

New Jersey Board of Public Utilities and *New Jersey's Clean Energy Program*TM
ENERGY STAR[®] Awards Submission for Partner of the Year – Energy Efficiency Program Delivery
Home Performance with ENERGY STAR and New Jersey ENERGY STAR Homes

A. Category

Home Performance with ENERGY STAR and New Jersey ENERGY STAR Homes, which are sponsored by the New Jersey Board of Public Utilities and *New Jersey's Clean Energy Program* (NJCEP), are each being nominated for the 2011 ENERGY STAR Partner of the Year – Energy Efficiency Program Delivery award.

B. Program Design

Home Performance with ENERGY STAR

Home Performance with ENERGY STAR is a market transformation program that helps residents finance energy efficiency improvements to their homes while having specially trained and certified contractors perform the upgrades. Under the program, existing homes may be improved to reduce energy use and decrease utility costs by up to 30 percent. Specially trained contractors accredited by the Building Performance Institute (BPI) use a comprehensive, whole house approach to test and improve a home's energy efficiency in order to deliver services that dramatically impact energy savings, comfort, and environmental protection.

In a coordinated effort to support participating contractors and expand job growth in New Jersey by creating a market for these services, the program provides BPI training, educational webinars, financial incentives, and co-operative advertising whereby contractors receive 25% reimbursement for any type of advertising they submit, provided that the advertising adheres to Environmental Protection Agency (EPA) and NJCEP guidelines. The program links consumers to contractors through a trade ally database at NJCleanEnergy.com, which currently lists 205 Home Performance with ENERGY STAR qualified contractors.

Goals

The primary goal of the Home Performance with ENERGY STAR program is to encourage homeowners to make their homes more energy efficient. To attract New Jersey residents to move forward with Home Performance, the New Jersey program implemented different financial incentive structures throughout the year to measure consumer response. The financial incentives were a key element in promoting the program in 2010.

Market Barriers Addressed

As a market transformation program, Home Performance with ENERGY STAR has market barriers to overcome both from consumer and contractor perspectives.

- Homeowners having to make a significant financial investment in a weak economy.
- Lack of education about the program in the marketplace. Education is necessary to understand the benefits of the program and the incentives the program provides.
- Contractors not understanding the value of becoming BPI certified.
- Contractors having to make a financial investment to become BPI certified and accredited.

Strategy for Overcoming Market Barriers

The Home Performance with ENERGY STAR program has grown significantly over the past three years. The program had 20 completions in 2007, and this year has already achieved 3,126 completions. The success of the program is attributed to the following strategies:

- Implement and promote enhanced financial incentives and future energy savings to consumers. The program made it possible and affordable for consumers to finance energy efficiency upgrades despite an economic downturn.
- Provide financial incentives and support to contractors as well to allow them to be trained and certified for the new jobs that the program created.
- The increase in consumer demand for the program made possible by the enhanced financial incentives also caused contractors' interest and involvement in the program to increase. Additional contractor training

activities took place during the year to accommodate the expanding group of contractors participating in the program.

Key Activities

- Because the program developed an extensive contractor base of currently 205 contractors, consumers not only learn more about the program through NJCleanEnergy.com, but also through contractors' sales efforts, contractor advertising, e-mail blasts, events, and *New Jersey's Clean Energy Program* call center.
- New Jersey Home Performance with ENERGY STAR implemented generous financial incentives in 2010 to make home improvement upgrades more affordable. The program tested different incentive packages during the year to evaluate consumer response. Incentive levels promoted greater energy efficiency by rewarding projects with the highest levels of energy savings with higher incentives.
- The program offers free BPI training. Although participating contractors must pay a \$500 registration deposit, the fee is reimbursed after their BPI certification has been received. Additional contractor incentives are also available of up to \$800, (a contractor receives up to \$700 based on the level of work the contractor performed and \$100 if they performed the initial audit for the homeowner).
- 2010 Affordable Comfort Inc. (ACI) conference provided education, business networking, and information sharing through sessions and trainings for contractors, builders, architects, and other trade allies. Participants were able to receive continuing education credits for attending BPI and North American Technician Excellence, Inc. (NATE)-sponsored courses. The 2010 conference in New Jersey generated record attendance for a regional ACI conference with over 500 attendees.
- The program participates in additional conferences, meetings and other events to help market the Home Performance with ENERGY STAR program to New Jersey's residents.

Testing incentive enhancements for both consumers and contractors allowed New Jersey Home Performance with ENERGY STAR to flourish, as demonstrated by program completions to date. The program created a market for home energy efficiency improvements, as well as a workforce trained to satisfy this new demand, despite a downtrodden economy.

Customer Testimonial

One customer provided particularly positive and detailed feedback about the program:

"I want to thank you for the work you did with the insulation and new furnace for our house. The results exceeded our expectations. After the air sealing and insulation were completed, we noticed immediately that the second floor was quieter. Also, we soon realized that the second floor was much cooler. Previously it was hotter and uncomfortable. Just what we were hoping would happen. Then the icing on the cake was when I received my electric bill after the hottest July in many years. It was significantly lower than last year. Wonderful results to help start paying for the insulation investment we made."

The Home Performance with ENERGY STAR Program not only stimulated consumer demand, but it also created job growth and training for BPI accredited contractors, due to the program's increased client base. With financial training and advertising incentives, as well as the trade ally database, the program made it possible for contractors to sell the program to their customers, effectively creating a direct sales force across the state. The program has made a significant impact in the state and will continue to monitor consumer and contractor response to different incentive levels and types of completions performed. The New Jersey Board of Public Utilities is committed to continuing the growth that the program has seen over the past several years.

New Jersey ENERGY STAR Homes (Residential New Construction)

The New Jersey ENERGY STAR Homes Program is an innovative energy efficiency program, in which all homes are built to meet or exceed the national ENERGY STAR Homes standard. New Jersey ENERGY STAR Homes are at least 15 to 35 percent more energy efficient than traditionally built new homes. In the middle of 2010, the program transitioned to an open rater market structure whereby new projects must now utilize a New Jersey ENERGY STAR Homes Program qualified rating company to obtain ratings.

Since the New Jersey ENERGY STAR Homes Program was launched in 2001, it has been coupled with an extensive outreach effort that has resulted in participation by many of New Jersey's largest builders who have

committed to building all of their homes in New Jersey to the program's standards. Despite the current real estate market, 3,042 new homes were built and certified to EPA ENERGY STAR and New Jersey ENERGY STAR Home standards as of September 30, 2010. An additional 900 homes are expected to be completed and certified to the New Jersey ENERGY STAR Homes standard by the end of the year.

Besides being a partner with the EPA in their multi-family high-rise pilot, the New Jersey ENERGY STAR Homes Program has also been a pioneer by implementing a high performance pilot program known as New Jersey Climate Choice Home. This program promotes a customized, high performance level of construction whereby the home's energy usage is at or approaching net-zero. The program is based on EPA's advanced new home construction concepts, which will also be part of what ENERGY STAR is expected to unveil shortly under the banner of Concept Home.

The objective of New Jersey Climate Choice Home is to encourage adoption of techniques and technologies that will result in new residential construction that is significantly more energy efficient than current state code and will eventually lead to proliferation of net carbon-neutral homes through advanced construction practices, super efficient products, innovative design approaches, and the use of on-site and grid supplied renewable energy. There is currently one completed Climate Choice Home in New Jersey and seventy-five under construction. The completed New Jersey Climate Choice Home, which also earned the LEED for Homes Platinum certification, was built for a wounded Iraq war veteran, Corporal Visnu Gonzalez, by Homes for Our Troops.

Goals

The goal of the New Jersey ENERGY STAR Homes Program is to create consumer awareness and demand for energy efficient homes in the new housing market. The strategy to transform this market is to use a combination of consumer, builder, and contractor education, along with a mix of advertising techniques and financial incentives.

Market Barriers Addressed

There are a number of market barriers to investment in energy efficiency new construction in New Jersey. Key among these are:

- Conflicting design criteria (i.e., builders who make design and procurement decisions are not responsible for the operating costs associated with those decisions).
- Lack of information regarding the benefits of efficiency and environmental performance on the part of consumers, builders, lenders, appraisers, realtors and others.
- Limited technical skills on the part of some builders and their subcontractors to address key elements of efficiency.
- Inability of consumers, lenders, appraisers and others to differentiate between efficient and standard homes.

Strategy for Overcoming Market Barriers

This program employs several key strategies to overcome these barriers:

- Direct incentives to builders of homes that meet program standards.
- Provide marketing assistance to builders to promote the energy and environmental benefits of New Jersey ENERGY STAR Homes projects.
- Offer technical assistance to builders and their subcontractors on energy efficient construction and installation practices.
- Support third party rater verification (inspections and testing) and program certification of qualified homes with oversight provided by program.
- Provide technical support/training on residential energy code updates and implementation.

Key Activities

To meet the challenges of a slow residential new construction housing market, increased code standards, and transition to a market-based, home energy rater network, the following tactics have been implemented:

- Co-op advertising campaign provides incentives to builders to promote the program and help drive homebuyer demand for qualifying homes. Participating builders are able to apply for 25% reimbursement for qualified pre-approved advertising or promotion of New Jersey ENERGY STAR Homes. The maximum incentive level for each builder is \$50,000 per calendar year if they build 91 or more homes during that year.
- Trainings enable builders and home energy raters to keep up with current codes and technical requirements.

- 2010 Affordable Comfort Inc. (ACI) Home Performance Conference provided education, business networking, and information sharing through sessions and trainings for contractors, builders, architects, and trade allies. Participants were able to receive continuing education credits for attending the following sponsored sessions: American Institute of Architects (AIA), American Society of Home Inspectors (ASHI), National Association of Certified Home Inspectors (NACHI), National Association of the Remodeling Industry (NARI), the Residential Energy Services Network (RESNET). An ENERGY STAR awards program was also part of the ACI New Jersey Home Performance Conference, awarding contractors and builders for their successes and commitment to the residential ENERGY STAR programs.
- Builder financial incentives up to \$10,600 depending on the type of home and the energy efficiency level.
- Participation in key events secures awareness among builders, architects, and other trade allies; e.g., the Atlantic Builders Convention and the Governor’s Conference on Housing and Development.

In the middle of the year, rating services were transitioned from the program team to raters operating independently of the program. An open market rater system requires a more robust quality control and oversight process than the single-source model previously utilized and executed by the program. Working closely with a qualified rating company throughout the construction process assures that proper building practices are followed to meet program requirements. Rating companies also help builders develop a customized, cost-effective plan to achieve ENERGY STAR qualified ratings. Quality assurance (QA) technical inspections are performed by the program using a scalable model, in proportion to the track records of raters and builders. The program QA is performed in addition to the RESNET mandated provider QA, which meets standard home energy rating requirements.

Despite a depressed housing market, the number of ENERGY STAR home enrollments and completions in New Jersey to date is still strong as New Jersey ENERGY STAR Homes has maintained 30% of the new housing market share. Through specialized training, incentives, and the help of co-op advertising, builders are able to demonstrate the benefits and value of building ENERGY STAR homes to homebuyers. Also, New Jersey Climate Choice Home has introduced homes in New Jersey that are significantly more energy efficient than current state code homes and base ENERGY STAR homes, because they use advanced construction practices, ENERGY STAR products, innovative design approaches, and on-site renewable energy. With exceptional builder training and advertising incentives, the state’s new construction market will lead to one where carbon-neutral building practices become the norm, and innovative building designs and construction strategies gain full acceptance of builders, developers, code officials, lending institutions, and home buyers.

C. Incorporation of ENERGY STAR

New Jersey’s Clean Energy Program continues to recognize the benefit of leveraging resources when it comes to delivering all of its energy efficiency programs, specifically Home Performance with ENERGY STAR and New Jersey ENERGY STAR Homes. Over the years, New Jersey has worked closely with the EPA/DOE and its agents to ensure that the ENERGY STAR brand is prominently and properly used. In 2010, *New Jersey’s Clean Energy Program* incorporated the ENERGY STAR brand in campaigns, including contractor and builder advertising, brochures, banners, lawn signs, placards for demonstration homes calling out energy efficient features and benefits, press events, press releases, and trade shows. The ENERGY STAR brand has been consistently strong, perhaps even more so now than in previous years. To New Jersey consumers, the ENERGY STAR logo symbolizes energy efficiency, and it is heavily used in nearly all state residential energy efficiency program communications ; e.g., ENERGY STAR Products, Home Performance with ENERGY STAR, New Jersey ENERGY STAR Homes, and HVAC programs. The prominence of the ENERGY STAR brand has also helped *New Jersey’s Clean Energy Program* cross-promote energy efficiency programs; e.g., Home Performance with ENERGY STAR installs ENERGY STAR qualified lighting and HVAC equipment in homes and encourages residents to purchase ENERGY STAR qualified appliances.

All contractor and builder co-op advertising for New Jersey ENERGY STAR Homes and Home Performance with ENERGY STAR must be pre-approved by *New Jersey’s Clean Energy Program* before it is distributed publicly and must adhere to the following guidelines:

- Use of the New Jersey ENERGY STAR Homes or Home Performance with ENERGY STAR logo.
- Key taglines – “New Jersey ENERGY STAR Homes use less energy, save money, and help protect the environment” *or* “New Jersey ENERGY STAR Homes – built for superior energy performance, comfort,

health, and safety” or “Home Performance with ENERGY STAR. Making homes more comfortable, safe, and energy efficient” or “Home Performance with ENERGY STAR – helping you save up to 30% on your energy costs.”

The ENERGY STAR logos are also included in all program promotional materials.

D. Market Effects

NJCEP results as of September 30, 2010 are as follows:

Home Performance with ENERGY STAR

2010 Accomplishments

4,575 audits completed

3,126 projects completed

2,480 projects in process

- Five contractors performed over 100 jobs each in 2010. One contractor has completed over 400 jobs this year, and the contractor with the second highest number of completions performed almost 200 jobs. The number of job completions varies by contractor. The majority of the contractors had to hire more staff to keep up with consumer demand.
- The program has provided 99 educational programs to date in 2010, providing contractors BPI training and proctoring (written tests and field exams). The program also holds regular webinars to continue educating and keeping contractors abreast of program changes.
- Contractor recruitment is done through contractor success stories and “word-of mouth,” based on the success the program has seen in the state.
- Innovative solutions to grow Home Performance with ENERGY STAR in addition to incentive strategies include BPI specialized trainings, incentives for consumers and contractors, (i.e., co-op advertising for contractors, production incentives and equipment reimbursement) the trade ally database, and various events and conferences.
- According to the 2000 U.S. Census, there are over 2.6 million single family homes in New Jersey, representing 79.6% of over 3.3 million housing units in the state, of which Home Performance with ENERGY STAR has serviced 6,622 homes since 2006. New Jersey has one of the oldest housing stocks in the nation. Sixty-three percent of the homes in New Jersey were constructed prior to 1970. There are a substantial number of homes, which still require home energy efficiency upgrades, creating a need for the program now and in the future.
- In 2010, Home Performance with ENERGY STAR almost doubled the number of participating contractors that were accredited and certified. The number of contractors increased from 107 at the end of 2009 to 205 currently.
- More than 160 BPI contractors have created more than 300 new jobs from August 2009 through March 2010.
- To date there have been a total of 1,781 QA inspections performed by program contractors.
- As of September 30, 2010, the program achieved the following savings:
 - 753 kW annual demand reduction
 - 931 MWh in annual electric savings
 - 18,442 MWh in lifetime electric savings
 - 66,710 Dth annual gas savings
 - 1,499,125 Dth in lifetime gas savings

18,442 MWh of lifetime electric savings is equal to the annual greenhouse gas emissions from 2,532 passenger vehicles and CO₂ emissions from 1,489,806 gallons of gasoline consumed.

The program has experienced unprecedented growth this year, and there are many customers who have seen some real results reflected on their monthly utility bills. To get the best results, most customers achieve 25% in total energy savings, which allows them the opportunity to receive a higher financial incentive. From this experience, the program has emphasized the importance to customers that their homes achieve 25% or more total energy savings, which will benefit them for years to come.

Summary of Cumulative Accomplishments

Home Performance with ENERGY STAR began as a pilot program in 2006. Since that time the program has achieved the following as of September 30, 2010:

- 6,622 total job completions
- 2,218 MWh in annual electric savings
- 38,744 MWh in lifetime electric savings
- 1,170 kW in annual demand reductions
- 95,365 Dtherm in annual gas savings
- 2,146,241 Dtherm in lifetime gas savings

38,744 MWh is equal to the annual greenhouse gas emissions from 5,320 passenger vehicles and CO₂ emissions from 3,129,869 gallons of gasoline consumed.

New Jersey ENERGY STAR Homes

2010 Summary of Accomplishments

- 2,278 enrollments September YTD
- 3,042 completions
- An increase in market share (as a percentage of housing starts) went from 29% in 2009 to 34% in 2010.
- Builder participation increased by 16% in 2010 compared to 2009.
- 2,835 MWh in annual electric savings
- 47,700 MWh in lifetime electric savings
- 4,297 kW in annual demand reductions
- 45,813 Dtherm in gas annual savings

47,700 MWh of lifetime electric savings is the equivalent to the annual greenhouse gas emissions from 6,550 passenger vehicles and CO₂ emissions from 79,666 barrels of oil consumed.

Summary of Cumulative Accomplishments

Since 2001 when the New Jersey ENERGY STAR Homes Program began, the following has been achieved:

- More than 45,000 ENERGY STAR qualified homes built
- 38,668 MWh in annual electric savings
- Lifetime electric savings 773,360 MWh
- 92,387 kW in annual demand reductions
- 1,197,204 Dtherm in annual gas savings
- Lifetime gas savings of 23,944,080 Dtherm

773,360 MWh of lifetime electric savings is the equivalent to the annual greenhouse gas emissions from 106,195 passenger vehicles and CO₂ emissions from 1,291,626 barrels of oil consumed.

E. Data Sources

- Environmental Protection Agency online greenhouse gas equivalencies calculator
- Honeywell 2010 *New Jersey's Clean Energy Program* Residential Energy Efficiency and Renewable Energy Program Plan
- New Jersey Association of Realtors comments regarding the NEEP Draft Report, <http://www.state.nj.us/emp/docs/pdf/270709NEEPcomREAL2.pdf>
- *New Jersey's Clean Energy Program* 2001-2009 Program Results Reporting
- U.S. Census Bureau State and County Quick Facts, <http://quickfacts.census.gov/qfd/index.html>
- U.S. Census Bureau American Fact Finder, New Jersey profile of selected housing characteristics: 2000, http://factfinder.census.gov/servlet/QTTTable?_bm=n&_lang=en&qr_name=DEC_2000_SF3_U_DP4&ds_name=DEC_2000_SF3_U&geo_id=04000US34