

Monday, August 13, 2012

ACEEE Summer Study at Asilomar, California

Charting the Course to Low-Energy Buildings



Jennifer Amann
ACEEE Buildings
Program Director

According to EIA, energy use per U.S. household dropped more than 20% from 1980 to 2009. In the commercial sector, energy use per square foot of space also dropped by about 20% between 1979 and 2003—the long-awaited CB ECS under development now will give us better insight into trends over the past decade.

Efficiency policies like building codes and appliance standards, coupled with programs accelerating

adoption of efficient products and practices, have played a big role in reducing the energy use of typical buildings. Work on these policies and programs has been the bread and butter of ACEEE's Buildings Program for more than a quarter century. Joining with partners from the public, private, and nonprofit sectors, these efforts have put us on the path toward lower-energy buildings. Savings from recent code development cycles have accelerated; the latest codes save an estimated 30% relative to 2006 and 50-60% relative to 1986. Existing standards will cumulatively save an estimated 200 quads of energy by 2035; ACEEE has identified a number of new products warranting standards which would yield an additional 42 quads of savings over this period (check out *The Efficiency Boom: Cashing in on the Savings from Appliance Standards*, our latest study on appliance standards for all the details). Adding to the savings, ratepayer-funded programs tallied up 124,000 GWh and 1.3 billion therms of savings in 2010 alone, the vast majority in the residential and commercial buildings sector.

While we celebrate these efficiency gains, we know that we must find ways to drive down buildings' energy use further and faster to address the twin challenges of climate change and economic revitalization. Codes and standards will continue to play an important part in our work moving forward. We're exploring ways to get more from these staples of efficiency policy, for example, by increasing utility involvement in building

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Sunday's Plenary Something of a Study in Contrasts

Jane Long, Chair of California's Energy Future Project spoke on "California's Energy Future—The View to 2050 Summary Report". The study, conducted by the California Council on Science and Technology, is a work in process. Amory Lovins, Chief Executive Officer and founder of the Rocky Mountain Institute, discussed his latest book, *Reinventing Fire*. It would not justify the work of both speakers to say that Long's is the voice of reality and Lovins' is the voice of a dreamer, but a casual observer might make that mistake.

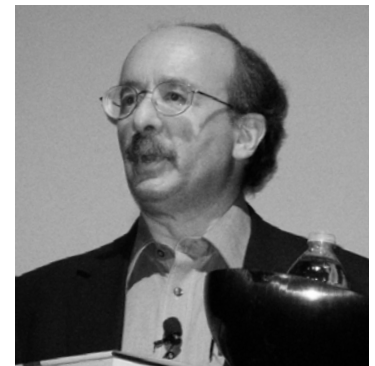
Long asked the question "Is it possible to meet California Governor Jerry Brown's Executive Order to go 80% below 1990 green house gas (GHG) emissions by 2050?" The California legislature passed Assembly Bill (AB) 32 in 2006, requiring a drop in GHG emissions to 1990 levels by 2020.

The study looked at four actions to reduce emissions: reduce the demand for fuel and electricity; increase the demand for electricity; use renewable resources to produce electricity; and finally, to "de-carbonize" whatever fuel we still need to use. The three sectors of efficiency and electrification to target: buildings, industry, and transportation

In order to meet the goal of Governor Brown's Executive Order, every square foot of building space would need to be touched. The retrofit of existing buildings would be the major



Jane Long, Chair,
California's Energy Future Project



Amory Lovins
Founder and CEO of Rocky
Mountain Institute

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Low Energy Buildings continued

code implementation to improve code compliance (join us at our informal session on this topic on Tuesday) and developing new approaches to standards to capture greater savings (the topic of another informal session this afternoon).

We are also pursuing new opportunities, strategies, and tools and identifying research needs to improve our effectiveness. Our latest report, *Mobilizing Energy Efficiency in the Manufactured Housing Sector*, explores opportunities in this underserved market. At the end of this year, we'll release a study better categorizing "other" end-uses in the residential and commercial sectors and suggesting ways to capture savings from this growing slice of the buildings energy use pie. Other areas of interest include expanded analysis of actual energy use data from real buildings and better data on building retrofit savings. We are also looking into programs and tools that most effectively supplement informational efforts to drive adoption of efficient technologies and behaviors. While much of our work focuses on opportunities in individual buildings or the buildings sector writ large, community-scale approaches will get more attention as we move systems-thinking to the neighborhood level and beyond.

We'd love your input and ideas for ways we can work together or areas where ACEEE can have the most impact. Please look for me or others from the ACEEE Buildings team—Harvey Sachs, Harry Misuriello, and Sameer Kwatra—and let us know what's on your mind. And, if you're interested in joining the team to work with us on these issues, check out our job posting and track me down.

ANNOUNCEMENTS

The International Energy Program

Evaluation Conference just issued their Call for Abstracts. Abstracts are due Dec. 3. Pick up the Call for Abstracts at the ACEEE Summer Study Office at Surf and Sand. Alternatively, look for it on the IEPEC website: www.iepec.org. This is *THE* premier evaluation conference; start thinking and submit early!

Program Manager—Buildings and Codes.

Alliance to Save Energy seeks an experienced, highly qualified individual to lead team projects on codes and other buildings EE initiatives. Contact Jeff Harris or Maureen Guttman this week or check <http://ase.org/jobs> starting next week.



"My buildings will be my legacy... they will speak for me long after I'm gone."

Julia Morgan, the original YWCA architect for Asilomar



Opening reception Hearst Social Hall.

PIE-RATS AND PIRATES

Young college men and local high school boys hired each summer by the YWCA were dubbed the "pie rats" because they were often caught raiding desserts—particularly pies—from the kitchen between meals.

"When one first comes to fog-swept, pine-clad Asilomar to join the band of workers, he is impressed with the "differentness" of the place. As each worker goes, he goes not as he came—alone—but he goes taking with him the spirit of Asilomar, a something hard to define, yet a something that everyone should possess. He goes, we hope, a little better enabled to live with folks than before he came. He goes away a little different than he came, the "differentness" of the place having become a part of him."

—From the 1931 issue of The Pie Rat Newsletter. *It forms the basis for the Asilomar Vision Statement.*

INFORMAL SESSIONS

2-4 pm

Zero Energy Commercial Building Consortium (CBC) Stakeholder Meeting.

Christopher Wagner, Zero Energy Commercial Building Consortium. ROOM: Marlin

The CPUC and EM&V: Annual Reporting to Improve Energy Efficiency Programs, Increase Public Engagement and Drive Savings.

Carmen Best with Kristina Skierka, Energy Initiatives on behalf of the California Public Utilities Commission. ROOM: Acacia

Motivating Contractor Participation: A Roadmap to Home Efficiency Network Development.

Tiger Adolf, Building Performance Institute, Inc. and Ed Thomas, Utility and Government Services, EGIA. ROOM: Chapel

Getting to 2 million homes per year in North America: Innovating the Home Energy Retrofit Industry.

Chris Granda, One Change Foundation. ROOM: Scripps

Residential Household Electricity Intensity Trends and Residential End-use Metering.

Dennis Nelson, BC Hydro. ROOM: Evergreen

The Future of Appliance Standards.

Marianne DiMascio, Appliance Standards Awareness Project. ROOM: Fred Farr Forum

Strategic, Role-Based Approaches to Creating Training and Certification Programs.

Jill Marver, Pacific Gas and Electric Company. ROOM: Heather

Efficiency Opportunities in Apartments and Condos.

Don Hynek, Wisconsin Division of Energy Services. ROOM: Kiln

EE Workforce Development: Where Are We Two Years Later?

Larry Holmes, NV Energy. ROOM: Nautilus

The International Building Energy Exchange: Facilitating International Collaboration through Better Information.

Allison Bard, The Cadmus Group, Inc. ROOM: Oak Shelter

The International Building Energy Exchange: Facilitating International Collaboration through Better Information.

Alison Delgado, Pacific Northwest National Laboratory. ROOM: Sanderling

Flaws and Shortcomings in California's Appliance Efficiency Standards Process—And What To Do About It.

Doug Johnson, Consumer Electronics Association. ROOM: Toyon

The Thousand Home Challenge: How Deep is Deep Enough?

Linda Wigington and Eric Coffman, ACI. ROOM: Hearth Living Room

The Value of Training and Certification Accreditation.

Olga Gazman, NEEC. ROOM: Embers Living Room

Using Energy Modeling of Existing Buildings to Light the Spark.

Mike Opitz, Cadmus Group. ROOM: Afterglow Living Room

4-6 pm

Bi-Level Lighting: Paving the Way to Energy Savings in Parking Garages.

Joseph Lande, Energy Solutions. ROOM: Acacia

Evaluator Want to Hear from Non Evaluators about Their Evaluation Needs and Peeves.

Robert M Wirtshafter, Wirtshafter Associates, Inc. ROOM: Chapel

Quantifying the Magnitude of the Buildings EE Industry under Transformational Scenarios.

Adam Hinge, Sustainable Energy Partnerships and Bill Sisson United Technologies Research Center. ROOM: Scripps

Shed Those Unwanted kWh with FLEXLAB!

Cindy Regnier, Lawrence Berkeley National Laboratory. ROOM: Evergreen

Making Thermostats More Efficient to Save Heating and Cooling Energy.

Robert Mowris, Verified®, Inc. ROOM: Fred Farr Forum

WAP Multifamily Energy Upgrade Continuum of Resources.

Jennifer Somers and Josh Olsen, U.S. Department of Energy. ROOM: Heather

Get to Know the DOE U.S. Residential Lighting End-Use Consumption Study.

Michael Poplawski, Pacific Northwest National Laboratory. ROOM: Kiln

Achieving Deeper Retrofits—How Can We Shift Program Models From A Focus On Measures And Incentives To Customers And Other Drivers?

Phil Welker, PECL. ROOM: Nautilus

Inside The Black Box: How Can Technology Can Advance California's Upcoming Standards?

Daryl Hatano, ON Semiconductor. ROOM: Triton

Code Compliance Insights from Practitioners (Not Just Policy Wonks).

Nehemiah Stone, Benningfield Group. ROOM: Oak Shelter

Air Sealing in Multifamily Building Retrofit Programs, and IAQ Impacts.

Marian Goebes, Heschong Mahone Group and Andy Brooks, Association for Energy Affordability. ROOM: Sanderling

Better Buildings Neighborhood Program—Lessons Learned in Residential Energy Upgrade Program Design & Implementation.

Danielle Sass Byrnett, U.S. Department of Energy. ROOM: Toyon

Cost-Effective? A Discussion of the challenges with and solutions to the TRC and other because frameworks.

Philippe Dunsky, Dunsky Energy Consulting. ROOM: Marlin

Got Something to Report?

If you have any announcements, updates, or information related to events here at ACEEE, drop them off at the Surf and Sand room to the attention of *The Grapevine* Staff in "Report Basket" or email them by 3:30 pm to jpgunshinan@homeenergy.org. *The Grapevine* will also appear on the ACEEE Blog at www.ACEEE.org/blog.

Monday Night's Plenary Speaker—Jon Wellinghoff

“A Day In the Life of the Grid”



Jon Wellinghoff is in his third year as Chairman of the Federal Energy Regulatory Commission (FERC), having been appointed by President Obama just a few months after the President's inauguration in 2009. He comes to the chairmanship after 37 years of experience in regulatory, consumer, and commercial law, and before

joining FERC, Wellinghoff was in private practice serving clients in the areas of renewable energy, energy efficiency, and distributed generation. He served two terms as the State of Nevada's first Consumer Advocate for Customers of Public Utilities where he did groundbreaking work in the planning process for utility integration and was the primary author of the Nevada Renewable Portfolio Standard.

Chairman Wellinghoff's focus at FERC is working to open wholesale electric markets to renewable energy resources, including providing a platform for participation of demand response and other distributed resources in wholesale electric markets, including energy efficiency and local storage systems such as those in plug-in hybrid and all electric vehicles. He is also focused on promoting greater efficiency in our nation's energy infrastructure through the institution of advanced technologies and system integration.

In 2011, he successfully negotiated a Memorandum of Understanding between FERC and China's National Energy Administration. The MOU benefits both organizations through the sharing of best practices, facilitating communication and providing a platform for cooperation by related enterprises from both sides.

Clearly, the Chairman is a great fit for the Summer Study. He will be speaking tonight at 7:30 in Merrill Hall. The title of his talk is “A Day In the Life of the Grid”.



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Sunday's Plenary Speakers continued

cost, surprisingly, while making new buildings more energy efficient is much less expensive, compared to business as usual. (Long raised a question that she hopes is discussed here at Summer Study. Is it better to demolish buildings rather than retrofit them?) To achieve an 80% reduction in 1990 GHG emissions by 2050, automobile fuel efficiency would have to reach an average of 75 mpg.

And if we could reduce building energy use to the extent possible, achieve the higher average mpg of cars and trucks, and reduced industrial energy use as much as possible given existing and technology now being developed, make good use of biofuels, and catch and sequester as much carbon as we can, we would still need 27 billion gallon of gasoline equivalent (bgge)/year of fuel whose carbon we can't sequester. There is just not enough space to inject and store the carbon in a way that is safe and reliable.

To solve our fuel challenges, we need research. We do that pretty well. But to increase efficiency, we need policy changes, and that is a much greater challenge because it has to do with changing people's thinking and behavior.

Amory Lovins' RMI has been described as a think-and-do tank, which seems to make it the perfect answer to Long's challenges. Lovins began by asking the audience, would we rather die of oil wars, climate change, nuclear holocaust, or none of the above?

Lovins asked us to re-think our assumptions about energy. Can we conceive of 125 miles per gallon average fuel efficiency in our cars? It's possible with cars made from light weight carbon fiber. Can we imagine buildings in cold climates that meet 90% of their heating energy need during the coldest winter nights without fuel of any kind, but with smart, integrative design strategies instead?

We also need to change our ideas about oil company executives. Some are asking the right questions and preparing for a carbon-less economy because it makes good business sense. The military wants to ween itself off of fossil fuels because it feels its future security depends on it. And while it does so it teaches the rest of us how it's done. There are things happening right now behind the scenes.

Amory's TED Talk:

TED.com/talks/amory_lovins_a_50_year_plan_for_energy.html

Foreign Affairs Article:

RMI.org/Knowledge-Center/Library/2012-01_FarewellToFossilFuels

