements. A primary goal of the BetterBuildings Program is to identify innovative best practices that are scalable and can serve as a model for the rest of the state and the nation.

NYSERDA also coordinates with the NYS Housing and Community Renewal's (NYSHCR) Weatherization Assistance Program (WAP), NYC Housing Preservation and Development (HPD), the U.S. Department of Housing and Urban Development (HUD), NYS DOL and others to leverage additional funding, as appropriate.

Under the U.S. Department of Housing and Urban Development's (HUD's) new PowerSaver Loan Pilot Program, energy efficiency improvement loans will be made available under a federally insured program administered by the federal Housing Administration (FHA). Energy Finance Solutions, in partnership with NYSERDA, was one of a limited number of organizations nationally that has been approved to provide loans in the PowerSaver Program. NYSERDA will integrate PowerSaver Loans into the Green Jobs-Green New York program as an additional financing optional available to consumers.

Under the 2-year pilot program, FHA insures selected private lenders against the risk of default for up to 90% of any single loan made for energy efficiency improvements in single-family residential homes. The goals of the program are: to facilitate the testing and scaling of a mainstream financing product for home energy efficiency improvements that includes liquidity options for lenders, resulting in more affordable and widely available loans than are currently available; and establish a robust set of data on home energy efficiency improvements and their impact for driving development and expansion of mainstream mortgage products to support residential energy efficiency improvements.

The loans are available for single-family, owner-occupied homes and may be used to finance a published list of energy saving and renewable energy improvements, with a maximum loan amount of \$25,000 and a maximum term of 15 years. Loans may be issued on an unsecured basis if under \$7,500, but must be secured by a mortgage with not less than a second lien if over \$7,500. Loan underwriting is performed by the lender and must conform to HUD's underwriting standards - a minimum FICO score of 660, a maximum debt-to-income ratio of 45%, and a maximum amount of debt, including the proposed loan, of not more than 100% of the value of the residence.

NYSERDA partnered with Wisconsin Energy Conservation Corporation, d/b/a Energy Finance Solutions (EFS), a not-for-profit organization with experience in providing energy efficiency improvement loans for Fannie Mae, to submit an Expression of Interest in response to the Notice. EFS currently originates unsecured energy efficiency improvement loans being offered through the Green Jobs-Green New York program. EFS and NYSERDA propose to offer PowerSaver loans on a statewide basis as secured mortgage loans as a companion to the unsecured loans currently being offered; although HUD's regulations allow PowerSaver loans to be issued on an unsecured basis if below \$7,500, NYSERDA anticipates these loans will only be offered on a secured basis to avoid confusion for participating consumers. EFS will originate the loans, which will then be funded by NYSERDA using the GJGNY and RGGI funds, and the loans will be serviced by NYSERDA third-party Master Loan Servicer, Concord Servicing Corporation.

As is currently contemplated under the Green Jobs-Green New York program, once aggregated to a sufficient scale (\$25 million), NYSERDA will issue bonds secured by repayments from the loans issued, allowing capital to be returned to the program and used to fund additional loans. NYSERDA intends to use the limited Qualified Energy Conservation Bond (QECB) volume cap authorization provided to the State to issue QECB bonds, which are taxable bonds where the U.S. Treasury reimburses approximately 70% of the interest cost on the bonds. The use of this bonding structure will allow access to private capital to provide low interest loans to consumers to finance energy efficiency improvements. Currently, with the support of the QECB bonding authority, the program offers unsecured loans at an interest rate of

3.99% (3.49% if the consumer repays through automatic payment). NYSERDA and EFS hope to offer the PowerSaver loan at a lower rate (3.49%/ 2.99%) with the use of FHA incentives of \$5 million. NYSERDA and EFS are working through several issues that will need to be resolved in order to implement the program.

Leveraging resources is fundamental to the State's energy sector strategy and is accomplished through the effective use of public investment in job creation, workforce development and pathways out of poverty. Over \$1.216B is leveraged in resources accounted across two categories: 1) Jobs (Labor Demand) – investments to create and retain jobs in Renewable Energy (RE) and Energy Efficiency (EE) industries; and 2) Workforce Development (Labor Supply) – investments to provide workers with the requisite knowledge, skills and abilities to achieve productivity in those jobs. ¹²

- 1. Jobs Investments in RE and EE represent about \$1.138B in leveraged resources, including:
 - a. \$98M RPS collections in 2009 (PSC RPS Order, 9/24/09)
 - b. \$172M EEPS collections in 2009 (PSC EEPS Order, 6/23/08)
 - c. \$70M GJGNY
 - d. \$500M WAP
 - e. \$123M SEP (under ARRA funding); and
 - f. \$175M EECBG
- 2. Workforce Development Investments in RE and EE (labor supply) represents about \$77.7M in leveraged resources, including:
 - a. \$44.5M in unskilled unemployed worker training (Pathways) by OTDA and NYSDOL through the following RFPs- Emerging and Transitional Worker Training (\$15M), Disconnected Youth (\$5M), Career Pathways(\$17.5M) and Green Jobs Training (\$7M)
 - b. \$7.7M in regional sector initiatives through NYSDOL Regional Economic Transformation Strategies;
 - c. \$6.6M Workforce Development Training (PSC EEPS Order, 6/23/08)
 - d. \$18.9M Workforce Training under SBC/GJGNY

2.2 Market Assessment

Providing a detailed assessment of the markets targeted by NYSERDA's GJGNY program is outside the scope of this logic model report. However, interested readers should refer to the separate market assessment reports that have been developed or are underway for NYSERDA's Workforce Development, Home Performance with ENERGY STAR, and Multifamily Performance Programs, and relevant NYSDOL reports for more detailed information. The remainder of this section provides a brief summary of findings from a recent Brand | Cool Secondary Research Report. The report was completed in preparation for qualitative and quantitative research into audience awareness and attitudes towards the Green Jobs – Green New York program and companion programs. The report itself includes a secondary review of research on the awareness and attitudes of homeowners as they relate to trends in "green" or environmentally responsible behavior in general. ¹³

The report found in general, Americans are becoming more aware of the need to be more environmentally conscious, and indicate a desire to make sustainable choices. The report references a 2010 Statewide

¹² New York State Department of Labor, Part II – Technical Proposal, State Energy Sector Partnership (SESP) and Training Grant Solicitation for Grant Application (SGA/DFA PY-08-20)

¹³ Brand Cool Marketing, Green Jobs - Green New York Secondary Research Report, March 15, 2011

Market Research Report commissioned by the NYS Public Service Commission, that found 19% of New Yorkers were "true believers" who had already taken action to save energy and were highly motivated to continue. The report found another 49% fall into a number of groups classified as follows: groups made up of those who are "affluent and apathetic" (21%), those who do not like wasting resources ("wastehaters" – 15%) and those who are concerned but unable to take action ("care but can't" – 13%). The report characterized about a third of the population in New York as hard to reach: "tuned out" (17%) and not emotionally involved or physically connected ("cold fish" – 16%). The report concluded that the most receptive audiences to increasing homeowner participation in home energy improvements will be middle-aged and older individuals with a higher education and progressive political leanings, who have older homes and no children at home.

According to the report, the lack of information to make green decisions may be the primary reason why only 3% of households today participate in green programs. Those participating in green programs today are distributed across income levels, with 28% earning less than \$50K, 42% earning \$50K, and 30% earning more than \$100K. According to the report, consumers tend to focus on immediate costs, and not future cost, particularly in recessionary and inflationary times. This short-term focus often impacts green, energy efficient choices. In major appliance purchases, for example, 90% of consumers polled said that energy efficiency was either the most or among the most significant factors affecting their selection. The second most significant factor in purchasing appliances was the use of government and utility incentives. The report found that the government programs are successfully attracting participants to programs, such as ENERGY STAR®, by combining messages for "green" and "save money". Among the households polled, 8% had taken advantage of the ENERGY STAR® Appliance Rebate Program, while another 21% were planning to participate by the end of 2010. The report also found that programs that used the following marketing messages were better able to motivate people into action: 1) positive tones ("let's live resourcefully"), 2) gave people an excuse for not recognizing the problem (many of us don't realize that we are wasting energy on our homes), 3) gave them concrete examples of activities to take and the cost associated with not taking them, and 4) reflected current economic conditions and the value of thrift and the "new frugality".

In terms of financing, the report found, homeowners are more apt to relocate in the near term and are unlikely to invest in home improvements if their loan term will outlast their residency in the home. To address this problem, some communities offer on-bill loans, loans that stay with the house, and not the homeowner. Since the structure of On-Bill Recovery performs as a lien on a property rather than a loan for an individual, the report supports on-bill payment legislation as a viable means to remove cost obstacles for homeowners. On August 4, 2011, Governor Cuomo signed The Power NY Act of 2011 into law, which provides the framework for NYSERDA, acting as Program Administrator, to make On-Bill Recovery available to eligible New Yorkers within 300 days, in addition to increasing the residential and small business/ not-for-profit loan caps to \$25,000 and \$50,000, respectively. As a result, Green Jobs – Green New York will face a double lift in terms of convincing people not just to change behaviors, but to spend money in order to do so.

2.3 Other Potentially Relevant Programs

In addition to GJGNY, there are a number of other potentially relevant and complementary programs being implemented or soon-to-be implemented in New York, including other NYSERDA programs and New York area utility programs that are summarized below. NYSERDA will continue to work with other program administrators, including utility service providers, to address coordination issues and seek to

¹⁴ Benenson Strategy Group and Larkspur Energy, GMMB, *Statewide Market Research Report for New York State Public Service Commission*, July 14, 2011.

minimize confusion where multiple incentive opportunities are available to customers. These programs are also included in Section 0- Program Inputs and Potential External Influences of this report and are identified in

Table 4 – Market Barriers, Table 6– Program Inputs, Table 7. - Potential External Influences, and the program logic diagram (Figure 1) as factors with the potential to impact (help or hinder) achievement of GJGNY goals.

2.3.1 NYSERDA Programs

Where possible, GJGNY initiatives will be delivered through existing NYSERDA programs. NYSERDA has several well-established programs in the marketplace that continue to evolve and expand. These programs will help achieve significant progress toward meeting GJGNY goals. NYSERDA programs that impact achievements of GJGNY goals include but are not limited to: the EEPS Workforce Development Program, Home Performance with ENERGY STAR Program (HPwES), Assisted Home Performance with ENERGY STAR® (AHPwES) (low-income), EmPower New York (low-income), Multifamily Performance Program (MPP), Existing Facilities Program (EFP), FlexTech Program, and the Energy \$mart Communities Program 15. NYSERDA's Business Partners Program may impact GJGNY goals in the future.

2.3.2 New York Area Utility Programs

New York area utility programs also potentially impact achievements of NYSERDA's GJGNY goals. NYSERDA is coordinating with investor-owned utilities, the Long Island Power Authority, the New York Power Authority, and municipal utilities to ensure their customers participating in GJGNY are also able to take advantage of non-NYSERDA program rebates and incentives as appropriate, and to support expanded marketing and promotion of the program. NYSERDA is coordinating with Utility program administrators to address issues and identify the potential for overlap with other energy efficiency programs. NYSERDA is developing systems to transfer pertinent project and customer information to other Program Administrators in an effort to minimize confusion where multiple opportunities are available to customers. To this end, New York State utility programs that have the potential to impact achievements of GJGNY goals include, but are not limited to:

Utility Small Commercial Audit Programs

In 2010, most investor-owned electric and gas utilities in New York State were authorized to operate small commercial audit programs. With approximately 50 municipal utilities and rural electric cooperatives in New York, many operate, or have been authorized to operate individual energy efficiency programs. There are several membership organizations that service municipal utilities and cooperatives.

Residential NY Utility Programs

Currently residential programs, including HPwES, are administered by NYSWERDA across investor owned and municipal utilities. The Long Island Power Authority administers HPwES for its customers. Some municipal and investor-owned utilities also offer energy efficiency rebate programs to their customers. NYSERDA will coordinate with the Utility program administrators to minimize the duplication of services or incentives across programs, to provide access to free or reduced-cost audits and GJGNY financing, and to minimize confusion of customers and contractors. In instances where a

¹⁵ Energy \$mart Communities offers local community-based access to NYSERDA's programs through ten Community Coordinators strategically located throughout the State.

¹⁶ New York Utilities Include: Central Hudson Gas and Electric, ConEd, Long Island Power Authority, National Fuel, National Grid, NYSEG, Orange and Rockland Utilities, RG&E and energy services companies (ESCOs).

¹⁷ Note: The 1-4 family residential initiative is coordinating efforts between other program administrators to help minimize confusion in the marketplace; however NYSERDA's HPwES is not currently directing leads to other programs.

customer accesses program outside of NYSERDA, HPwES allows for the balance of energy efficiency measures to be financed through the GJGNY residential energy loan.

Multifamily NY Utility Program

Con Edison and National Grid, through their Energy Wise Program, each operate multifamily audit and retrofit programs for buildings with 5-75 units. Larger multifamily buildings are not eligible to participate in utility-run programs. Utility program audits do not qualify a customer to participate in the GJGNY Multifamily Energy Efficiency Financing Program, but customers that have received an audit from a utility program are still eligible to participate in NYSERDA's Multifamily Performance Program and receive incentives to conduct an audit and develop an Energy Reduction Plan that will qualify then to receive GJGNY financing.

2.3.3 New York State Workforce Development Initiatives

NYSERDA partners with a number of workforce and development training centers (through training partnership agreements) in order to coordinate training programs with other federally funded programs and ,where possible, maximize impact for participants interested in green jobs careers. For example, since 2009, NYSHCR has administered \$500 million in WAP funding which is due to expire in March 2012. Three weatherization training centers, including the NYS Weatherization Directors Association (NYSWDA), Association for Energy Affordability (AEA) in the Bronx, and New Buffalo Impact in Buffalo have delivered weatherization training to WAP contractors in New York. NYSERDA has coordinated training activities with the weatherization training centers to serve the regional needs of the green jobs industry, and will continue to do so under GJGNY. Labor Union Training Centers (IBEW, SEIU Local 32BJ, IUOE Local 94 Building Operators, and LIUNA) have expanded energy efficiency and renewable energy training in coordination with NYSERDA, as has the Workforce Development Institute (WDI), as the designee of AFL/CIO and the Building and Construction Trades.

NYSERDA continues to work with NYSDOL to leverage State and federal funds to develop training opportunities for the unemployed and new and emerging workers through the NYSDOL One-Stop Career Centers and the State's Workforce Investment Boards. The NYSDOL One-Stop Career Centers help job seekers to identify career goals and to locate appropriate training and certificate programs to meet these goals. NYSERDA continues to collaborate with the NYSDOL to establish a comprehensive workforce development program for New York state that supports existing and planned energy efficiency programs, and further leverages the "pathways out of poverty" program to engage disadvantaged communities. NYSDOL funding can provide training to new and emerging workers to teach skills necessary for entrylevel employment, while NYSERDA funding can provide more focused and specialized training related to energy efficiency. In addition, NYSDOL administers the Emerging and Transitional Worker Training grants through the state's 79 regional One-Stop-Career centers. This program provides occupational skills development, training, job-matching, and other labor-related services increasingly aligned with green jobs training coordinated through NYSERDA-funded training providers. The federal Workforce Investment Act Title 1B funds and Wagner-Peyser funds, when properly aligned with NYSERDA funds, also helps to leverage the Workforce New York One-Stop system and can significantly contribute to the achievement of GJGNY goals.

2.3.4 NYSDOL Labor Market Intelligence Research

The New York State Department of Labor was awarded \$1,112,207 in American Recovery & Reinvestment Act funds under USDOL's Labor Market Intelligence Solicitation for Grant Applications (SGA/DFA P- 08-17) to measure employer demand for green jobs against the capacity of existing educational and training resources to address specific energy related training needs across New York State. The NYSDOL will collaborate with the New York City Labor Market Information Service (NYCLMIS) at the City University of New York (CUNY) Graduate Center, the Energy and Environmental Technology Application Center (E2TAC) at the State University of New York (SUNY) at Albany's College of Nanoscale Science and Engineering, the Advanced Energy Research Technology Center at Stony Brook University, and SUNY's Office of Business and Industry Relations. NYSDOL will collaborate with these entities to estimate the number of green jobs and to identify the new, emerging and enhanced skills needed to succeed in today's rapidly growing green jobs market. NYSDOL will survey about 20,000 firms to collect this data. More in-depth research will seek to understand the specific skills employers need, and identify existing education and training resources to fill those needs. While the grant runs through May 2011, NYSDOL conducted employer surveys in October 2010 and plans to release preliminary findings by early winter 2011. The NYSDOL data will be used to support the training inventory, needs assessment, and curriculum updates to be implemented by the contractor awarded under NYSERDA's RFP 2034 - GJGNY Training Inventory, Assessment, and Curriculum Updates. The breadth of information in the NYSDOL report will provide a comprehensive inventory of state-wide programs and generalized needs that NYSERDA can leverage to complete a more detailed training needs assessment and skills gap analysis planned in support of GJGNY.

Section 3: **KEY ELEMENTS SUMMARY**

Based on a review of relevant NYSERDA documents, some key elements of GJGNY have been identified and summarized below.

3.1 Ultimate Goals:

GJGNY is a statewide initiative to promote energy efficiency, reduce energy consumption and costs, reduce greenhouse gas emissions, and create green jobs. GJGNY provides access to energy audits, installation services, low-interest financing and pathways to training for various green-collar careers. GJGNY supports sustainable community development and creates opportunities for green jobs. The GJGNY initiative is intended to support both NYSERDA's residential (including multifamily) and small business/ not-for-profit program portfolios.

As defined in the GJGNY legislation, the overall GJGNY goals include:

- 1) Promoting energy efficiency, energy conservation and the installation of clean energy technologies;
- 2) Reducing energy consumption and energy costs;
- 3) Reducing greenhouse gas emission;
- 4) Supporting sustainable community development;
- 5) Creating green jobs opportunities, including opportunities for new entrants into the state's workforce, the long-term unemployed and disadvantaged workers; and
- 6) Using innovative financing mechanisms to finance energy efficiency improvements through energy cost savings.

Each GJGNY component represents specific and individual goals. The initial \$112 million budget will support approximately 50,700¹⁸ audits, while allowing approximately 4,000 loans to be issued. These loans will then be sold to replenish the revolving loan fund, enabling additional loans to be made.¹⁹ Program success will be measured by a number of indicators, identified in Section 5: Table 8 and Table 9, and include but are not limited to: market awareness of the GJGNY initiative; number of targeted neighborhoods and communities reached; number of audit leads; audits conducted, and funded by target sector; and the number of energy efficiency retrofits and loans, accredited contractors, and number of trainings and certifications. To this end, the specific goals for each of the individual components of GJGNY are included below:

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¹⁸ Based upon 46,000 in RES, 4,200 SB/NFP and 500 MF buildings, per NYSERDA program staff.

¹⁹ NYSERDA, Green Jobs Green NY (GJGNY) Annual Report, October 2010.

3.1.1 Residential (1- to 4- Family Homes) Goals under GJGNY

Currently, 302 BPI-Accredited Contractors participate through NYSERDA's HPwES. One hundred seventy-seven are active contractors that have completed at least one project in the past 12 months. Twenty-Nine contractors completed 70% of the work in 2010. A goal of the residential initiative is to increase the production of contractors already participating in the program, while growing the number of contractors in underserved areas of the State.²⁰ Other residential GJGNY goals include:

Residential 1-to 4- Family Homes	Goals	
Comprehensive Home Energy Audits	46,000	
Completed Projects	15,000 HP Jobs	
Loans Closed (based upon \$8,000 average for \$25M QECB)	3,125 by mid-2012	
Anticipated Energy Savings 688 kWh/project, 31 MMBtu/project		
Anticipated Dollar Savings \$675 per year/project		
Source: NYSERDA, Green Jobs – Green New York Annual Report, October 2010		
NYSERDA, Green Jobs - Green New York Single Family (1-4) Homes Operating Plan, October 28, 2010.		

3.1.2 Multifamily GJGNY Goals

The initial phase of the multifamily component of GJGNY is expected to support delivery of energy audits and Energy Reduction Plans for approximately 50,000 residential dwelling units in 500 buildings. The projected energy savings metrics for the GJGNY Program, such as kW, kWh, MMBtu and their carbon equivalents, are currently under development. Based upon Multifamily Performance Program procedures, GJGNY projects that also participate in MPP to reduce their building's total energy use by 15% would be expected to realize a per dwelling unit annual savings of approximately 460 kWh and 13 MMBtu. The GJGNY Multifamily program area anticipated goals include²¹:

GJGNY Multifamily	Goals	
Comprehensive Audits	50,000 units/~500 buildings	
Completed Projects	40,000 units/~400 buildings	
Loans Closed (based upon \$250,000 average loan and \$11,142,550 budget)	44	
Anticipated Energy Savings 460 kWh per year/unit; 13mmBtu per year/unit		
Anticipated Dollar Savings \$87 per year/unit; \$206 per year/unit		
Source: NYSERDA, Green Jobs – Green New York Annual Report, October 2010		
NYSERDA, Green Jobs - Green New York Multifamily Operating Plan, May 26, 2010.		

²⁰ GJGNY HPwES Staff Comments

²¹ NYSERDA, Green Jobs – Green New York Multifamily Operating Plan, May 26, 2010.

3.1.3 Small Business/ Not-For-Profit GJGNY Goals

The small business/ not-for-profit GJGNY program is expected to provide 4,200 Commercial Energy Audits over three years, and to issue 1,000 loans for these customers to implement qualified energy services. Implementation of efficiency measures identified in the audits through means other than the loans issued through the program are also expected, and when available, will be reported towards the overall success of GJGNY. A typical retrofit project is expected to yield annual energy cost savings of \$5,200, and energy savings of approximately 18,000 kWh and 160 MMBTU per project.²²

GJGNY Small Business/ NFP	Three Year Goals	
Energy Audits	4,200	
Loans	1,000	
Source: NYSERDA, Green Jobs – Green New York Operating Plan for Small Business/Not-for-Profits, October 28, 2010.		

3.1.4 Workforce Development GJGNY Goals

The initial phase of the workforce development initiatives will support the workforce demands of programs funded under GJGNY. Qualitative goals include building relationship between NYSDOL One-Stop Career Centers, business service representatives, regional CBOs and potential employers to facilitate hiring, developing training programs that successfully serve as an "on-ramp" for new workers entering green jobs, and formalizing career pathways for entry-level workers and experienced workers in the industry. Anticipated goals for Workforce Development initiatives include:

GJGNY Workforce Development	Goals	
Worker Readiness/Job Readiness Training Providers	5	
National Certifications (e.g. AEE, BPI, NATE, NORA)	500	
OJT/Internships	380	
Workers Trained (Technical Training and Workshops)	1200 per year	
Establish Lab Pressure Houses for Field Training/Testing	4	
Contractor Exchange Workshops	5	
Specialty Heating Certification Development	2 new programs – (1) Oil-fired Forced Air Furnace Installation, and (2) Gas-fired Forced Air Furnace Installation	
NABCEP Solar Thermal Program Development	2 new programs - (1) Entry Level Program for Solar Thermal Careers and (2) Solar Thermal Technical Sales Program	
Source: GJGNY Workforce Development Operating Plan, March 2010, and the NYSERDA, Green Jobs – Green New York		

Source: GJGNY Workforce Development Operating Plan, March 2010, and the NYSERDA, Green Jobs – Green New York Annual Report, October 2010

²² NYSERDA, Green Jobs – Green New York Small Business/ Not-For-Profit Operating Plan, October 28, 2010.

3.2 Market Barriers/Issues GJGNY Attempts to Address – Challenges to Program Implementation ("the Problem"):

The GJGNY program requires NYSERDA to focus on expanding the opportunities to deliver energy efficiency to residential homes, multifamily and small businesses/not-for-profits across the State. Markets are typically defined by the products, services, and events that meet a specific need for a group of consumers. The GJGNY initiative faces many barriers that exist throughout many of the energy efficiency markets including workforce development markets, and residential, multifamily, and small businesses/not-for-profit markets. GJGNY market barriers include but are not limited to:

- Lack of awareness of best practices in energy efficiency
- Competing priorities and needs for capital (up-front cost)
- Confusion about options and available programs (too complicated)
- Skepticism or lack of knowledge regarding programs and energy efficient benefits Other barriers as identified in

Table 4, below

Barriers associated with the residential, multifamily, small business/ not-for-profit and workforce development sectors can be broken down into three general categories: barriers affecting the supply side, mid-market (infrastructure), and demand side market actors. Supply-side and mid-market (infrastructure) barriers include business practices and policies that deter the development or delivery of energy efficient products and services, or indicate an insufficient availability of, or commitment to developing such energy efficient products and services. Demand-side barriers primarily include competing needs for capital, performance uncertainties, information or search costs, and barriers that deter customer demand for products or services, such as a lack of awareness and education regarding energy efficiency options and benefits. Barriers the GJGNY initiative attempts to directly address are identified with an asterisk (*) in the table below.

Table 4 lists barriers the GJGNY program attempts to address, as well as challenges to program implementation. Barriers are categorized by market actor segment (residential, multifamily, small businesses/not-for-profit and workforce development and not ordered by priority). Where appropriate, individual market sector barriers have been grouped into specific program components. Barriers the GJGNY initiative attempts to directly address are identified with an asterisk (*) in the table below.

Table 4. GJGNY Market Barriers (Residential, Multifamily, Small Businesses/Not-For-Profit and Workforce Development Sectors) – The asterisk (*) notes barriers GJGNY attempts to directly address

Market Area	Barriers	Market Actors
Supply Side and Mid-	Supply Side and Mid-Market/Infrastructure Barriers Present in all GJGNY Sectors (although to varying degrees):	Vendors, Manufacturers,
Market / Infrastructure	 Limited availability of stocked energy efficient equipment, and energy efficient products and services at reasonable prices (including curriculum and training tools) 	Distributors, Suppliers of energy efficient
	 Lack of information and awareness among upstream market actors regarding the benefits and business opportunities for energy efficient homes and businesses, efficient equipment and load management products, and related services 	equipment, Codes, Standards and Policy Makers
	 Perceived lack of demand for energy efficient equipment and other energy efficient products and services 	Regulators
	 Lack of experience with new energy efficient products, services and technologies and high efficiency equipment 	Utilities and load serving entities
	 Potential confusion of roles and responsibilities due to increased variety of efficiency assistance providers and other resources that support efforts to address global warming and carbon footprint issues 	State Universities, Community Colleges,
	Multifamily Sector:	Trade Unions,
	 Perceptions of a lack of demand for energy efficiency and new energy technologies in multifamily buildings 	and third-party training organizations
	 Lack of standards for advanced meters and common connectivity environment for broad marker development of advanced metering and real time pricing products and services 	
	SB/NFP Sector:	
	Contractors often ignore small jobs found in the SB/NFP sector* WFD Sector:	
	Cost of training – tuition expense is high for the disadvantaged worker targeted by GJGNY*	
	 Businesses and employers do not have sufficient project demand to require hiring, and little interest in hiring less experienced individuals* 	
	 Lack of basic skills training to prepare workers for technical training* 	
	Lack of accessibility to training programs*	
	 Difficult for training facilities to expand into new areas without sufficient demand and issues related to developing sustainable training models that can exist when NYSERDA and other state and federal incentives disappear* 	
	Limited funds for equipment necessary for hands-on training*	
	 Lack of field training to help students get to the next step beyond field training* 	
	Consistency in curriculum	
	Financing:	
	High upfront cost of making energy efficiency improvements*	
	Limited access to financing for this sector*	

Market Area	Barriers	Market Actors
Market Infrastructure / policy	Mid-Market Barriers Present in all GJGNY Sectors (although to varying degrees): • Information or search costs. Specifically, the lack of expertise	Contractors, providers, engineers,
	among equipment sales staff and installers who are unable to provide the analysis required by customers when choosing a higher efficiency option and installing equipment	equipment suppliers and others capable of providing
	 Performance uncertainty. Limited experience with energy efficient, demand response, load management, and energy monitoring equipment 	accurate information in an energy audit
	 Uncertainty about profit potential for providing energy efficiency services 	Builders, Contractors,
	 Limited service availability. Subcontractors have limited training and experience necessary energy efficient equipment installation, application of specific building techniques and designing for optimum energy performance* 	retailers, sales staff, and installation contractors
	 Limited product availability. Limited availability or long waiting times for energy efficient equipment and products to specifically meet the needs of the customer 	Sub- contractors and building trades
	Undervaluing energy efficiency and sustainable practices	HERS providers
	 Contractors unwilling to learn and conduct services outside of their specific trade 	HERS raters
	Lack of knowledge and access to information about market prices,	Teachers and teachers unions
	trends, and market volatility needed to participate in dynamic pricing, wholesale bidding and other load management options	State Universities,
	 Lack of energy efficiency training opportunities available in local communities* 	Community Colleges,
	 Competing priorities for the allocation of resources by firms that sell, install or support energy efficiency; or demand response technologies and services 	Trade Unions, and third-party training organizations
	 Concern from owners regarding ability to obtain a return on their investment (ROI) 	School districts
	 Landlords do not have an incentive to pay the upfront cost of energy efficiency improvements because they are not responsible for utility bills (split incentive issue) 	Community leadership Local
	 Business practices and internal regulations that limit the use of life- cycle cost perspectives 	Community Organizations
	 Market competition from a diverse variety of efficiency programs and organizations to accomplish their program goals 	Elected officials
	 Market lacks experience in determining the best way to create a profitable business model for long-term. 	Multifamily and Small Business
	 Lack of coordination with utilities and other program administrators and conflicting utility programs 	property managers and
	Regulatory barriers	building
	Costs associated with accreditations and adequate certifications*	owners
	Residential (1- to 4- Family Homes) Sector:	
	 Lack of Participating HPwES Contractors (including skilled specialty contractors), and competition with utility programs to recruit those that are qualified* 	
	Multifamily Sector:	

- Inability to reach the decision maker (manager or owner) during the decision making process
- Split incentives in multifamily in-unit buildings (building owners
 often do not pay the energy bills; the tenant does but has little
 incentive or ability to improve the property)
- Existing financing structure that prevents owners from taking on additional debt to finance improvements
- Lack of experience with advanced meters, real time pricing and pricing system changes and other new technologies

SB/NFP Sector:

- Inability to reach the decision maker during the decision making process
- The GJGNY Act definition for the SB/NFP sector. (1) Limits participation to the building owner, lessee, or manager of a structure (not a unit within a structure), and who has the legal authority to contract for the provision of qualified energy efficiency services. (2) Limits audit eligibility to entities with 10 employees or less
- Split incentives for rental units (building owners often do not pay the energy bills; the tenant does but has little incentive or ability to improve the property)

WFD Sector:

- Lack of regional access, limited time and income for attending training and certification exams*
- Limited experience in community colleges to incorporate green technologies into lesson plans, curriculum and classroom activities*
- Lack of effective or adequate informational, educational, and promotional information*
- Lack of energy efficiency material, tools, curriculum along with ageappropriate skills (i.e., math and science)*

Financing:

- Rules and regulations of standard financing process do not include full accounting of benefits from investment in new energy technologies or energy efficiency
- Lender uncertainty regarding how to process and account for loans (for energy efficiency and new energy technology projects) that deviate from standard practices
- Economy, uncertainty

Market Area	Barriers	Market Actors
Demand side	Demand-Side Barriers Present in all GJGNY Sectors (although to varying degrees): • Lack of awareness, knowledge and understanding of: energy efficiency and load management features, products and services; how to obtain healthy air quality and life-cycle costing* • Lack of awareness, knowledge and understanding of: billing service,	Residential, multifamily and Small Business/NFP customers, including existing and potential new owners Small Business/NFP owners and managers
	 energy competition, energy conservation, demand response, energy supply, siting of new power generation facilities and transmission lines Lack of awareness, knowledge and understanding of the profit potential, equipment necessary, and business practices required to benefit from dynamic pricing and demand management options 	
	 Lack of awareness, knowledge and understanding regarding funding and incentives (NYSERDA incentives, Utility incentives, SBC, EEPS, RPS, RGGI, ARRA) Confusion regarding which funding or incentives participants are eligible for (NYSERDA incentives, Utility incentives, SBC, EEPS, RPS, RGGI, ARRA) 	Purchasers Multifamily building owners Students
	 Competing priorities, especially priorities associated with primary business focus Information costs associated with understanding the energy- related features and associated benefits of energy efficient, demand 	Communities Building owners Tenants
	reduction technologies and other sustainable practices • Competing needs for capital creating reluctance to pay higher first or incremental cost*	Students – HVAC, contractors, electricians, plumbers, builders, and general contractors, etc
	 Lack of reliable information on energy efficient choices and how they may apply to a given building or business* Resistance to new or innovative technologies and contractors 	
	 Performance uncertainties including program benefits and savings Lack of knowledge of real-time pricing and other load management options Confusion caused by overlapping NYSERDA, community-based, 	
	local, State agencies and Utility programs* Residential (1- to 4- Family Homes) Sector: Lack of money to pay for energy efficiency investments by low- to moderate-income households *	
	 Lack of trust in residential contractors* Market inertia (homeowners don't know where to begin with energy efficiency and traditionally value the "ganite countertops" over energy efficient, cost saving measures) 	
	 Confusion between NYSERDA and utility programs* Lack of understanding of the value of the whole-house approach to energy efficiency improvements* 	
	Multifamily Sector: Tenants resistance to change Building staff resistance to change Split incentive for multifamily in-unit buildings (investments made by owners but tenants reap energy bill savings)	

• Condo and Co-op Board decision-making process

SB/NFP Sector:

- Lack of money to pay for energy efficiency investments by small businesses and not-for-profits
- Market inertia (SB/NFPs don't know where to begin with energy efficiency and fall back on old practices)
- Split incentive between SB/NFP building owner and tenants (owners
 may be unwilling to make investments in energy efficiency because
 they do not receive the benefits. Tenants may want to make energy
 efficiency improvements to lower their energy bills, but often do not
 have the authority to do so.)

WFD Sector:

- Lost opportunity costs or wages to workers while completing training*
- Language barriers (English is not the primary language)

Financing:

- Lack of awareness, knowledge and understanding regarding energy efficiency loans and financing
- Confusion between NYSERDA, Utility and other financing programs*
- Unwillingness to take on debt during uncertain economic times
- High debt-to-income ratios affecting the ability to receive financing*
- Declining home values leading to homeowners owing more than their home is worth*
- Limited ability for SB/NFPs to access financing for energy efficiency improvements*

3.3 Targeted Market Actors:

GJGNY targets residential, multifamily²³, small business, not-for-profit, workforce development, and financial sectors across the State; including homeowners, building owners, and contractors with special outreach attention to customers in economically distressed areas, and energy intensive industries and facility types. Job training and job placement services will be made available, and shall grant preference to women, minorities, and low-income individuals and populations with barriers to employment. In addition, the GJGNY program focuses on extending the accessibility of energy efficiency programs through the implementation of a Revolving Loan Fund to make the program accessible to a wider range of New York State residents and businesses. The GJGNY program intends to align its activities with existing NYSERDA programs and, where possible, with utility energy efficiency programs across the state.

Separately, the workforce development initiative of the GJGNY program targets new and existing residential and commercial energy efficient training partners across the State, including State universities, community colleges, trade unions, manufacturers, third-party training organizations, and professional and trade associations, with a priority to serve unemployed and underemployed individuals. Preference is given to programs that provide services to hard-to-serve and under-served populations that experience difficulty obtaining and maintaining employment.

²³ A multifamily property is defined in the GJGNY Act as "a multi-unit residential building with five or more dwelling units". A multifamily project may include a single multifamily structure or a group of multifamily structures.

3.4 GJGNY Implementation Approach ("Activities"):

GJGNY activities work within the targeted market segments (residential, multifamily, small business/not-for-profit) to provide energy audits, unique financing options, residential and small business/not-for-profit retrofits, and workforce development initiatives. As shown in Table 5, overall GJGNY activities can be grouped into the following categories:

- 1) Coordination and collaboration
- 2) Marketing
- 3) Outreach through CBOs,
- 4) Technical support services,
- 5) Training and education (WFD),
- 6) Financing, and
- 7) Quality control and quality assurance.

Table 5. GJGNY Activities

Coordination and Collaboration Activities

Overall GJGNY Activities:

- Work closely with NYS DOL and other organizations, including utilities and CBOs and One-Stop Career Centers, on
 efforts to establish a comprehensive GJGNY strategy for New York that supports existing and planned energy
 efficiency programs and training services
- Establish program coordination structure and strategy statewide
- Work closely with the regulated and non-regulated utilities on joint marketing and delivery strategies
- Develop alliances with Center of Influence (COIs) such as Small Business Development Centers, local governments, trade organizations, and educational centers to extend the GJGNY outreach and marketing activities
- Leverage additional funding when available (State, Federal, ARRA, DOL, RGGI, others)
- Coordinate and leverage networks, outreach and additional activities with existing and new NYSERDA, State and Local programs
- Minimize confusion where multiple incentive opportunities are available to customers
- CBOs to generate awareness at the community level and bring in leads for audits and workforce programs

Activities Related to Specific Program Components:

• Coordinate with the Long Island Power Authority (LIPA), other municipalities, and investor-owned utilities to ensure there is no duplication of services or incentives, to make free or reduced cost audits and GJGNY financing available, and to minimize confusion of customers and contractors (Residential Single Family, SB/NFP)

Marketing Activities

Overall GJGNY Activities:

- Develop a targeted media plan and align messaging and unique visual identity to support overall GJGNY program roll-out and for each priority target audience
- Develop community newspapers, internet marketing and outreach materials and special events and customer hotlines
- Maintain GJGNY website to promote the program and serve as an information delivery mechanism including social media
- Target communities in non-attainment or with high energy costs as compared to medium income
- Identify and target potential participants who are committed to implementation of energy-related improvements to ramp up to scale
- Develop a comprehensive suite of collateral materials for targeting priority audiences including a toolkit of customized materials for events and meetings
- Launch public relations campaigns throughout the State to gain media exposure in traditional and online vehicles, including monthly localized story pitches to highlight work underway
- Educate public on lessons learned (best practices) from successful participants to gain insight on successful messages, marketing mechanisms and energy efficient programs

Activities Related to Specific Program Components:

- Create a clear vision of the opportunities related to green collar careers,
- Develop multi-lingual materials to encourage participation by all eligible customers (Multifamily, WFD)

Outreach Activities through CBOs

Overall GJGNY Activities:

- Pilot potential aggregation methods (through CBOs) to increase the number of energy retrofit projects by contractors conducted under GJGNY (audits and retrofit work), particularly to building owners
- Execute extensive outreach, marketing and education through CBOs in economically-distressed communities
- Target communities in non-attainment zones or those with high energy costs as compared to medium income
- Identify and target potential participants (contractors) committed to implementation of energy-related improvements to ramp up to scale
- Educate public on lessons learned (best practices) from successful participants to gain insight on successful messages, marketing mechanisms and energy efficient programs
- Qualify potential customers for audits, financing, and workforce programs CBOs

Activities Related to Specific Program Components:

- Create a clear vision of the opportunities related to green collar careers
- Develop multi-lingual materials to encourage participation by all eligible customers (Multifamily, WFD)

Technical Support Service Activities

Overall GJGNY Activities:

- Establish requirements for auditors in all program sectors
- Establish standards for energy audits and audit fees
- Conduct energy audits consistent with existing NYSERDA programs (HPwES, MPP, FlexTech)
- Deploy customer screening tool
- Identify and pre-qualify potential customers
- Link customer leads to appropriate contractors
- Offer "Qualified Energy Efficiency Services" that increase the energy efficiency and conservation for an existing building or space

Activities Related to Specific Program Components:

- Assist customers with implementing recommended measures, identifying available incentives, and applying for financing (SB/NFP)
- Provide free or reduced cost residential energy audits through NYSERDA's HPwES program (Residential)
- Conduct scoping sessions, provide audits and develop Energy Reduction Plans (ERP) through NYSERDA's MPP program (Multifamily)
- Provide walkthrough energy audits through NYSERDA's FlexTech program (SB/NFP)
- Establish fees and sliding scales (based on income) for audits to be conducted through NYSERDA's existing programs (HPwES, MPP)

Training and Education (WFD) Activities

Overall GJGNY Activities:

- Build increased training infrastructure through the expansion of existing training centers
- Establish certification and accreditation requirements for service providers and installers
- Increase field testing capacity and certification examination protocol to help ramp up the number of participants to be trained
- Increase and incentivize apprenticeships, internships and other forms of on-the-job training to rapidly develop job skills related to the GJGNY program and increase the number of skilled workers in the energy efficiency field
- Establish standards for local hiring and pre-apprenticeship and apprenticeship and other labor-management training program participation
- Leverage existing contractor relationships by structuring direct-entry apprenticeship and internship incentives as a method to help defray staffing costs (engage existing contractors to immediately deliver services)
- Provide incentives for individuals to complete the certification process using GJGNY funds (certification may include advanced lighting controls, window replacements, insulation installation, air sealing, duct work installation, and duct sealing for heating and ventilation applications)
- Facilitate training and job placement for economically or socially disadvantaged persons within a specified community (may include women, minorities, low-income and those with barriers to employment)
- Develop and deliver commercial energy audit training aligned with national standard work specifications

Financing Activities

Overall GJGNY Activities:

- Establish cost effectiveness criteria and eligible measures for GJGNY projects in all sectors
- Establish a Revolving Loan Fund, for residential, multifamily, and small business/ not-for-profit
- Establish terms and conditions for loans or for participation in the loan program
- Establish eligibility and qualification requirements and criteria for applicants
- Establish interest rates for the residential loan program
- Review and approve customer applications, and financial incentive requests and income verification, where
 applicable
- Devise a method through which building owners could assign authority to apply for program benefits to tenants (Small Business, NFPs and Multifamily)
- Administer On-Bill Recovery (OBR), Property Assessed Clean Energy (PACE), unsecured direct consumer loans and other innovative financing mechanism (mandated by the Power NH Act)

Quality Control and Quality Assurance Activities

Overall GJGNY Activities:

- Conduct Focus Groups to research and determine program perceptions and impacts, including market needs, reaction
 to program features, and most effective motivations and messages
- Establish standards for measurement and verification of energy savings
- Conduct periodic quality assurance inspections on a sample of projects to ensure audits and contractor work meets program standards
- Review incentive requests and other submissions for accuracy, thoroughness and compliance with program guidelines, policies and procedures
- Evaluate, select and review contractor qualifications, experience, costs, and work products
- Facilitate third party quality assurance reviews, on-site visits and other follow up activities for customers who implement projects

3.5 Program Inputs and Potential External Influences

The ability of NYSERDA's GJGNY initiative to accomplish the outputs and outcomes likely to result in the program reaching its ultimate goals is dependent on the level, quality and effectiveness of the inputs that go into these efforts. There are also external influences that can help or hinder the development of anticipated outcomes. Key GJGNY inputs and potential external influences are presented in Table 6 and Table 7.

Specific outputs and outcomes anticipated for GJGNY activities are shown in the logic diagram in Section 3: below. More information on these outputs, outcomes and associated measurement indicators can be found in Table 8. and Table 9 immediately following the diagram (Section 5:).

Table 6. GJGNY Inputs

Program Inputs

GJGNY and other potential funding sources (existing SBC, EEPS, ARRA and others)

NYSERDA's program staff resources and prior experience implementing SBC and EEPS funded programs

NYSERDA's credibility and relationship with key stakeholders, policy makers and key market actors

• Staff experience implementing the **New York Energy \$mart** SM Program

Coordination with other NYSERDA programs

- Relationship between this program and other NYSERDA programs (cross coordination)
 - ► Home Performance with ENERGY STAR (HPwES)
 - Multifamily Performance Program (MPP)
 - ➤ FlexTech
 - > Business Partners (possible in future)
 - > EEPS Workforce Development
 - > Renewable Portfolio Standard (RPS) Workforce Development
 - CBO Outreach efforts

Existing awareness of NYSERDA among market actors

• See Section 2.2.2 for specific awareness levels

Expertise of trade allies and contractors

Table 7. GJGNY Potential External Influences

External Influences and Other Factors

Changes in political priorities

- Perceptions of energy and global climate change issues
- Codes and standards
- Federal energy policies including energy related tax credits and the American Recovery and Reivestment Act (ARRA) funding
- State and local action and requirements (including local energy commissions)

Weather and associated impacts on customer actions and energy bills

Broad economic conditions that affect capital investment, hiring and energy costs

- Changing economic conditions
- Energy prices and regulations (changes in fuel and energy prices and rate structures)
- Changes in utility rate structures
- Bank lending practices
- Perceptions of the value of "green" building and LEED
- Activities of public and institutional purchasers and projects

Costs, performance and availability of more efficient technologies

Competition – internal and external

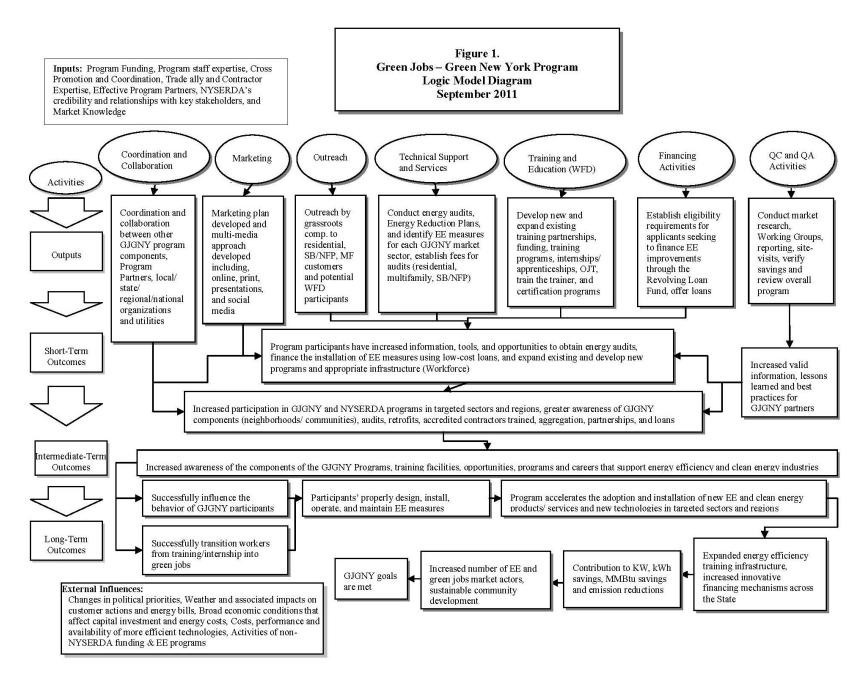
- Internal demand-side customers competing priorities
- External broad market and demand for provisions and supply of building performance and technologies and services
- Competition among target market actors and contractors that affect willingness to promote energy efficiency
- Other organizations investments and commitments to energy efficiency and demand response
- Utility Programs increasing market confusion due to overlap of energy audits, incentives and funding

Activities of non-NYSERDA funded public and institutional energy efficiency programs

- State, regional and national Programs
- Certification Programs
- Utilities Programs
- CBOs in the community generate awareness and activitiy

Section 4: PROGRAM LOGIC MODEL DIAGRAM

The following page (Figure 1) contains NYSERDA's GJGNY logic model diagram showing the linkages between activities, outputs and outcomes, and identifying inputs and potential external influences. The diagram presents the key features of the program. The logic diagram presented here is at a slightly higher level than the tables in this report, aggregating some of the outcomes, in order to provide a logic model that is easier to read. (Evaluation research should use the more detailed tables, in addition to the diagram, when examining the anticipated linkages and performance through the various outcomes.)



Section 5: OUTPUTS, OUTCOMES AND ASSOCIATED MEASUREMENT INDICATORS

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

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

The following tables list outputs (Table 8) and outcomes (Table 9), taken directly from the logic model and associated measurement indicators. For each indicator, a proposed data source or collection approach is presented. When required, the need for baseline data is also noted. Items in this table are prioritized and subsequently considered as potential areas for investigation as part of a formal program evaluation plan.

Table 8. GJGNY Outputs, Associated Indicators and Potential Data Sources

Outputs (<1 year) (Timeline will vary for each program components)	Indicators	Data Sources and Potential Collection Approaches
Outputs from Coordination and	Collaboration Activities	
Coordination and collaboration between other GJGNY and NYSERDA program components, Program Partners, local, state, regional, national organizations and utilities	Number, type and location of coordination efforts (including meetings) with other organizations including: State, National, regional programs (including RGGI), NYDOL, EEPS working groups, unions and trade groups, colleges, utilties and other NYSERDA programs administrators	Program records documenting coordination meeting held and collaboration efforts Review of materials from collaboration and coordination efforts Interviews with program staff focusing on coordination and collaboration efforts Survey of Training Partners and other program partners including: State, National, regional programs (including RGGI), NYDOL, EEPS working groups, unions & trade groups, colleges, utilties and other NYSERDA program administrators (if needed)
Outputs from Marketing Activit	ies	
Formal marketing plan (including specific multi-media approaches – mix of online, print, presentations, PR, events, social media)	Date and content of marketing plan Number and type of media approaches, (online, print and presentations, PR, events, social media deployed)	Program records tracking number and type of marketing approach (TV, radio, online, print and presentations deployed)
Specific GJGNY branding materials	Number and types of GJGNY branded materials (logos, etc.)	Review of marketing materials

Outputs (<1 year) (Timeline will vary for each program components)	Indicators	Data Sources and Potential Collection Approaches		
Outputs from Outreach Activities through CBOs				
Residential, small businesses/ not for profit, multifamily WFD participants reached by grassroots companies	Number of outreach contacts made by grassroots companies to participating residential, small businesses/ not for profit, multifamily WDF participants - by program component and geographic region	Program records tracking number and type of outreach efforts and contacts by grassroots organizations		
New customers reached by the program (those who have not historically been reached through NYSERDA's core programs)	Number, type and location of new customers reached through GJGNY initiatives	Program records tracking number of new customers reached by the GJGNY initiative, by program component		
Outputs from Technical Support	and Service Activities			
Sliding fees for audits established (Residential)	Number, type and dollar amount of sliding scale fees established, by program component (Residential 1-4)	Program documents and files tracking number, type and dollar amount of sliding scale fees established, by program component		
Energy audits conducted (Residential, Multifamily, and Small Business/ NFP)	Number of energy audits, by program component	Program records tracking energy audits conducted by program component		
Energy Reduction Plans completed (Multifamily)	Number and type of Energy Reduction Plan (market rate and low-income)	Review of program database, related files and documents		
Energy efficiency saving opportunities identified (as a result of audits conducted – Residential, Multifamily, Small Business/NFP)	Quantity of savings opportunities identified (KWH, MMBTU), by program component	Program records tracking number, type and location of EE savings opportunity identified by program component		
Regional expeditors established (to assist SB/NFP participants in implementing audit recommendations, and identify incentive and financing opportunities)	Number of regional expiditors established Types of services and support provided Number of projects completed that received regional expeditor support Amount of EE savings achieved (KWH, MMBTU) through expeditor-assisted completed projects, by program component	Program records tracking implementation of audit recommendations		
Outputs from Training and Educ	Outputs from Training and Education (WFD) Activities			
New and existing partnerships, developed and established	Number and type of WFD partnerships including CBOs, trade groups and unions, community colleges, BOCES (new and existing) Number and type of partnerships (new and existing) Number and type of Training Partnership	Program records documenting partnerships and Agreements Total Training Partnership Agreements Interviews with program staff focusing on efforts to expand and leverage new and existing		
New and existing funding opportunities developed and	Agreements Number and type of funding opportunities developed or established	Programs Program records tracking number type and level of funding		

Outputs (<1 year) (Timeline will vary for each program components)	Indicators	Data Sources and Potential Collection Approaches
established	Amount of funding made available through developed and established opportunities to assist and expand WFD initiatives	
New and existing training programs including Worker Readiness, technical training and "train-the-trainer" developed and established	Number, type and location of training programs (new and existing)	Program records tracking number, type and location of training programs
New and existing certification and accreditation programs developed and established	Number, type and location of certification and accreditation programs (new and existing)	Program records tracking number, type and location of certification and accreditation programs
New and existing professional development courses and certifications including continuing education credits developed and established	Number, type and location of professional development programs including continuing education unit programs (new and existing)	Program records tracking number, type and location of professional development programs, certification awards, and continuing education unit programs
New and existing internships, apprenticeships and other forms of on-the-job training (OJT) developed and established	Number, type and location of internships, apprenticeships and other forms of onthe-job training (OJT) programs (new and existing)	Program records tracking number, type and location of internships, apprenticeships and other forms of on-the-job training (OJT) programs
New lab houses for field training and field testing available	Number and location of lab pressure houses regionally located in NYS	Program records tracking number, type and location of lab houses
Outputs from Financing Activit	ies	
Establish eligibility requirements for applicants (Residential, Multifamily, SB/NFP)	Number and type of eligibility requirments for program applicants (Residential, Multifamily, SB/NFP)	Program documents, files, tracking number, type of eligibility requirments for program applicants
Established a Revolving Loan Fund to finance qualified EE improvements (Residential, Multifamily, SB/NFP)	Number, type and amount of loan funding established, by program component (Residential, Multifamily, Small Business/NFP)	Review of program database, related files and documents tracking number, type and amount of loan funding established, by program component
Loans granted and financing provided (Residential, Multifamily, Small Business/NFP)	Number, type, and dollar amount of loans and financing provided, by region and program compenent (Residential, Multifamily, Small Business/NFP)	Review of program database, related files and documents tracking number, type, and dollar amount of loans and financing provided, by region and program compenent
Incentives provided to low- income households (Residential, Multifamily)	Number and dollar amount of incentives provided to low-income participants, by region and program component (Residential, Multifamily)	Review of program database, related files and documents tracking Number and dollar amount of incentives provided to low-income participants, by region and program component

Outputs (<1 year) (Timeline will vary for each program components)	Indicators	Data Sources and Potential Collection Approaches
Direct incentives for Training Partners to develop training programs (WFD) Incentives for certifications, competitive solicitations, and incentives offered to individuals seeking training and certification, reimbursements (WFD)	Number, type and amount of training incentives (WFD) Number type and amount of tuition and certification fee reimbursement incentives (WFD)	Program records tracking WFD incentive information
Outputs from Quality Control a	and Quality Assurance Activities	
Conduct market research, Working Groups, reporting, site- visits, verify savings and review overall program	Number and type of market research activities, Working Groups, site-visits, evaluations, and reports	Review of program documents that resulted from market research acitivities

Table 9. GJGNY Outcomes, Associated Indicators and Potential Data Sources

Table 9. GJGNY Outcomes, Associated Indicators and Potential Data Sources				
Outcomes	Indicators	Data Sources and Potential Collection Approaches		
Short-Term (1-3 years) Outcomes (Timeline for outcomes will vary for each program components)				
Information, tools, incentives and access to funding for audits and measure installations made available to program participants	Change in the number of participants who report that they have information, tools, incentives, and funding necessary to participate in GJGNY initiatives, by type and location, program component and demographics	Interviews with Program participants		
WFD programs and infrastructure developed and existing efforts expanded	Change in number and size of existing WFD programs Number of new programs Change in the size and impacts of WFD infrastructure	Review of program records to assess number and size of existing and new programs Interviews with existing and new program partners to assess magnitude and impacts of WFD infrastructure		
Participation in GJGNY and NYSERDA program components in the targeted sectors and regions (audits, retrofits, accredited contractors trained, aggregation, partnerships, and financing) increased	Change in the number of participants in overall GJGNY-supported activities - audits, retrofits, accredited contractors trained, aggregation pilots, partnerships, and financing – by type and location, program component and demographics	Market Study of NYSERDA program participants in all program components supported through GJGNY activities, by activity type, location and demographics		
GJGNY partners have received valid information, and are aware of and using lessons learned and best practices (to improve implementation of services and goal achievement)	Change in the number of GJGNY partners that have valid information Change in the number of GJGNY partners that are aware of and report using lessons learned, and best practices, by program component	Interviews with GJGNY partners		
CBO outreach to building	Change in numbers of building owners and	Review of CBO activity records		
owners and other targeted market actors increased	other market actors contacted by CBOs, by location and program component	Interviews with CBOs and targeted market actors		
Enrollment in all WFD training programs initiatives increased	Change in number of enrollees participating in new and existing WFD initiatives, by training program type and location	Review of training initiative- specific and overarching WFD program records		
		Interviews with WFD program training partners		
Intermediate-Term (3-5 ye	ars) Outcomes (Timeline for outcomes will vary t	for each program components)		
Increased awareness of the overall GJGNY initiatives, including training facilities, training opportunities, and programs and careers that support energy efficiency and clean energy industries	Change in number and type of market actors aware of the opportunities of the overall GJGNY initiatives (including awareness of training facilities, training opportunities, and programs and careers), by location, program component and demographic	Interviews with program participants and non-participants (trainees, trainers and other partners)		

Outcomes	Indicators	Data Sources and Potential Collection Approaches
Increased coordination of efforts between commercial and residential programs for mixed use properties (Multifamily and Small Business/NFP)	Change in the number of efforts being coordinated between commercial and residential programs for mixed use properties, by program component and demographics	Review of program records to identify and quantify program coordination activities Interviews with program participants to develop baselines of coordination efforts and to assess changes over time
Behavior of GJGNY participants influenced in a market-building goal achievement manner	Change in participants' behaviors and decisions regarding energy efficiency measures, training and financing options (influenced by the program), by type, location, program component, demographic Determination of any spillover impacts (within both participant and non-participant	Survey of participants and non- participants Broader EE market assessments
Increased number of participants designing, installing, operating, and effectively maintaining EE measures (WFD)	communities) Change in the number of participants reporting competence in energy efficiency design, installation, operation and maintaince by type, location, and demographic Change in the number of participants effectively designing, installing, operating, and maintaining EE measures	Interviews with participants Site visits to assess effectiveness of paticipant practices
Adoption and installation of new EE measures and technologies accelerated	Change in the adoption and installation rates of new EE measures and technologies by type, location, program component and demographic	Review of program records Surveys with participating and non- participating end-use customers
Long-Term Outcomes (5+	years) (Timeline for outcomes will vary for each p	rogram components)
Energy efficiency training infrastructure expanded	Change in the number of and size of energy efficiency training facilties and supporting infrastructure across the state by type, sector and location	Review of program records Market characterization study Interviews with participating and non-participating training organizations, trainees and employers
Availability of innovative financing mechanisms across the State increased	Change in the number and types of innovative financing mechanisms available across the State by option type, sector and region	Review of program records Market characterization study Interviews with participating and non-participating implementers and users of financing mechanisms
Facilities in the NY Multifamily and SB/NFP sectors are more energy efficient Building projects planning	Change in the number of multifamily and SB/NFP sector buildings that are energy efficient Change in the number of buildings with reduced energy use	Study of current practice in building energy use for NY State buildings and demand response capability Review of program database, related files and documents
and maintenance activities in multifamily and SB/NFP sector are incorporating energy efficient technologies	Change in the number of buildings that are incorporating efficiency and new energy technologies into standard operations (market rate and low-income, with and without program assistance)	Market assessment surveys and interviews of multifamily and SB/NFP sector building owners and capital and finance market (market rate and low-income, with

Outcomes	Indicators	Data Sources and Potential Collection Approaches
	Change in the number of multifamily and SB/NFP sector buildings using energy efficient technologies including advanced metering (with and without program assistance)	and without program assistance) Assessment of energy component of state building code
Increased number of EE and green jobs market actors Increased awareness and support for sustainable communities development (zoning ordinances, siting requirements, incentives)	Change in the number of EE and green job market actors Change in the number of communities implementing or supporting sustainable development practices, by type, program component, location and demographics	Review of program records Market characterization and assement Interviews with participating and non-participating market actors
Increased KW, kWh, MMBtu savings and emission reductions	Change in energy savings and emissions reductions from products and services installed and promoted , by program component	Impact Evaluation and M&V Studies verifying net kW, kWh and MMBtu saved
GJGNY Goals are met	Documented contribution toward the overall GJGNY portfolio goals	Review of results from impact evaluations (highlighting EE savings as a result of GJGNY activities)
		Review of results from Market Characterization and Assessmant reports regarding program's contribtuion to overall GJGNY % reducttion goals and achievements

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

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

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

Based on recognition of key underlying program hypotheses, the following issues are proposed for potential testing. These issues are grouped into short-, intermediate-, and long-term periods to represent when they are expected to become important or verifiable. Prior to conducting program evaluations, these issues should be reviewed and prioritized based on a number of criteria including: readiness for assessment, ease of and cost required for effective data collection, relative value of results compared with timing and budget constraints.

Short Term (individually relevant program components are noted in parenthesis):

- 1. How is GJGNY interacting with additional funding sources and programs, including SBC, EEPS, RPS, WAP, DOE, ARRA, in addition to utility incentives and rebates in each program sector? (GJGNY Overall)
- 2. What are the most effective outreach, education and marketing methods and strategies to increase demand for program participation? (GJGNY Overall)
- 3. What effect are the CBOs having on the program? How effective are the CBOs outreach activities? (GJGNY Overall)
- 4. What factors are affecting the program participation levels? (GJGNY Overall)
- 5. What factors affect the likelihood that a participant that completes an audit will install energy efficiency measures? (Residential, Multifamily, SB/NFP)
- 6. What impacts to the program are the utility programs and rebates causing? (Residential, Multifamily, SB/NFP)
- 7. How effective is the expeditor role in getting customers to act on audits? (SB/NFP)
- 8. Was affordable financing a key factor in achieving implementation of audit recommendations? How successful was the financing program in providing access to capital for applicants who would otherwise have been unable to install equipment or implement a project? (Financing)
- 9. How effective are the WFD training efforts in helping to get people certified, hired, trained and accredited for green job employment? (WFD)

<u>Intermediate Term (By Program Component):</u>

- 1. To what extent have the collaboration and coordination efforts with utilities been successful? (GJGNY Overall)
- 2. Does increased best practices and lessons learned lead to program participants having increased information, tools, opportunities for energy audits, financing and workforce development activities? (GJGNY Overall)

- 3. Is the program successfully engaging the building owner? To what extent is the Act's definition of small business/ not-for-profit impacting the market? (SB/NFP)
- 4. Has the GJGNY WFD initiative connected trained workers to jobs in the labor market? (WFD)
- 5. Has the GJGNY WFD initiative advanced occupational skills of workers through OJT without undermining pay structures for skilled workers and the budget constraints of businesses? (WFD)
- 6. Has the GJGNY WFD initiative facilitated workers recruitment and hiring of entry-level workers by providing OJT incentives to employers? (WFD)
- 7. Has the GJGNY WFD initiative increased the number of skilled workers in energy efficiency, weatherization, green building and solar thermal installation fields? (WFD)

Long Term (By Program Component):

- 1. How has the GJGNY activities impacted the job supply and energy efficiency equipment supply in the market? (Residential, Multifamily, SB/NFP, Financing, WFD)
- 2. Is the program transforming the building market into one that is more supportive of energy efficiency, energy efficient technologies and advanced metering through a sufficient network of knowledgeable building performance specialists? (GJGNY Overall)
- 3. Are apartments in energy efficient buildings in greater demand than apartments in ordinary buildings? (Multifamily)