



*An ACI Initiative*

# 1000 Home Challenge

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The recent confluence of political, social, environmental, economic, and technical awareness of global climate change makes a compelling case to re-examine our assumptions regarding the degree to which energy use can be reduced in existing homes and the speed by which this change needs to occur. Transforming the physical and institutional infrastructure to support rather than threaten global, regional, community, and household sustainability is a daunting task. The issue is not whether deep energy reductions are necessary, but how to define and support this vision. The Thousand Home Challenge is designed to catalyze this transformation.

The goal of the Thousand Home Challenge is to demonstrate the potential to reduce total annual site energy consumption of existing North American homes by 75-90%. These reductions will be achieved through a combination of energy efficiency, renewable resources, community-based solutions, and behavioral choices.

Given its exceptional role within the building science and home performance communities, Affordable Comfort, Inc. (ACI) is uniquely positioned to serve as coordinator of a collaborative grass-roots effort to implement order-of-magnitude deep energy reductions' in existing homes in the US and Canada.

## Key Elements

**Big and Bold.** By redefining achievable levels of energy use in existing homes, the Thousand Home Challenge will empower citizens, professionals, and communities to reach and verify integrated solutions to the problems of housing affordability & durability, climate change, and environmental sustainability.

**Performance Measurement:** THC performance criteria are intended to be challenging but achievable. The fundamental criteria is total annual net site energy consumption, but additional indicators of performance will be used to evaluate broader aspects of home energy performance, water use, and carbon emissions.

**Regional Collaboratives:** The THC will stimulate regional initiatives capable of supporting deep energy reductions by customizing solutions according to their environmental and housing needs, micro-climates, policies and initiatives. These efforts will help to develop the human, financial, and organizational resources needed to transform their housing stock.

**Behavior, Lifestyle, and Community Solutions:** Occupants and communities are an integral part of existing home energy performance, and the THC is unique in encouraging and evaluating how people and communities can achieve creative solutions to reduce home energy use -- in conjunction with enclosure upgrades, equipment efficiency, and renewable sources.

**Technical Innovation:** The big bold nature and continental scope of the THC will create and catalyze opportunities for market penetration of market-ready emerging technologies as well as development of new residential building products and components, assemblies, controls, and integrated systems.

**Retrofit Packages:** Without discouraging custom retrofits, the THC will stimulate projects with potential for replication to common house styles and vintages, e.g., the four-square, bungalow, one-story and split-level ranch, townhouses, and masonry row houses. Packages will be refined to optimize energy efficiency, indoor air quality, comfort, and durability.

**Workforce Development:** With regional collaboratives and replicable house retrofit packages, the THC has the potential for accelerated deployment, including the opportunity to help develop a nonexportable green collar workforce.

## Timeline

### PILOT (Fall 2008 - Spring 2010)

- Recruit sponsors, collaborators, and participants
- Develop THC threshold calculator and performance criteria
- Draft Thousand Home Challenge Guidance Documents
- Launch 1000 Home Challenge website (April 2010)
- Begin to document of deep reduction case studies

### LAUNCH (Summer 2010 – Spring 2011)

- Ongoing revision of Guidance Documents incorporating lessons learned
- Document and share case studies and documented energy savings
- Stimulate development of regional coalitions
- Outreach to media and the greater public

### ONGOING (2010 & beyond)

- Thousand Home Challenges between communities, cities, and regions that focus on housing market segments with the greatest need, benefits, and existing resources.

## Initial Sponsors

Conservation Services Group <> Energy Federation, Inc. <> NYSERDA <> National Grid <> Pacific Gas & Electric

## Initial Collaborators

In addition to the sponsors, over seventy organizations have expressed interest in being involved in the Thousand Home Challenge, including:

ACEEE <> A O Smith <> Brookhaven National Lab <> Building Professionals <> BSC <> Camroden Associates <> CCHRC <> City of Boulder, OEA <> CMHC <> Columbia Gas of Ohio <> Davis Energy Group, Inc. <> Earth Advantage Institute <> Ecos Consulting <> Energysmiths <> FSEC <> GreenHomes America <> HomeEnergy magazine <> Johns Manville <> KEMA Services Inc. <> LBNL <> Livermore Energy Associates <> NAHN <> NREL <> NEEP <> NW Center for Sustainability & Innovation <> Oak Ridge National Laboratory <> Passive House Institute US <> Performance Systems Development <> Saturn Resources Mgt Inc. <> VEIC <> WSU Energy Program

## For Additional Information Contact

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