

# THE GRAPEVINE

ACEE Summer Study at Asilomar, California

Friday, August 27, 2004

## Viewing Transportation Through a Carbon Lens

by **Therese Langer, Transportation Program Director, ACEE**

For advocates of energy efficiency, the growing focus in many quarters on global warming is a major opportunity. Some players in climate change discussions ignore energy efficiency or greatly overestimate its cost, but efficiency analysts have the tools to show that efficiency is one of the cheapest and quickest ways to cut carbon emissions. Transportation efficiency, in particular, could benefit from the carbon perspective. In addition to highlighting the importance of the sector (which is responsible for one-third of the CO<sub>2</sub> emissions in the United States), a carbon framework could help bring clarity to longstanding questions about the viability and relative merits of alternative fuels and how to integrate efforts to improve vehicle technologies with those to reduce vehicle miles traveled. With automobile fuel economy going nowhere, more attention to greenhouse gas emissions can only help. And given the numerous options to improve fuel economy at negative net cost, economy-wide, market-based carbon policies sound promising.

But, in fact, multi-sector carbon policies may give disappointing results for transportation. According to Energy Information Administration analysis, the vast majority of the 20% reduction in CO<sub>2</sub> emissions the McCain-Lieberman Climate Stewardship Act would bring by 2025 would come from the electric power sector, which would undergo a major shift from coal to renewables, natural gas, and nuclear power, along with a modest reduction in total quads. Whether you buy the EIA analysis or not, there is little reason to doubt the finding that the carbon emissions from transportation would decline only 5%, with the fuel economy of passenger vehicles rising a paltry 2.6 miles per gallon by 2025. Not surprising, since the

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## Displays Draw Crowd



**Joelle Michaels of EIA**

Merrill Hall was filled with wonderful display presentations again on Thursday during Display Presentations II. National programs such as the DOE and Energy Star rubbed elbows with state and private pro-

grams. Among these were the Energy Information Agency of the DOE. Since 1979, every few years the Energy Information Agency has undertaken surveys of the commercial building sector in the U.S. Officially titled "Commercial Buildings Energy Consumption Survey" (CBECS), the newest version, based on work done in 2003, will be available to the public this fall. Each of these surveys are considered "snapshots" of commercial building in the country, based on several factors reflected in the questionnaire. These include building type, size, and age; activities practiced within each building; sources of energy and types of equipment used; and energy consumption by fuel type. Collected data can be used to provide information on the percentages of buildings that exhibit various characteristics, and to develop benchmarks that can be used by other buildings or building designers. When posted, the results will be available at [www.eia.doe.gov/emeu/cbecs](http://www.eia.doe.gov/emeu/cbecs).

Another interesting exhibit seen in Thursday's display program sheds new light on load profiles in many types of buildings. Using whole building data metered by Automated Meter Reading on 15-minute intervals, Reid Hart and others at the Eugene Water and Electric Board in southern Oregon developed graphs of load profiles. Graphs cover several building types, including offices, retail buildings, education,

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**One-watt winner Dale Sartor receives the prize wine bottle from Shane Holt of AGO for his low-standby laptop computer.**



**Alan Meier of IEA, Ruben Deumling of UCB, and Kang Yanbing of ERI**



**Josh Apte of LBNL estimated the round-trip energy use for the summer study attendees to be 1200–1600 barrels of oil equivalent or 7–9 TJ.**



**Aaron and Paul of Diamond and Associates**



**Perry and the Pumpers**



**Kim, Joe, Liza, and Leo**



**Jim McMahon, LBNL**



**Harvey Sachs, ACEEE**



**David Goldstein, NRDC**



**Doug Mahone, HMG**



**Marty Kushler, ACEEE**



**Karl Brown, CIEE**



**Peter Biermayer, LBNL**



**Valerie Richardson**



**Jean Boulin**



**John Proctor, PEG**



**Steve Greenberg, LBNL, Home Energy**



**Leanne Maxwell, Home Energy**

Heard it through *The Grapevine*

## Viewing Transportation Through a Carbon Lens

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expected cost for carbon allowances would translate to an increase of about 30 cents in the price of a gallon of gasoline—less than we've seen over the last six months. Allowing car manufacturers to sell credits from exceeding CAFE standards would increase oil savings a bit. On the other hand, if manufacturers had the opportunity to buy their way out of CAFE, average fuel economy would quite possibly go down.

A carbon market is only one tool among several that will be needed to make progress on transportation sector emissions, and no market mechanism proposed to date is a good substitute for regulation of fuel economy. Complexities in the market for vehicle efficiency and the difficulty of capturing the costs of oil dependence are nothing new, however, and the fact that a carbon market does not automatically solve these problems is not a reason to opt out.

Manufacturers taking a global view of the auto industry increasingly will adopt a carbon perspective, and providing them with a market that values efficiency will help move the industry in the right direction.

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## ECE<sup>3</sup> 2005 Summer Study

ECE<sup>3</sup>, the European sister of ACE<sup>3</sup>, is having a summer study May 30–June 4, 2005 in Côte d'Azur, France. Deadline for call for papers is October 1, 2004. Come and join! Please visit [www.eceee.org](http://www.eceee.org) for more information.




**Last night's Power Play game drew a big crowd. Check [aceee.org](http://aceee.org) this afternoon for the exciting results!**

### THE GRAPEVINE

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## Displays Draw Crowd

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groceries, food service, hospitals, medical clinics, lodging, and warehouses. Hart presented the paper "Who Left the Lights On? Typical Load Profiles in the 21st Century," which shows that previous assumptions about unoccupied loads have been significantly understated. Many models show unoccupied periods as shorter than what has been documented by these types of data. Also, low loads during unoccupied periods have been assumed to be at 10%-20% of peak load; whole building data indicate that at least 40% and sometimes as high as 80% of peak loads are common. These types of data are becoming less expensive and easier to obtain. Other public utilities have also been collecting whole building data, and as researchers practice additional mining of these data, new trends and insights will undoubtedly follow.

The U.S. Climate Technology Partnership (CTP), a partnership between NREL and Mexico's National Commission for Energy Savings (COMAE) was also featured. The CTP is working to promote sustainable development and reduce air pollutants and greenhouse gasses. This work is currently channeled towards a program for energy service companies (ESCOs) who offer performance contracts that allow institutions to modernize facilities with little or no investment of their own while increasing equipment efficiency and reducing maintenance costs. Companies such as Ecotherm, Exvel, and Heat & Power currently participate in the ESCO initiative. For more information, see [www.ameresco.com](http://www.ameresco.com).

SERA, Inc., an economic research company, provides a nonenergy benefits (NEBs) calculation model for energy clients such as electric and gas utilities and state, federal, and regional energy agencies. The program benefits utilities and ratepayers, who experience lower revenue requirements; society in general, which benefits both economically and environmentally; and program participants themselves, who gain a broader understanding of the impact of green innovations and energy efficiency programs. The NEBs model is also useful in evaluating the attitudes and factors that contribute to consumers' acceptance of green factors. Program planners, evaluators, regulators, and implementers from such organizations as PG&E, NYSERDA, and Energy Center of Wisconsin have used the model to design programs, develop marketing strategies, prioritize needs, and provide a more holistic benefit-cost analysis. For more information, visit [www.serainc.com](http://www.serainc.com).

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## Get-Well Card for Rick Kunkle

Those who know Rick Kunkle are encouraged to sign a get-well card for him in Surf (ACEEE) or the Social Hall.