



## ENERGY STAR® Certified Homes: Affordable Housing Case Study



From individual measures to whole-house improvements and new construction, ENERGY STAR® offers proven, turn-key solutions that can be implemented by affordable housing stakeholders to improve energy efficiency. Greater energy efficiency helps improve resident comfort, reduce operating costs, and decrease greenhouse gas emissions.

# Habitat for Humanity, Stanislaus County Hope Village

The U.S. Department of Housing and Urban Development (HUD) estimates that 12 million renters and homeowners are spending more than 50% of their income on housing costs<sup>1</sup>. Energy efficiency provides an opportunity to reduce costs for low-income communities by lowering energy expenses. This includes constructing ENERGY STAR certified homes, which deliver energy savings up to 30% compared to typical new homes.

### **Background**

The mission of Habitat for Humanity International is to ensure that everyone has a decent place to live. The organization values housing that is safe, comfortable, and affordable. Since the inception of Habitat for Humanity in 1976, the international non-profit has built over 800,000 new homes and served over 6.8 million people through its home ownership and existing homeowner programs. There are over 1,500 Habitat for Humanity affiliates throughout the United States and nearly 70 national organizations<sup>2</sup> around the world. Habitat for Humanity, Stanislaus County (HFHS) in central California became an affiliate in 1989. Over the past decade, HFHS increased its building capacity and has been building more residential communities.



*Hope Village during the construction process.*

<sup>1</sup> "Affordable Housing" Department of Housing and Urban Development.

[http://portal.hud.gov/hudportal/HUD?src=/program\\_offices/comm\\_planning/affordablehousing](http://portal.hud.gov/hudportal/HUD?src=/program_offices/comm_planning/affordablehousing)

<sup>2</sup> National organizations provide Habitat for Humanity programs to the entire nation, rather than having affiliates serving specific regions as is the model in the United States.

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## **Project Description**

Hope Village is a 20 single-family home community in West Modesto, CA that was completed in 2011, with homes certified to ENERGY STAR program requirements. The ENERGY STAR certification of every home in Hope Village helps to make home ownership affordable for many low-income families by keeping energy costs down.

HFHS developed three floor plans for the subdivision, consisting of 2-, 3-, and 4-bedroom designs. The homes ranged in size from 900 to 1,250 square feet.

HFHS chose to build ENERGY STAR certified homes for multiple reasons, including the desire to keep resident utility costs low and to meet the Title 24 Energy Efficiency Standards from the California Energy Commission (CEC). HFHS received support from the public, as many residents welcomed the progress of energy efficiency in affordable housing.

Rooftop solar panels were included on every home in Hope Village. The panel costs and installation were covered entirely by grant funding and support from Pacific Gas & Electric, an ENERGY STAR partner who covered approximately 50 percent of the total cost. The solar panels further contributed to keeping resident utility bills low.

## **Building Process**

The Hope Village homes were constructed with the combined efforts of local contractors, volunteer groups, and homeowners. Habitat for Humanity homeowner programs seek to foster a sense of community by encouraging the program participants to join volunteers on the construction site and complete a pre-determined number of “sweat equity” hours. HFHS requires each family to complete 500 sweat equity hours prior to move-in. About half of the required hours are completed on the construction site and the remainder are earned through a number of other options, including volunteering in the community and the children achieving a certain academic standing.

ENERGY STAR certified new homes are designed and built to efficiency standards well above most other homes. A new home that has earned the ENERGY STAR label undergoes a process of inspections, testing, and verification by a third-party Home Energy Rater to ensure that the strict requirements set by EPA are met.

Habitat for Humanity, Stanislaus County hired a local Home Energy Rater who was headquartered in the heart of Stanislaus County. This Rater had been an ENERGY STAR partner since 1998 and had rated over 14,000 ENERGY STAR certified homes.

HFHS benefited from having the Rater train the staff and volunteers on energy efficient construction practices and the ENERGY STAR program requirements. The shared understanding of program requirements helped to ensure that ENERGY STAR certification was met while controlling construction costs.



*Hope Village offered homeowners multiple designs and styles.*

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## **Managing for Financial Considerations**

The biggest challenges faced by HFHS during the construction of Hope Village were finding funding for the project and controlling costs. To be eligible to purchase a home, a family's income must fall within 30-80 percent of the Area Median Income based on household size, as determined by HUD.<sup>3</sup> To ensure that homeowners are not debt-burdened, Habitat for Humanity International recommends that the homeowners' debt-to-income ratio not exceed 30 percent, including the mortgage of the home. Due to the pricing mechanism used for mortgage calculation (Habitat provides 20-year zero percent interest mortgages) and the need to limit the debt-to-income ratio, Habitat affiliates must utilize alternate funding sources and donations to continue building affordable housing—including grants, private funding, and in-kind gifts.

HFHS lowered construction costs with the support from the community to build ENERGY STAR certified homes and raise the bar of affordable housing in the area<sup>4</sup>. Habitat for Humanity, Stanislaus County only has one full-time construction staff person and relies on skilled volunteers to lead the unskilled volunteer teams throughout the construction process. Each home built in Hope Village required about 2,000 volunteer hours to build, which saved the affiliate roughly \$40,000 per home. Due to volunteer support from the community, HFHS was able to save about \$800,000 on the project and provide 20 families with new homes at an affordable price. In addition, the Modesto Irrigation District, an ENERGY STAR utility partner and local utility, provided a \$500 rebate to the affiliate for each ENERGY STAR certified home in Hope Village.



*PGE and grant funding provided each home in Hope Village with solar panels.*

## **Successes**

The Hope Village project allowed HFHS to connect with a credentialed HVAC contractor who understands the importance of energy efficiency in affordable housing. ENERGY STAR requires that only HVAC contractors who hold EPA-recognized credentials can complete parts of the ENERGY STAR certified homes HVAC requirements. HFHS has been using the same HVAC contractor since the Hope Village project because the affiliate values the contractor's understanding of and ability to meet ENERGY STAR requirements, its support of energy efficiency, and its ability to consistently present cost-effective bids for proposals.

Habitat for Humanity, Stanislaus County was helped by the abundance of contractors well versed in ENERGY STAR's requirements, which can be partially attributed to the increasing push from the California government for more efficient building construction practices. Also helpful was the fact that HFHS formed a partnership with their HVAC contractor and the local IT college to train apprentice HVAC contractors to become credentialed HVAC contractors.

## **The Future**

<sup>3</sup> In 2011 when construction on Hope Village was completed, the Area Median Income for a four-person family was \$61,100.

<sup>4</sup> Incremental cost differences for constructing ENERGY STAR certified and non-ENERGY STAR certified homes is not available.

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Each home at Hope Village sold for \$150,000-\$175,000. According to HFHS, appraisers considered the addition of the solar panels in their valuation but otherwise used standard appraisal techniques for the Modesto area to value the homes. The cost of the solar panels is expected to be “earned back” over years of operational savings that result from the solar panels, as well as from the ENERGY STAR features built into each home.

In building Hope Village, HFHS demonstrated that energy efficiency is not a luxury but a necessity for a home to be truly affordable. HFHS utilized the network of ENERGY STAR program sponsor partners supporting ENERGY STAR certified home projects to manage costs, which allowed them to achieve their goal of raising the efficiency of the homes to increase the affordability for the families they serve. HFHS built ENERGY STAR certified homes with support from the local community and placed 20 families in affordable energy efficient homes. HFHS continues to build ENERGY STAR certified homes and is currently constructing a second subdivision of 21 ENERGY STAR certified homes.

*For more information about ENERGY STAR certified homes visit [www.energystar.gov/homes](http://www.energystar.gov/homes).*

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