

ONE TO FOUR FAMILY OPERATING PLAN for GREEN JOBS - GREEN NEW YORK

I. Overview

A. Purpose of the Plan

This One to Four Family Operating Plan for Green Jobs-Green New York (GJGNY) outlines the New York State Energy Research and Development Authority's (NYSERDA) role and responsibilities in implementing the one to four family component of the Green Jobs Green New York Act of 2009.¹ This One to Four Family Operating Plan presents the guidelines and strategies that will be deployed to accomplish the ambitious goals set forth in that Act.

B. Background & Requirements of the Legislation

NYSERDA is administering programs to support the goals of the GJGNY Act 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).

The legislation directs NYSERDA to:

- establish a revolving loan fund to provide loans to finance the cost of approved qualified energy efficiency services for residential, multifamily, and non-residential structures;
- pursue the feasibility of other innovative financing mechanisms, such as on-bill and Property Assessed Clean Energy (PACE) financing;
- provide energy efficiency retrofits at no initial costs to residential property owners
- issue one or more competitive opportunities to solicit applications from partnerships or consortia comprised of constituency-based organizations which can connect community members to the program;
- establish standards for energy audits based on building type and other relevant considerations;

¹ On October 9, 2009, Governor David Paterson signed into law the Green Jobs Green New York Act of 2009 (A.8901/S.5888 and chapter amendment A.9301/S.6032)

- establish a schedule of fees for energy audits including a sliding scale by which audit fees shall be waived for residential applicants whose demonstrated income is less than two times the median county household income, and the full fees shall be paid by applicants whose median county household is not less than four times the median county household income. Applicants whose income is between two and four times the county median income will required to pay a pro rata percentage of the audit fee
- enter into contracts to provide employment and training services to support the Green Jobs Green New York Program;
- establish an Advisory Council;
- provide annual reports to the Governor, Senate and Assembly

II. Planning Process

The GJGNY Program Operating Plan is being developed with significant and ongoing input from a diverse group of interested parties and stakeholders.

A. Advisory Council

The legislation calls for NYSERDA to establish an Advisory Council to advise the Authority on program design and implementation. As directed by the Legislature, the Green Jobs Green New York Advisory Council will consist 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 shall serve as Chair of the Council. The Advisory Council input has been incorporated into this plan.

B. Working Groups

NYSERDA has established six distinct Working Groups to address specific areas of focus in the development of GJGNY. These various Working Groups have significant representation by interested parties and stakeholders who are providing input into the development of the specific Operating Plan for each of the following areas:

1. Workforce Development
2. Small Homes (1-4 Family)
3. Multifamily
4. Not For Profit/Small Commercial
5. Finance
6. Outreach & Marketing

C. 1-4 Family Working Group

The following individuals, representing their respective organizations, currently participate on the 1-4 Family Working Group:

- Richard Kornbluth, Building Performance Contractors Association/NYS (BPCA/NYS)
- Larry Zarker, Building Performance Institute (BPI)
- David Palmer and Emmaia Gelman, Center for Working Families (CWF)
- Rick Cherry, Community Environmental Center (CEC)
- Mark Dyen, Conservation Services Group (CSG)
- Carlene Pacholczak, Department of Public Service, Public Service Commission
- Damian Hodkinson, Efficiency First
- Mike Lyons, Honeywell Utility Solutions (HUS)
- Myles Lennon, Laborers International Union of North America
- Sammy Chu, Long Island Green Homes
- Lianne Altmann, Long Island Power Authority (LIPA)
- Lisa Tallet, National Grid Generation d/b/a National Grid
- Brian Paterson, New Buffalo Impact (NBI)
- Kevin Schmalz and Betty Weis, New York State Electric & Gas Corporation/Rochester Gas and Electric Corporation

III. Financing

The legislation authorizes NYSERDA to establish a revolving loan fund to finance qualified energy efficiency services and allows NYSERDA to establish the term and structure of loans offered as deemed appropriate, subject to maximum loan amounts of \$13,000 for residential structures (four or fewer dwelling units), \$26,000 for non-residential structures (small commercial/not-for-profit facilities), and amounts as determined by NYSERDA for multifamily structures (five or more dwelling units).

GJGNY is expected to offer three types of loans: unsecured loans; loans to be repaid through property tax assessments of participating municipalities (assuming amendments to the Municipal Sustainable Energy Loan Program authorizes municipalities to enter into agreements with NYSERDA and use funding provided by NYSERDA); and loans where the consumer repays the obligation through an on-bill utility charge (initially through a pilot program that is being developed with National Grid and that may later be expanded to include other utilities).

IV. Green Jobs Green New York - Total Proposed Budget

The overall proposed budget for the Green Jobs Green New York Program is presented on the following page. Details on the one to four family portion of this budget are provided in the One to Four Family Proposed Budget section (Section 5) of this document.

Green Jobs Green New York - Total Proposed Budget	
Element	Budget
Workforce Development	\$8,000,000
Outreach & Marketing	\$8,000,000
Residential ¹	\$41,280,000
Multifamily ¹	\$16,512,000
Small Commercial ¹	\$24,768,000
Program Administration	\$7,840,000
Program Evaluation	\$5,600,000
Total	\$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.	

V. Purpose and Strategies for the Implementation of the One to Four Family Program

A. Purpose of the One to Four Family Program, as defined in the legislation:

- Promote energy efficiency, energy conservation and the installation of clean energy technologies;
- Reduce upfront cost to participation;
- Reduce energy consumption and energy costs;
- Reduce greenhouse gas emissions;
- Support sustainable community development;
- Create green job opportunities, including opportunities for new entrants into the state's workforce, the long-term unemployed and displaced workers; and
- Use innovative financing mechanisms to finance energy efficiency improvements through energy cost savings.

B. Target Audience for One to Four Family Projects

The GJGNY legislation defines a residential structure as “a residential building that has four or fewer dwelling units.” The target audience for the one-to-four family sector is owners of buildings, with up to four residential dwelling units, with incomes typically above 60% of state or area median income. Those with lower incomes may be eligible for the federally-funded Weatherization Assistance Program or NYSERDA's EmPower New YorkSM program through which services could be provided at no cost to the household, and should therefore not be targeted with this program – although they will not be turned away if they choose to participate. Building owners who are customers of investor-owned utilities and whose incomes are between 60% and 80% of the state or area median income may be eligible for a grant of 50% of the cost of the work to be performed, up to \$5,000, (or up to \$10,000 for buildings with two to four units), from NYSERDA and those households are a particular target of interest for GJGNY. Communities in areas where energy costs are high in relation to median income, or those in non-attainment for one or more designated pollutants under the Federal Clean Air Act, will be targeted.

C. Strategy for Program Delivery

Services to the one-to-four family sector will be delivered through the successful existing program, Home Performance with ENERGY STAR (HPwES.) HPwES is a “whole house” program that uses building science to identify and install cost-effective measures to reduce energy consumption in New York State's 1-4 family

housing stock. Contractors perform a Comprehensive Home Assessment (CHA), including health and safety testing, prior to performing work, and also “test out” of the house after work is complete to ensure a safe and healthy environment after installation of energy efficiency measures. The program currently offers low-interest financing or a homeowner cash-back incentive to encourage comprehensive work scopes. Participating households typically reduce their total energy use by 25-30 percent after a participating contractor has completed work on the home.

Audits and energy services for GJGNY will be carried out by HPwES contractors that have current participation agreements with NYSERDA. It is anticipated that the number of participating contractors will increase as demand for program services also increases. Participation agreements currently used in the HPwES program will be updated to reflect new requirements of GJGNY. The version of the participation agreement in place for the program at any point in time will be posted on NYSERDA’s web site.

Contractors delivering audits and performing services must also be accredited by the Building Performance Institute (BPI), in accordance with NYSERDA’s participation agreement. BPI accreditation includes a review of certain business standards and practices in addition to technical certification requirements. NYSERDA will work with NYSDOL and BPI to determine whether additional business review/requirements should be included in the NYSERDA participation agreement or BPI accreditation process.

NYSERDA performs quality assurance inspections on a sample of projects to ensure contractor work meets program standards. In addition, BPI performs quality assurance inspections to ensure work meets their technical standards. If projects fail to meet standards, BPI and/or NYSERDA follow up with the contractor to ensure remediation takes place. Failure to meet BPI and/or program standards may result in probation, suspension, loss of accreditation and/or removal from the HPwES program, in accordance with BPI and NYSERDA processes.

Currently, in the service territories of investor-owned utilities, HPwES is administered by NYSERDA. The Long-Island Power Authority administers HPwES for its customers, and some municipal utilities also offer the program to their customers. NYSERDA will coordinate with LIPA and those municipal utilities to ensure there is no duplication of services or incentives, to make low- and no-cost audits and the GJGNY financing available, and to minimize confusion of customers and contractors. In regions of the state where HPwES is

not supported by NYSERDA or any utility, NYSERDA will reach out to the municipal utilities to coordinate customer and contractor outreach, and to ensure contractors are aware of any other incentives those customers may be eligible to receive from their utility. This outreach will be in addition to any performed by constituency based organizations (CBOs) under contract to NYSERDA, and will be coordinated with CBOs that may be serving the region. See the Outreach and Marketing Operating Plan for a description of services to be provided by CBOs for GJGNY.

D. Standards for Energy Audits and Development of Work Scopes

GJGNY Energy audits for a 1-4 family buildings will follow the standard operating procedures for CHAs used in the HPwES program and must be completed by a Building Performance Institute (BPI) - Certified Building Analyst and comply with the BPI Technical Standards for Building Analysts.

The following is a general description of a comprehensive home energy audit performed according to HPwES program and BPI Standards:

- An interior and exterior visual inspection of the building will be performed to document building measurements, structural concerns and existing conditions of the home. Potential health and safety issues including moisture problems and poor indoor air quality will be evaluated.
- Attic, wall, crawl space and basement insulation levels will be determined. Recommendations for adding insulation to meet optimal energy efficiency levels will be made unless there are structural or safety issues preventing installation. Existing windows and doors will be inspected for type, overall fit and thermal performance.
- The existing domestic hot water heating system will be inspected for proper operation and ventilation. A recommendation for a new domestic water heating system will be made if the existing system is in poor condition, improperly sized, is creating a health risk or if a more efficient type of system is available.
- The existing condition of the building's space heating system(s) will be evaluated, including the entire distribution system. The system will be inspected for the type of venting system and to insure that the system is properly ventilated. The efficiency of the heating system will also be measured.
- For warm air furnace heating systems, a recommendation for a new high efficiency heating system should be made if the existing system is in poor condition, improperly sized, creating a health risk or is highly inefficient. The

entire heat duct distribution system is to be evaluated for general condition, insulation and air leakage and recommendations made to repair leaks and install duct insulation where necessary to meet BPI standards.

- For hydronic boiler heating systems, a recommendation for a new high efficiency system will be made if the existing system is in poor condition, improperly sized, creating a health risk or is highly inefficient. Then entire distribution system will be evaluated for general condition and proper insulation according to BPI standards
- Following BPI procedures, carbon monoxide testing will be performed on all combustion appliances. Additional testing will be performed on heating and domestic hot water equipment to insure that they are operating safely according to BPI standards. Based on the test results, recommendations for corrective action will be made based on BPI standards.
- A blower door test will be performed to determine the current air leakage rate of the building. The test will also be used to target the level and type of air sealing and/or mechanical ventilation required. Recommendations for attic air sealing will be made when any attic insulation or ventilation work is planned. Air sealing will be recommended if the blower door indicates primary leakage paths from the building shell to the exterior, even if mechanical ventilation is required before or after the work is performed. BPI standards will be used for guidance on prioritizing air sealing measures.
- Major appliances and lighting fixtures will be evaluated to determine if newer energy efficient models are beneficial. Recommendations for ENERGY STAR™ appliances, including clothes washers, refrigerators and dishwashers, will be made if they do not exist at the time of the audit.
- The home energy audit contractor will prepare a detailed report for the homeowner that lists the results of the inspection and any recommendations for installation of energy efficiency equipment and measures. The report will list individual measures along with cost and savings estimates. Information on all financing options available to the resident, including rebates or grants available from NYSEERDA or the local utility, will be presented along with assistance in processing loan applications.

E. Energy Audit Fees for One to Four Family Buildings

The GJGNY legislation requires that the program make energy audits available to residential applicants. The fee for energy audits must be waived for New York households that have a demonstrated income 200% of the median county household income or less. For households with income 200 to 400% of the median county household income the applicant, "...shall pay a pro rata percentage

of the audit fees.” Only those households that have a county median income above 400% “pay the full fees.” HPwES will integrate free and sliding scale audits into the current structure by making payments directly to participating contractors.

Currently, under HPwES, contractors are free to set fees for the CHA. Costs of those fees have been known to range from approximately \$200 to \$800. Some contractors refund the cost if the homeowner goes forward with work. Others offer CHAs at no cost after carefully screening customers, and others yet offer the CHA at no cost to all customers by building the costs into their overhead. Because of the statewide application of the law and the wide variety of existing building types and fee structures, and the need to contain program costs, a standard fee per audit will be established. The Program recognizes that larger, more complex houses may require more time to perform the audit, however there will be instances where performing the audit on smaller less complex houses will take less time. Note also that as HPwES is not just an audit program, but rather a program to deliver energy efficiency services, it is not intended that contractors use the audit as a primary revenue source. Contractors should be working to sell comprehensive services needed by their customers and that should be their primary revenue (profit) source. NYSERDA will work with the contractor community to establish a fair fee for the audit considering all of the points above. A percentage will be applied to this base fee to accommodate the “pro rata” rates.

F. Application and Participation Process

Owners of one-to-four family buildings seeking services from the program will participate through one of two pathways: 1) as individual owners, or 2) as a group of owners aggregated in a particular market.

Individual Owner Model – Building owners may contact a participating contractor directly, which is the traditional delivery model for the program. NYSERDA invests in program marketing which refers interested building owners to the NYSERDA web site or the toll-free hotline. Through either of these contact points, the potential customer can obtain names and contact information for participating contractors. Participating contractors also market their services (and may be eligible for co-op incentives from NYSERDA), and customers may respond to those ads.

Alternatively, the individual owner may receive a list of participating contractors serving the local area from a CBO hired by NYSERDA to perform outreach services. Participating contractors may agree to meet community development standards set by the program which will be included in an enforceable agreement.

These standards may include local hiring requirements, pre-apprenticeship and apprenticeship programs, or labor management training programs, as well as other information about the contractor. The fact that the contractor has agreed to meet these standards will be indicated on the list provided by the CBO to the potential customer, and the homeowner may then select a contractor considering these standards or other factors of their choosing.

The selected contractor will ensure the customer has received the brochure entitled “What to Expect from Home Performance with ENERGY STAR, “ either from themselves or from the CBO. Receipt of the brochure, which describes in detail what the audit, contracting and work process involves, is a program requirement. The contractor will then perform the audit in accordance with program standards and will present the building owner with the results of that audit and recommendations for improvements for improving the energy efficiency of the building, as described in section VD above. The contractor will also provide information to the building owner about incentives and financing options available to them. Before any work begins, a contract must be executed between the contractor and the building owner; CBOs and NYSERDA are not parties to contracts for project work.

Aggregation Model – Contractors often perform direct marketing to a region and try to secure multiple jobs in the same area to improve the efficiency of their operations, reduce costs, and improve marketing efficiencies. “Self-aggregating” is a normal business practice and as such, is secured with normal costs of doing business.

However, an aggregation of homeowners may also be brought to the GJGNY program through a CBO as indicated in the Marketing and Outreach Operation Plan. Aggregation is defined as a group of at least five building owners within the same neighborhood (an area that can easily be traveled by the contractor within 15 minutes) who have all agreed in principle to be served by the same contractor (or contractor team.) Households being considered for aggregation by a CBO will be screened by the CBO staff to ensure they are suitable candidates for the retrofit program and for aggregation. Aggregation is seen as a potential means to increase participation rates in the program by using community ties and community development opportunities to encourage retrofit work. This aggregation will benefit contractors by allowing for a more predictable workload and more efficient use of resources, and building owners may benefit from potential economies of scale generated by a large number of energy efficiency retrofitting jobs in a particular community. Contractors also benefit by avoiding the marketing costs associated with bringing a significant number of customers to the table. Aggregations are particularly useful in neighborhoods with similar housing stock as this will result in the greatest efficiencies.

Unlike the process for an Individual Building Owner, where the Owner selects a contractor from a list or by responding directly to an ad, projects obtained through

a CBO aggregation will be assigned to Participating Aggregation Contractors. A contractor will be assigned projects under the Aggregation Model only after signing an Aggregation Participation Agreement with NYSERDA, in addition to NYSERDA's normal Participation Agreement. As part of the development of the Aggregation Model, NYSERDA will work with NYSDOL, CBOs and others to put processes in place to ensure the benefits of aggregation (better pricing, community benefits) are realized. The Aggregation Participation Agreement will require the contractor provide community benefits by meeting certain standards set by the program. These standards may include, but are not limited to, local hiring requirements, pre-apprenticeship and apprenticeship programs, or labor management training programs. Assignments are expected to be made to Aggregation Contractors in turn, based on the order in which the contractors signed the Aggregation Participation Agreement. This is sometimes referred to as a "wheel." A building owner may choose to opt out of the aggregated group at any time and seek services from a participating contractor on their own (or not seek services at all.)

Regardless of the number of building owners participating in the aggregation, audits and individual work scopes must be accomplished for each building, and an individual contract between each building owner and the contractor (or lead contractor of the team) must be executed. CBOs and NYSERDA are not parties to any project contracts. All audit and efficiency work accomplished through the Aggregation Model must adhere to BPI and program standards.

G. 1-4 Family Project Financing and Cost Effectiveness

GJGNY financing available to homeowners for completing an energy audit and work scope will align with the guidelines in the legislation, which allows for a maximum loan amount of \$13,000 per applicant for approved energy efficiency retrofits for residential buildings with 1-4 dwelling units, subject to the final standards established for energy audits and work scopes developed for GJGNY projects. Participating contractors will develop one work scope per building.

Project cost effectiveness will be established through calculation of a Savings to Investment Ratio (SIR) which exceeds one. [$SIR > 1.0$] The SIR is essentially the value of the anticipated energy savings over the cost of the installed measures (labor and materials) within the measure life, as identified through the audit. Energy savings are projected using approved energy modeling software. This software output can help contractors and their customers prioritize potential improvements based on the SIR. The contractor and homeowner can then identify a mutually acceptable scope of work which may include measures that save significant amounts of energy along with others that may provide less energy savings but offer other features the customer finds to be of value, such as certain

utilitarian characteristics providing greater comfort. Measures that are less cost effective individually may be included in the project scope of work if the overall SIR is greater than 1.0.

H. 1-4 Family Quality Control and Quality Assurance

Quality Control (QC) refers to the policies and procedures established by NYSERDA and used by the Program Implementer to ensure that quality work is performed by the participating contractors. NYSERDA and/or the Program Implementer will review work scopes for compliance with HPwES program requirements. NYSERDA and/or the Program Implementer will also review submissions made by participating contractors and customers for accuracy, thoroughness and compliance with program guidelines, policies and procedures. Homeowners may not be eligible to use the GJGNY loan fund for projects where the work outlined in the contract is not fully completed, or otherwise fail to fulfill their obligations as outlined in the Participation Agreement.

Quality Assurance (QA) is performed by a third party contractor to evaluate whether those QC policies and procedures work. This QA process is intended to measure the adequacy of or assist in the development and refinement of the QC policies and procedures, and establishes systems to ensure that problems detected during the QA inspection process are rectified. The QA contractor's evaluations for 1-4 family buildings will generally occur after the installation of the measures identified in the contract by a participating contractor, and after the "test out" procedure performed by the participating contractor.

I. Coordination with Other Program Administrators

NYSERDA will continue to work with other program administrators, including the Long Island Power Authority and utility service providers, to address coordination and minimize confusion where multiple incentive opportunities and loan products are available to residential customers.

VI. 1-4 Family Proposed Budget and Goals

1-4 Family Buildings Program Area Proposed Budget	
Element	Budget
Energy Audits	\$11,596,000
Implementation & Quality Assurance	\$1,000,000

Financing ¹	\$28,684,000
Total	\$41,280,000

¹May 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.

The initial phase of GJGNY Act is expected to support delivery of approximately 46,000 energy audits and completed work scopes for approximately 15,000 1-4 family buildings. The project energy savings metrics for GJGNY, such as kw, kWh, mmBtu, and carbon dioxide equivalents, are under development and will be included in the final version of this Operating Plan.

Development and delivery of the audits and work scopes by participating contractors will clearly result in employment opportunities, supported by the training delivered with GJGNY Workforce Development funding. Additionally, many Participants will access funding from sources beyond those outlined in the GJGNY financing budget, with that investment, in part, justified by the identification of a cost-effective measures to install. The cost of construction for projects developed with GJGNY support, and the associated employment opportunities, can therefore be expected to exceed the impacts of the GJGNY 1-4 Family financing budget by a significant factor. The Evaluation Plan referenced in Section VIII will more specifically outline the expected leveraging ratio and propose methods for evaluating this effect.

VII. Schedule for Implementation

The HPwES programs will begin offering the revolving loan fund to serve owners of 1-4 family buildings when the products are market-ready. The no-cost and reduced cost audits will be offered upon approval of the Operating Plan by NYSERDA management and subsequent update of program rules, expected in Summer 2010.

VIII. Evaluation Plan

NYSERDA will develop an Evaluation Plan describing its approach to evaluation of the Green Jobs-Green New York Program. NYSERDA anticipates spending approximately 5% of total program funding to support evaluation activities

designed to assess the effectiveness, progress and outcomes related to the Program, including highlighting key findings, calculating estimated energy savings and providing recommendations for program improvement and expansion. Independent, expert evaluation contractors will conduct evaluation planning and implementation activities. Initial evaluation plans will be presented to the Advisory Council in May 2010 and will be subject to NYSERDA management approval.

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