For Immediate Release
February 28, 2012

Contact: John Ackerly
Melissa Bollman
301-841-7755
cell 202-365-4765

Technology Competition Seeks Cleaner Wood Stove
Innovation may help re-invent the classic wood stove

Today the Alliance for Green Heat announced the public launch of a Next Generation Wood Stove Design Challenge that seeks to promote innovation in wood stoves.

The Challenge will culminate in a Wood Stove Decathlon, modeled after the Solar Decathlon, which will take place on the National Mall in Washington DC in November 2013. Eminent stove, technology, air quality and combustion experts will judge this public exhibition of next generation wood stove designs. Stoves will be judged on emissions, efficiency, affordability, innovation and ease of use.

The Design Challenge grew from discussions between the Alliance for Green Heat and editors at Popular Mechanics magazine who believe innovation can overcome some of the problems inherent in the wood stove and that a “smart” wood stove may be on the horizon.

Modern wood stoves can burn relatively cleanly, but they can be smoky and inefficient when not used properly. “Wood stoves are a lifeline for millions of mostly rural low and middle-income families, but they are too easy to misuse by operators,” said John Ackerly, President of the Alliance for Green Heat, the independent non-profit organization sponsoring the Design Challenge.

According to the U.S. Department of Energy, wood stoves produce 80% of residential renewable energy in America, while solar and geothermal combined produce 20%. The U.S. government funnels hundreds of millions of dollars into R&D and incentives for solar, biofuels and other technologies, yet the renewable energy device used by most Americans has been neglected.

“The wood stove is a vital part of our nation’s technological legacy, and we think it can be a vital part of our future,” said James Meigs, Editor-in-Chief of Popular Mechanics magazine. “We are excited to see what sort of innovation engineers, inventors and university teams can bring to the table to make the wood stove cleaner, and possibly re-invent its consumer image,” he continued.

Federal standards for wood stove emissions will be somewhat stricter by 2014, but will do little to impact how consumers use and misuse stoves. The two biggest problems with wood stoves happen when operators use unseasoned
wood or do not give the stoves enough air, which leads to incomplete combustion. “We expect the Design Challenge to produce stoves that integrate electronics that are ubiquitous in today's appliances and can include novel features that consumers want,” Ackerly said. “A smart wood stove may motivate people to trade in their older polluting stove and replace it with an higher efficiency, higher tech model,” Ackerly said.

A powerful and growing array of partner organizations that are helping with the Challenge include Popular Mechanics, the State of Washington Department of Ecology, the New York State Energy Research & Development Authority (NYSERDA) and the Global Alliance for Clean Cookstoves. The Design Challenge will also bring together engineers working on developing clean cookstoves in the developing world with those working on heat stoves in the developed world on the common goal of increasing efficiency and reducing emissions.

The deadline for initial applications is December 20 and the finalists will bring their stoves to Washington for the Decathlon in November 2013. The winning design will receive $25,000 and coverage in Popular Mechanics magazine. Second prizes will share a $10,000 award. For rules and more information about the Wood Stove Design Challenge, go to www.forgreenheat.org/stovedesign.

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The Alliance for Green Heat promotes wood and pellet heat as a low-carbon, sustainable and affordable energy solution. The Alliance works to advance cleaner and more efficient wood heating appliances, particularly for low and middle-income families. The Alliance is a 510c3 non-profit organization based in Maryland.