

New York State Energy Research and Development Authority

New York Green Residential Building Program

Annual Report
September 2011

Table of Contents

Introduction 1

Program Budget..... 2

Program Activity 3

 September 2008–August 2010 3

 September 2010–July, 31 2011 4

Program Situation Analysis 6

Energy Savings Data and Green Building Measures..... 7

Program Incentive Recipients 8

Appendix 1 9

 New York Green Residential Building Program Advisory Group Members..... 9

Appendix 2 10

 Recipients of Program Incentives as of July 31, 2011 10

Introduction

On September 29, 2008, Senate Bill 8134-B was signed into law as Public Authorities Law (PAL) 1872 (“the law”), establishing a green residential building grant program. The law directs the New York State Energy Research and Development Authority (NYSERDA) to establish a green residential building grant program to serve residential buildings with up to 11 dwelling units. Although not required by the law, NYSERDA established an 18-member Advisory Group to provide input and guidance from stakeholders regarding program Rules and Regulations. The list of Advisory Group members is included as Appendix 1. NYSERDA initiated a rulemaking process in accordance with the law. Regulations were published in the State Register on September 22, 2010 and the program was formally implemented on September 23, 2010. NYSERDA also established a website (<http://www.getenergysmart.org/GreenBuilding.aspx>) to provide the public with information about the law and the status of the rulemaking process.

The New York Green Residential Building Program (“Program”) is the second statewide program in the country¹ to offer direct incentives to building owners² for constructing certified green residential buildings. “Green” building refers to those buildings that are designed and built to deliver improved environmental performance in site preparation, water efficiency, energy efficiency, materials selection, and indoor environmental quality.

The Program is a market transformation initiative designed to encourage green building practices in the residential new construction industry for single-family homes and multifamily buildings. The Program offers incentives to residential building owners for building and certifying buildings to meet or exceed the second level (Silver) of either Leadership in Energy and Environmental Design (LEED) or National Green Building Standard (NGBS) program requirements, and additional program-specific energy efficiency and health and safety performance measures. The Program’s overarching goals are to reduce energy use and greenhouse gas production, preserve natural resources, increase use of sustainable building materials, reduce waste, improve indoor air quality, and reduce indoor and outdoor pollution. The Program is available statewide for building owners who have received or will receive a Certificate of Occupancy on or after January 1, 2010, and prior to October 31, 2013 on a building meeting all Program requirements.

This report is prepared pursuant to the reporting requirements of PAL 1872, and provides an update on program activities through July 31, 2011.

¹ Delaware’s Green for Green Program initiated in May, 2010, is the first.

² The “owner” is defined in the Program regulations as the individual or entity that owns the building on the date the Certificate of Occupancy is issued for newly constructed buildings, or the date the Certification of Completion is issued for substantially renovated buildings.

Program Budget

There is \$2.0 million in Regional Greenhouse Gas Initiative (RGGI) funds currently allocated (as of July 31, 2011)³ to the Program. The funding status of the program is shown in Table 1 below.

Table 1. Program Funding Status

Program Activity	Funds Spent or Encumbered
Incentive Payments	\$543,000
Quality Assurance Contractor	\$50,000
Marketing	\$750,000
Implementation Costs (Purchasing standards, print/copy vendor)	\$78,000
Current Account Balance	\$579,000

³ An additional \$500,000 in State Energy Program grant funds was recently made available to the Program, but are not available to be spent at this time.

Program Activity

September 2008–August 2010

In preparation for Program implementation, NYSERDA management, staff, and external stakeholders accomplished a significant body of work. The following timeline summarizes the primary activities associated with Program development:

- **August–September, 2008:** In anticipation of the Governor’s signing SB-8134, NYSERDA identified staff with expertise in green residential construction and certification programs to comprise the Program team, and hired a staff lead to coordinate all Program development activities.
- **January 2009–January, 2010:** The Advisory Group convened for the first of two in-person meetings in January, 2009; the second was held in June 2009, to review and comment on the Proposed Draft Regulations. A conference call was held with the group in December, 2009 prior to the release of the Proposed Draft Regulations for the 45-day public comment period.
- **January, 2009–March 2010:** Developed regulations and associated regulatory documents:
 - August 2009—Draft Proposed Regulations, Regulatory Impact Statement and other associated documents transmitted to the Governor’s Office of Regulatory Review (GORR) for review and comment.
 - September, 2009—GORR comments received by NYSERDA; revised documents transmitted to GORR in October, 2009.
 - December, 2009—Rule receives final approval by Governor’s Office and GORR and is released for 45-day public comment period
 - February, 2010—Public comment period concludes, and NYSERDA releases its Response to Comments.
 - March 1, 2010—Final Proposed Regulations were unanimously approved by NYSERDA’s Board of Directors. At this time, the Board approved use of the RGGI funds, which enabled staff to begin acquiring the various standards documents incorporated by reference in the regulations.
- **April–July, 2010:** Staff developed and issued NYSERDA’s *Request for Qualifications (RFQ) 15—Technicians for New York Green Residential Building Program*. Staff convened a Review Committee to evaluate proposals received and forward recommendations to NYSERDA management for final approval.
- **August, 2009–August, 2010:** Staff identified and acquired all of the 220 standards and documents incorporated by reference in the regulations. Documents were prepared to be submitted to Department of State, the Legislative Law Library, and the 12 State Supreme Court Law Libraries by a commercial print/copy firm.
- **September, 2010:** The Final Regulations were published in the State Register on September 22, and Program was launched the following day. All Program documents (Application Forms, Program Guidelines, Final Regulations, etc.) were published and remain available on the Program web page at: <http://www.getenergysmart.org/GreenBuilding.aspx>

September 2010–July, 31 2011

The program was formally announced and began offering incentives for qualified buildings on September 23, 2010. Incentive application activity through July 31, 2011, is summarized in Table 2 below.

Table 2. Program Incentive Applications and Incentives Paid

Incentive Applications Received	Applications Approved	Applications Pending	Applications Denied	Incentives Paid
105	81	11	13	\$543,000

An incentive awarded may not exceed the \$3.75 per qualified occupied square foot maximum set in the statute; however, in consultation with the Advisory Group, the maximum incentive award per building was set below the maximum levels authorized in the law, as shown in Table 3 below. For example, the law authorizes an incentive payment of up to \$7,500 for a one-to-two dwelling unit building. NYSERDA's cost analysis indicated that this would in some cases exceed the actual incremental cost of meeting the Program requirements for a production builder, and therefore NYSERDA chose to reduce the maximum incentive award accordingly.

Table 3. New York Green Residential Building Program: Available Program Incentives

Number of Dwelling Units in Building	Calculated Minimum Building Size (in QOSF)	Maximum Program Incentive Award for Building*
1	1367	\$5,125
2	1633	\$6,125
3	1900	\$7,125
4	2167	\$8,125
5	2367	\$8,875
6	2567	\$9,625
7	2767	\$10,375
8	2967	\$11,125
9	3167	\$11,875
10	3367	\$12,625
11	3567	\$13,375

* Note: If a building's qualified occupied square footage (QOSF) is below the Calculated Minimum Building Size shown in Table 1, the incentive for that building shall not exceed \$3.75 per qualified occupied square foot.

The projects participating in the Program to date are single-family homes or duplexes, but several small multi-family buildings are expected to participate in the second half of 2011 and throughout 2012-2013. There is strong participation in the program by affordable housing developers: 46 of the 105 building projects that have submitted applications to date are permanently designated as affordable housing. The rate of denied applications is 12%, which indicates that in the early phase of the program, stakeholders are relatively clear on what is required for program compliance. Several of the denied application were from projects that were designed and substantially complete prior to publication of the Program requirements.

Through July 31, 2011, 33 Technicians have successfully responded to NYSERDA’s RFQ 15, and have been approved for program participation to oversee building eligibility. A builder or building owner must use a participating Technician to oversee the green building certification process, and access program incentives. Technicians are required to perform at least two on-site inspections of each building seeking Program incentives. Technicians may or may not be Home Energy Raters (HERS Raters), but must ensure a HERS rating is completed for buildings per program requirements.

Of the 81 projects that have received Program incentives, 44 received LEED for Homes (LEED-H) certification, and 37 have been certified to the National Green Building Standard (NGBS) through the National Association of Homebuilders (NAHB) Research Center’s National Green Building Program. The number of projects achieving specific certification levels is shown on Chart 1. The relatively even total production numbers for LEED for Homes and National Green Building Standard certified projects show that there is strong interest in both systems in New York State, and that there is room in the market for both.

Chart 1. Program Projects by Green Building Certification Level*



*Platinum is the highest level achievable under LEED-H and Emerald highest under the NGBS; Silver is the lowest level allowed by the Program (for both). The certification level achieved is determined by total points accumulated on the project: more points are obtained by implementing more green building practices, indicating a higher level of green building performance.

Program Situation Analysis

Initial participation rates in the Program have been encouraging, but somewhat lower than predicted. In the Final RGGI Operating Plan,⁴ NYSERDA anticipated that about 2,300 buildings would receive Program incentives through October, 2013. Approximately 330 buildings were projected to be served during the first program year. NYSERDA believes this is due to a variety of factors:

- The financial crisis has had major impact on the residential new construction market in New York State (as it has nationally). Total new construction starts in the one-to four family market segment dropped from 31,259 in 2004 to just 9,972 in 2009. With fewer residential buildings built in general, NYSERDA assumes this market climate caused fewer green buildings to be built than otherwise might have been expected.
- As builders participating in the New York ENERGY STAR Homes (NYESH) program and Green Residential Building Program have stated to managers and staff in NYSERDA's Residential Efficiency Services (RES) Program, with prices decreasing for existing homes, it is difficult for new homes (green or otherwise) to compete in the market.

Building planning, design, and construction takes place over a relatively long time-period, therefore in the Program's first year of operation, NYSERDA believes that some incentives were likely being paid to "early adopters," those building owners or builders who had already made a decision to build green before the Program was a public offering.

⁴ *Operating Plan for Investments in New York Under the CO₂ Budget Trading Program and the CO₂ Allowance Auction Plan*, June 21, 2010.

Energy Savings Data and Green Building Measures

Improved energy efficiency performance is at the core of green building. Not surprisingly, a very high percentage (95 percent) of projects that receive Program funding also participate in and receive incentives through NYSERDA's New York ENERGY STAR Homes (NYESH) Program.⁵ As such, the projects' energy savings are attributed to the NYESH program, if the project is in System Benefits Charge (SBC) and/or Energy Efficiency Portfolio Standard (EEPS) service territory, for purposes of reporting to the Public Service Commission. Nevertheless, the Program incentives have increased the effectiveness of the delivery of NYSERDA's SBC/EEPS-funded programs, and have helped effectuate approximately 5,888 MMBtu and 308,000 kWh of energy savings through July 31, 2011.

The energy efficiency performance of buildings participating in the Program is tending to be better than typical homes participating in the NYESH program. The average Home Energy Rating System (HERS) Index⁶ achieved by buildings in the Program is 53.7, while the average HERS Index for NYESH buildings is 59.2 during the same time frame. Many projects participating in the Program are using advanced green, energy-efficient building techniques, which contribute to this increase in relative efficiency, such as:

- High-efficiency furnaces—Ratings of 92 percent Annual Fuel Utilization Efficiency (AFUE) or above are required
- ENERGY STAR-labeled appliances, lighting, and windows
- On-demand (tankless) water heaters
- Advanced framing—Building techniques that reduce the amount of framing lumber and increase the amount of insulation in a wall or roof assembly
- Spray-foam insulation —Provide high R-value (R-value is the measure of resistance to heat transfer by conduction) and reduce air leakage
- Water efficient appliances and fixtures—Reduce energy use by reducing hot water use

The median size of homes in the Program is approximately 2160 square feet, well below the average for the NYESH program during the same timeframe (3255 ft.²). While not directly correlated to reduced energy use, an overall reduction in the size of the building does correlate with an overall reduction in material use, waste produced, and the size of the building's physical footprint, which are important elements of the green building approach.

In terms of indoor environmental quality, all buildings in the Program (and NYESH program) meet the American Society of Heating, Refrigerating, and Air-Conditioning Engineers (ASHRAE) Standard 62.2-2007 requirements for proper ventilation. Selection of materials (wood products) and finishes (paints) with low levels of volatile organic compounds (VOCs) is another common practice for Program buildings, which helps to improve indoor air quality.

⁵ NYESH is funded through the System Benefits Charge and Energy Efficiency Portfolio Standard.

⁶ A HERS Index is a numeric comparison of the projected annual energy use of a home being designed/built and a home that would meet the minimum requirements of the Residential Energy Services Network's (RESNET) "Reference Home." The performance of the Reference Home is roughly equivalent to a home meeting 2004 International Energy Conservation Code requirements. The HERS Index is expressed on a descending scale from 100 to 0, with 100 meaning a home that meets Reference Home performance; an index of 0 means the home uses no net purchased energy resources.

Program Incentive Recipients

Appendix 2 includes a list of recipients of Program incentives, the number of buildings an owner has successfully submitted to the Program, and total amount of incentives paid. The LEED for Homes or NGBS certification level achieved on the building is also shown. In most cases, the building owner is the builder or developer, as they are typically the owner on the date the Certificate of Occupancy is issued. Rather than report on specific measures undertaken on each project, NYSERDA has summarized some of the measures and techniques commonly included on green building projects in the narrative above.

Appendix 1

New York Green Residential Building Program—Advisory Group Members

Name	Position	Organization
John Barrows	President	Performance Path Solutions
Paul Beyer	Director of Smart Growth	New York State Department of State
Les Bluestone	President	Blue Sea Development
Debra Devine	Director, Office of Policy Research & Development	New York State Homes and Community Renewal
Michael DeWein	Technical Director	Building Codes Assistance Project/Alliance to Save Energy
Yolanda Gonzalez	Executive Director	Nos Quedamos
Ellen Honigstock	Principal	Ellen Honigstock, Architect PC
Olga Jobe	Senior Project Manager	Common Ground
Jim Killoran	Executive Director	Habitat for Humanity, Westchester County
Phil LaRocque	(Former) Executive Vice President	NY State Builders Association
Emanuel Levy	Executive Director	Systems Building Research Alliance
Dennis Lucia	Director, Pollution Prevention Unit	New York State Department of Environmental Conservation
Maureen Mahle	Program Manager, LEED for Homes	Steven Winter Associates
Courtney Moriarta	Senior Engineer	Steven Winter Associates
Ian Shapiro	President	TAITEM Engineers
Kevin Stack	President	Northeast Natural Homes/ Northeast Green Building Consulting
David Stapleton	Owner	David Homes
Russell Unger	Executive Director	New York City Chapter, U.S. Green Building Council
James Van Nostrand	Executive Director	Pace University Law School, Climate and Energy Center
Wayne Willard	Director, Buffalo Multifamily Hub	U.S. Department of Housing and Urban Development

Appendix 2

Recipients of Program Incentives as of July 31, 2011

City	Zip	Number of Building	Incentives Paid	Certification Level(s)
New York	10022	1	\$5,125	LEED-H Gold
Loch Sheldrake	12759	3	\$15,375	NGBS Gold/LEED Gold
Elmsford	10523	15	\$76,875	LEED-H Silver
Webster	14580	23	\$117,875	NGBS Gold
Fairport	14550	1	\$5,125	NGBS Gold
Buffalo	15215	4	\$19,275	LEED-H Gold
Clifton Park	12065	4	\$20,500	NGBS Silver
Ithaca	14850	1	\$5,125	NGBS Silver
Middle Island	11953	1	\$4,991	LEED-H Gold
Ithaca	14850	8	\$41,971	LEED-H Platinum (3)/Gold (5)
East Hampton	11937	1	\$5,125	LEED-H Platinum
Clifton Park	12065	3	\$15,375	NGBS Silver
Homer	13077	1	\$5,125	NGBS Silver
Ithaca	14850	1	\$5,125	LEED-H Silver
New York	10310	13	\$79,625	LEED-H Silver
Clifton Park	12065	1	\$5,125	LEED-H Platinum/ NGBS

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

To learn more about NYSERDA programs and funding opportunities visit www.nyserdera.org.

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Andrew M. Cuomo, Governor

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