

## Connecticut Zeroes in on High-Performance Homes

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In May 2009, The Connecticut Energy Efficiency Fund (CEEF) and the Connecticut Clean Energy Fund (CCEF) launched a design/build competition for the state that aims to educate homebuilders and homeowners about super-high-efficiency homes that consume almost no energy.

The 2009 CT Zero Energy Challenge is designed to encourage Connecticut residents and builders to plan for efficiency during the residential design process and to build homes that operate with near-zero energy. Challenge sponsors selected projects that represent the state's varied geographic areas as well as a full range of housing types to illustrate the possibilities of zero-energy building. Seventeen single-family and multifamily homes, ranging from low-income housing to high-end custom, are now competing to determine which uses the least overall energy.

Boosting interest and generating excitement about residential energy efficiency is one of the Zero Energy Challenge's primary goals, as is dispelling misconceptions about the cost of high-performance building.

"Zero-energy homes are something people can get excited about. Plus, this is a way to demonstrate that high-performance homes are not way out in the future; they're here today, being built in Connecticut—and at an affordable rate," says Justin Lindenmayer, program administrator for residential new construction for CEEF member utility provider The Northeast Utilities System and Zero Energy Challenge administrator.

Challenge projects are required to be either new construction or complete gut rehabs and conditioned living space must measure less than 5,000 square feet. Homes also must achieve Energy Star certification as a baseline of performance. Although the focus is on building super-efficient homes rather than on maximizing renewable energy production, renewables do have a role in the challenge. To participate, each home's plans had to first show a preliminary Home Energy Rating System (HERS) score of 50 or less before any onsite power generation could be figured into performance.

"Putting a bunch of PV on your roof is great, and it brings a HERS score down, but we want people to build efficient homes first before incorporating renewables," Lindenmayer says. Most of the projects will incorporate photovoltaic (PV) panels and many will also include solar hot water systems. Geothermal heating and cooling systems will be used by most of the projects, as well.

To encourage designers and builders to maximize square footage, projects 3,000 square feet or less received a downward adjustment to their HERS score. Also, because tax incentives for PV systems vary around the state, any challenge home built without a PV system will receive a HERS score adjustment that assumes a system equivalent to 1 kWh per 1,000 square feet of living space will be installed at a later date, putting projects on a more equal footing.

The challenge projects are currently being built, although some are already completed. At the competition's end in December 2010, each home's performance will be evaluated and scored by HERS raters, and those that have the lowest scores will earn the top three awards and cash prizes. Each project's progress is being tracked at the challenge website, [www.ctzeroenergychallenge.com](http://www.ctzeroenergychallenge.com).

Sponsors already are planning a Zero Energy Challenge for 2010-2011 with the intention of raising awareness throughout the state and establishing zero energy building as an element of CEEF's Residential New Construction incentives program.

"We've been promoting incentives for a while, and now we can start dialing them back and focus on programs like zero-energy homes," says Jeff Gaudio, chair of Connecticut's Energy Conservation Management Board, which oversees CEEF. "We're hoping over the next few years to start promoting the Zero Energy Challenge and make it almost second nature when building a home—just like looking for compact fluorescent lamps or the Energy Star is second nature."

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