

# Residential New Construction: An Overview of Energy Use and Energy Efficiency Opportunities



## Energy Use in Residential New Construction

The residential sector accounts for 21 percent of the nation's energy use, and the average American household contributes twice as much greenhouse gas to the environment as the average vehicle, while spending \$1,900 a year on energy bills.

Because homes can be enjoyed from 50 to 100 years, ensuring their energy efficiency during design and construction is an excellent way to reduce greenhouse gas emissions and save American homeowners millions of dollars.

## Energy Efficiency Opportunities

ENERGY STAR qualified homes are at least 15 percent more efficient than homes built to current energy codes, with many achieving 20 to 25 percent more efficiency without costing more to build than a regular home.

More than 725,000 ENERGY STAR homes have been built through 2006, resulting in annual savings of \$170 million for homeowners. Over 12 percent of all single-family new home starts in 2006 earned the ENERGY STAR. In many areas, newly built ENERGY STAR homes represent 20 percent or more of new construction.

Over 3,500 builders across the country have partnered with ENERGY STAR, ranging from large, national builders who construct hundreds of home each year, to individuals building their own homes.

ENERGY STAR builders choose from a variety of proven energy efficiency features to meet program guidelines:

### Effective Insulation

Properly installed and inspected insulation in floors, walls, and attics ensures consistent temperatures with less energy use. The result is lower utility costs and a quieter, more comfortable home.

### High Performance Windows

Energy-efficient windows use advanced technologies to keep heat in during the winter and out during the summer. They also block damaging ultraviolet sunlight that can discolor carpets and furnishings.

### Tight Construction and Ducts

Advanced techniques for sealing holes and cracks in a home's "envelope" and in heating and cooling ducts help reduce drafts, moisture, dust, pollen, pests, and noise. A tightly sealed home improves comfort and indoor air quality while lowering utility and maintenance costs.

### Efficient Heating and Cooling Equipment

In addition to using less energy to operate, energy-efficient heating and cooling systems can run quieter, reduce indoor humidity, and improve overall home comfort.

### Homebuilders Making a Difference:

**Ence Homes** has been an ENERGY STAR partner since 1998, building all of its homes to ENERGY STAR guidelines. In 2006, 281 Ence homes earned the ENERGY STAR label, bringing the company total to more than 1,700 homes. This represents a reduction of nearly 8 million pounds of greenhouse gas emissions. Ence collaborated with Utah Power & Light to create a case study about ENERGY STAR and the role it has played in homes built by the company; it also participated in the Energy Efficient Launch by the Fannie Mae Foundation of Utah.

**Haven Properties**, an Atlanta-based homebuilder that also builds 100 percent of its homes to ENERGY STAR guidelines, has contributed significantly to the growth of ENERGY STAR in that market. The company has increased consumer awareness of ENERGY STAR through a weekly two-minute TV spot on Sunday mornings. Haven participated in the ENERGY STAR Change a Light, Change the World campaign and promoted it at an employee and agent launch, followed by a public event, where they gave away compact fluorescent bulbs (CFLs) and encouraged consumers to take the pledge to change at least one incandescent light bulb to an ENERGY STAR qualified CFL.

ENERGY STAR® is a government-backed program helping businesses and individuals protect the environment through superior energy efficiency.



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## Energy Efficiency Opportunities (cont.)

### Efficient Products

ENERGY STAR homes are often equipped with ENERGY STAR qualified products such as CFLs and lighting fixtures, vent fans, and appliances.

### Third-Party Testing

With the help of an independent Home Energy Rater, ENERGY STAR builders choose the most appropriate energy-saving features for their homes. The rater conducts on-site inspections and testing to verify the energy efficiency measures that qualify the home as ENERGY STAR.

## Talking to Homebuilders About Energy Efficiency

### Enhanced Homebuyer Satisfaction

ENERGY STAR builders help consumers save money, be more comfortable at home, and protect our environment. The quality features built into qualified homes often translate into increased customer satisfaction and more positive referrals. Recent J.D. Power surveys suggest a strong correlation between participation in ENERGY STAR and higher customer satisfaction ratings.

### Increased Profit

The energy-saving features found in ENERGY STAR homes offer the opportunity to enhance profitability and are in high demand by today's consumers. Buyers can use projected energy savings to pay for other high-value upgrades.

### Reduced Liability

The details of home building that were once hidden behind walls are now easy to see with infrared cameras. ENERGY STAR construction helps reduce homeowner callbacks resulting from poor construction practices detectable by infrared cameras. ENERGY STAR builders report reduced customer callbacks and warranty claims that can eat into the bottom line.

## ENERGY STAR Resources

ENERGY STAR builder partners have access to a variety of technical and marketing materials at no cost:

- > ENERGY STAR logo marks for use in marketing materials and publicity
- > An online Toolkit that makes it easy to produce customized marketing materials
- > Consumer brochures describing the features and benefits of ENERGY STAR
- > Detailed fact sheets about typical features found in qualified homes

## Recognition for Achievements

Partnering with ENERGY STAR distinguishes builders as leaders in efficient construction and environmental stewardship. EPA provides builders with recognition for their participation in the program through:

- > Listings on the ENERGY STAR Web site
- > Awards for reaching program milestones
- > Public Service Announcements publicizing ENERGY STAR and its partners
- > Local market consumer outreach featuring participating builders

Visit [www.energystar.gov/homes](http://www.energystar.gov/homes) for more information on ENERGY STAR resources and recognition.

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