

Burkett Street Net Zero Home — Taylor, Texas



The 3-bedroom, 2-bath, natural-gas home, built by Habitat for Humanity, uses zero net energy over the course of a year, delivering long-term comfort and affordability.

Habitat for Humanity specializes in removing barriers so lower-income families can lead a better, healthier, more financially stable life. So, when Atmos Energy approached Habitat of Humanity of Williamson County, Texas, about building a net-zero, natural gas home, the nonprofit was excited. “We partner with families to get them into a home they can afford,” said Linda Sloan, director of Homeowner Services. “Getting them into a net zero home brings affordability to a new level.”

The 1,500-square-foot home is a model of energy efficiency — following the U.S. Department of Energy’s (DOE) Zero Energy Ready Home Program. Exterior framing is 2x6, allowing insulation levels far beyond current code. The walls and underside of the roof have spray foam insulation, which provides a tight seal against air leaks. “Basically, no air gets into the house except where it’s designed to,” said Sloan. Heat-recovery ventilation captures lost energy as it brings in fresh air. High-efficiency natural gas space and water heating ensure an economical first cost of equipment, while keeping, comfort high and ongoing energy bills low. All appliances are ENERGY STAR qualified.

Energy-efficient Features

- 2x6 exterior framing; R-32 roof and R-20 wall insulation
- Air sealing of exterior frame; duct sealing and testing
- High-efficiency (92%), variable speed natural gas furnace
- Energy-efficient 16 SEER R-410A cooling system
- High-efficiency (92%) tankless natural gas water heater
- Fresh-air mechanical ventilation with heat recovery
- 7.1 KW solar electric system
- HERS Rating: -14
- Certification by 3rd party consultant



Final testing certified the home with a Home Energy Rating Score of -14 — far below the 100 HERS score expected in a comparable reference home. Total carbon dioxide reduction was 7.3 tons per year.

The home is the pride and joy of Ashley Molock, a single mother of one who contributed 300 hours of sweat equity through classes and actual construction.

As part of DOE's Zero Energy Ready Home requirements, a qualified, third-party energy consultant was involved right from the design stage, performing rigorous testing and certification. The consultant did three inspections: a pre-insulation inspection of the poly-seal air barrier along with testing the HVAC ducts for leaks; a post-insulation/pre-drywall inspection; and a post-construction inspection, which included subjecting the house to a pressurized blower door test to see if it was truly airtight.

A 7.1-kilowatt roof-mounted solar system supplies more than enough electricity to power the home over the course of the year. In fact, the excess electricity generated completely offsets the home's yearly natural gas consumption, resulting in zero net annual energy use and carbon emissions.



“My daughter and I are excited that we can conserve and reduce energy without sacrificing comfort and also enjoy healthier, cleaner living conditions.” — Ashley Molock

