

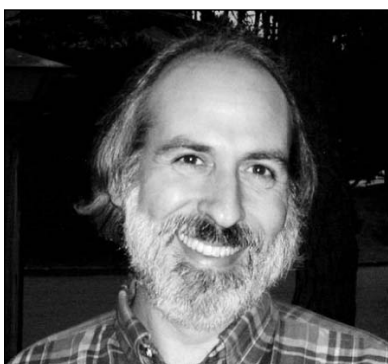
THE GRAPEVINE

ACEEE Summer Study at Asilomar, California

Sunday, August 22, 2004

Welcome

by Steven Nadel



Steven Nadel,
Executive Director, ACEEE

The 2004 Summer Study on Energy Efficiency comes at a time when energy is in the news and on the minds of the general public. National gasoline prices topped \$2 per gallon in May of this year, and as of July 30th remain 39% higher than a year ago (and are still well above \$2

per gallon here in California). With oil use growing rapidly in China, the Russian oil industry in turmoil, and U.S. production declining more quickly than previously predicted, a return to 2003 prices is very unlikely. Natural gas prices are also near record levels, with average residential prices in April (the most recent month with full data) at \$10.43 per million Btus, which is 35% above the price in April 2002. Analysts are predicting that prices will stay high for several years, and only when LNG imports become substantial are retail prices likely to decline to midway between current and historic price levels. And just last week we "celebrated" the anniversary of the great 2003 blackout that darkened much of the Midwest and Northeast.

Energy efficiency can help address all of these problems. From 1978 to 1988 the average fuel economy of cars on the road increased 32%, which weakened demand for oil and contributed to a decline in average

domestic oil prices of 60% over the 1981–1988 time period. A recent ACEEE study conducted using the same natural gas model and consultant used by the National Petroleum Council found that reducing natural gas and electricity use by an average of 5% over a 5-year period would reduce U.S. natural gas prices by about 20%. And energy efficiency can reduce peak electric loads, making it less likely that electric demand will exceed available supplies. Gains in energy efficiency will also reduce peak loads on key transmission and distribution lines and nodes.

The question is not what efficiency can do if given the chance, but how do we make efficiency happen? Washington is gridlocked on energy policy, with a heavy emphasis on rhetoric and finger pointing, and little work is taking place toward the compromises that are needed to make forward progress. Fortunately, states and regions are stepping into the void. Maryland and Connecticut recently enacted state equipment efficiency standards. A taskforce appointed by the governor has crafted a broad package of recommendations to reinvigorate Wisconsin's energy efficiency efforts. Here in California, the state and the utilities are working together to use efficiency to defer the need for some generation and transmission capacity, complementing a program offered under the state's public goods program. And states on the West Coast and in the Northeast are working together to develop regional responses to reduce emissions of greenhouse gases.

But much more is needed. I challenge all Summer Study attendees to think of creative new ways to turn efficiency ideas into action. This next week will be a great time to refine these ideas, explore new strategies, and develop partnerships in order to make energy efficiency a leading part of the solution to our energy problems.

The Future of Building Efficiency



Vivian Loftness, School of Architecture, Carnegie Mellon University

Tonight's plenary speaker, Vivian Loftness, head of the School of Architecture at Carnegie Mellon University, will enlighten us on an expanded approach to assessing building energy efficiency as she discusses "Directions for Building Energy Efficiency – Looking at Buildings and Their Internal and External

Environment." Professor Loftness has concentrated her research efforts in defining total building performance for a range of building types, including museums, research laboratories, courthouses, and offices. Her efforts have advanced the understanding of spatial quality, thermal, visual, acoustic, and air quality, as well as long-term building integrity, through effective architectural decision making, systems integration, and improvements in the building delivery process. Professor Loftness is a participant in the Advanced Building Systems Integration Consortium, an industry-supported effort focussing on the "Office of the Future." Professor Loftness continues technical consulting and research in the areas of energy conservation, passive design, and building climatology, for such institutions as the Department of Energy, the National Academy of Sciences, the National Endowment for the Arts, and the World Meteorological Organization.

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Showcase Preview

Once again, a technology showcase featuring the newest developments in energy-efficiency will be held on Wednesday, August 25, from 1-5 pm. Here's a sampling of what you'll get to see there.

Booth 1: Oakridge National Laboratory—US DOE Building America

Building America is a private/public partnership sponsored by the U.S. Department of Energy that conducts systems research to improve overall housing performance, increase housing durability and comfort, reduce energy use, and increase energy security for America's homeowners. The Building America program advances energy efficient strategies surrounding house designs by demonstrating the bottom-line benefits of new technologies and building practices, and promoting their widespread use. The exhibit will showcase Building America homes engineered to increase energy efficient performance.

Booth 2: Central Research Institute of Electric Power Industry (CRIEPI)—Non-Intrusive Electric Appliances Load Monitoring System

A real-time electric appliances load monitoring system that infers electricity consumption or the on-off state of individual appliances in a household non-intrusively, will be exhibited. The system does not require any adaptive indoor equipment and wiring to measure power consumption of individual appliances. It identifies electricity consumption or the on-off state of individual appliances in the household by recognizing a harmonic pattern of total load current, which is measured at the entrance of the household. A prototype device will be at the booth. You will also be able to view a real-time comparison between inferred and measured data, which will be sent through the Internet from a real household in Yokohama, Japan.

Attention All Panel 1 Attendees!

A new order of the presentations for Panel #1 on Monday, August 23, from 8:30–10:00 am has been decreed.

First, John Masiello, with Progress Energy Florida, will present his paper, "Measured Energy and Peak Demand Reduction from a High Efficiency Air Conditioner Replacement Pilot Project." Immediately afterward Bruce Wilcox will give his talk, "Comparison of Calculated and Measured Air Conditioning Design Loads for Alternative Glazing Options in Production Homes in California and Texas." Wilcox will be followed by Bill Rittlemann discussing a "Field Investigation of 18 Solar-Assisted Domestic Hot Water Systems with Integral Collector Storage."