

# 2010 ENERGY STAR® Excellence Award

## Affordable Housing

### **2010 ACCOMPLISHMENTS**

NCHFA has successfully incorporated energy efficiency and home comfort standards into its affordable housing programs, prioritizing high-performance houses and ENERGY STAR standards across the state of North Carolina. Its SystemVision program, the only guaranteed affordable housing program in the nation, certifies homes proven to be at least 15 percent more energy-efficient than code-built homes, holding them to standards that surpass ENERGY STAR.

The agency met and exceeded its 2010 goal of building at least 210 new homes to SystemVision standards. Throughout the year, 213 new SystemVision homes and 1,287 new ENERGY STAR rental units were built, and 348 SystemVision supportive housing units were approved. Plus, ENERGY STAR qualified products and equipment were installed in 150 owner occupied rehabilitated homes and 526 rehabilitated rental units.

NCHFA has continued to spread its affordable housing program across the state, reaching even more underserved rural areas that were traditionally overlooked. It strives to further promote ENERGY STAR and SystemVision energy-efficient standards in order to increase home comfort, durability and air quality, and reduce homeowner utility costs.

### **CUMULATIVE ACCOMPLISHMENTS**

For almost a decade, the NCHFA has been positively transforming the affordable housing market in North Carolina through its SystemVision program. Ten years ago, before SystemVision was established, only five affordable homes met energy efficiency standards and less than 10 percent of affordable single-family homes built in North Carolina had energy-efficient certifications. Now, more than 80 percent are SystemVision certified.

NCHFA, in partnership with Advanced Energy Corporation, has certified 2,909 SystemVision homes to date since the program's inception. This includes 2,531 single-family homes and 378 multi-family units. It has certified more than 1,600 new SystemVision homes and rehabilitated more than 1,500 houses since it incorporated higher energy efficiency standards into its single-family rehabilitation program. In 2009, 436 homes were SystemVision certified – 351 single-family units and 85 supportive units. The NCHFA approved 348 SystemVision supportive housing units in 2010 and 709 since 2007. The agency has also worked with 116 different developers for the last decade. Overall, SystemVision has saved affordable housing homeowners in North Carolina a total of approximately \$1.7 million in utility costs.

Since its creation, the NCHFA has also financed more than 196,000 affordable homes and apartments, totaling more than \$12.3 billion, to improve the affordable housing supply in North Carolina's 100 counties. NCHFA has helped 80,500 families buy their first home and it currently finances \$250 million of privately-owned apartments each year. It has provided more than \$29 million in all-time financing for Habitat for Humanity.

NCHFA's efforts to promote energy efficiency have also encouraged other organizations to prioritize high standards and spread the success of both ENERGY STAR and SystemVision.

### **DEMONSTRATED SUCCESS**

NCHFA partners with Advanced Energy Corporation to provide SystemVision technical training and field support to the more than 100 affordable housing developers who voluntarily participate in the program statewide, as well as their builders, contractors and raters. The agency promotes energy efficiency to ensure affordability for occupants, to improve comfort and durability for residents, and to train builders in construction practices that result in energy-efficient, durable and comfortable homes in the affordable housing market and beyond.

NCHFA had jurisdiction over approximately 2,600 new or substantially rehabilitated homes in 2010. Throughout the year, 213 new SystemVision homes and 1,287 new ENERGY STAR rental units were built. The agency successfully reached its goal of certifying at least 210 new SystemVision homes. Furthermore, ENERGY STAR qualified products and equipment were installed in 150 owner occupied rehabilitated homes and 526 rehabilitated rental units.

Since its inception, the NCHFA has certified more than 1,600 new SystemVision homes and rehabilitated more than 1,500 houses after incorporating higher energy efficiency standards into its single-family rehabilitation program.

SystemVision certified homes, which were once found only in major metropolitan areas of North Carolina, are now built in more than half of the state's counties. The program is equally available to major population centers in the state and traditionally underserved areas. Efforts are transferred to other markets when builders apply their new skills to market-rate houses or when volunteers use their knowledge to increase the energy efficiency of their own homes. NCHFA's goal for the future is to transfer learned lessons to the gulf coast region of the country to impact the affordable housing market there with high-performing, energy-efficient affordable homes.

Unlike other programs, SystemVision construction upgrades are only in the range of \$1 per square foot, staying true to the needs of affordable housing markets. The total cost of SystemVision is approximately \$3,000 per unit. This cost encompasses everything that is involved in qualifying homes, including the program's certification fee that covers services such as plan review, training, site visits and bill tracking. NCHFA also features at least one ENERGY STAR-labeled major appliance in each certified home.

The benefits of SystemVision continually outweigh the cost as each home receives a comfort guarantee and a heating and cooling energy usage guarantee, in addition to ENERGY STAR certification. The average house plan-specific heating and cooling energy guarantees generally fall between \$25 and \$30 per month. If a home exceeds its guaranteed usage at the end of the year, Advanced Energy pays the difference to the homeowner. SystemVision homes also carry a comfort guarantee, ensuring that homes are not only affordable to live in, but also comfortable.

While a typical 1,700-square-foot house uses approximately 17,056 kWh of energy with total utility costs of \$1,431 yearly, homes built to SystemVision standards use approximately 14,579 kWh of energy with total utility costs of \$1,223 per year. Overall, SystemVision has saved affordable housing homeowners in North Carolina a total of approximately \$1.7 million in utility costs.

### **INSTITUTIONAL CHANGE**

Since the NCHFA began partnering with ENERGY STAR and promoting SystemVision, the agency has greatly prioritized high-performance energy-efficient affordable housing. The higher standards became a requirement and a condition in order for developers to receive funding or financial incentives for the program.

NCHFA team members responded positively to the increased standards, but there was some resistance from the local government, nonprofit partners, and developers and builders. The agency used financing incentives and valuable SystemVision training workshops to overcome the opposition. When partners began experiencing the valuable benefits of the program firsthand, many offered their support and helped sell the program to others.

NCHFA's efforts have also influenced outside organizations to change their institutional practices by working with energy efficiency. Over the years, there have been steady increases in partners' involvement with home efficiency. Due to the success of SystemVision, dozens of Habitat for Humanity chapters and community development corporations have changed their production processes to incorporate ENERGY STAR standards. Achieving ENERGY STAR certification and the energy guarantee provided by the NCHFA has now become the standard practice for much of the state's affordable housing market.

Beyond high-performance home construction, the SystemVision program has also resulted in the development of a statewide quality control infrastructure and a network of trained sub-contractors. These groups effectively take what they have learned from SystemVision and apply the skills to market-rate homes. The NCHFA is currently working to incorporate ENERGY STAR options into all affordable housing that it helps to fund.

Key organizations that have contributed to SystemVision's success include Advanced Energy Corporation, the local government, nonprofit partners, and developers and builders.

### **HOUSING AFFORDABILITY**

The SystemVision program is targeted to those with low or moderate income, varying with each of the NCHFA's programs. NCHFA has defined the target market for single-family partners under Homeownership programs as families with an income of less than 80 percent of area median income (AMI). Developers working in the NCHFA's loan pools may access funds to finance single-family home construction with or without participating in SystemVision. Those that do choose to participate in SystemVision are able to access \$4,000 in grant funding per home to off-set the costs of construction upgrades and certification. Advanced Energy Corporation receives \$1,050 of this grant per home for the training, plan review, site visits, performance testing, certification and two-year guarantee tracking. The bulk of the grant – \$2,950 – is remitted to builders and trades for increased costs, materials and labor from building the high-performance homes.

The Supportive Housing Development program serves individuals and families who earn less than 50 percent of AMI. Rents and utilities cannot exceed 30 percent of gross household income for the residents. For these developments, a developer must build to meet SystemVision specifications if they are to acquire the NCHFA's funding for the project. Eligible populations are homeless or non-homeless households that require supportive services, including persons with mental, physical, or developmental disabilities; persons with substance use disorders; persons diagnosed with AIDS and related diseases; and special populations on a case-by-case basis.

In addition, the Home Repair and Rehabilitation program targets families with an income of less than 50 percent of AMI. The Tax Credit program is targeted to those who earn less than 60 percent of AMI.

Public funding is utilized to pay for the increased cost of SystemVision. The Federal HOME program, federal and state Tax Credit program and the North Carolina Housing Trust Fund all provide low cost loans or grants to make the developments financially feasible.

### **OUTREACH AND EDUCATION**

NCHFA has encouraged other organizations to pursue greater energy efficiency in their affordable housing efforts by setting a positive example. Many of the agency's programs require builders and developers to meet ENERGY STAR standards. SystemVision was created to surpass ENERGY STAR guidelines and encourage others to step up their energy efficiency efforts. The agency, along with Advanced Energy Corporation, offers trainings for partners and builders, while providing financial incentives. NCHFA is currently working with Advanced Energy Corporation to develop a Home Performance with ENERGY STAR program.

NCHFA uses the ENERGY STAR name in its program construction or rehabilitation specifications. It specifically relies on word of mouth to spread and promote SystemVision services. It also includes the program in its training materials, published collateral and press releases. TechTips, which visually explain the most important steps during installation, were designed to help builders and developers in the field. Workshop participation rates are extremely high as more than 85 percent of eligible applicants participate in SystemVision. Participants also often advertise their participation to their constituents.

Advanced Energy Corporation maintains a website ([www.systemvision.org](http://www.systemvision.org)) with program information and provides developers with site signs that highlight a home's SystemVision guarantee. The organization has developed a PowerPoint presentation to educate homeowners about how their home is different from others, what to expect from it and how to maintain it in terms of energy efficiency.