BUILDING INDUSTRY RESEARCH ALLIANCE
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BIRAmeter

LEADING THE WAY TOWARD MARKETABLE ZERO ENERGY HOMES 2nd QUARTER | 2008

ACEEE 2008: Residential Plug Loads and Controls: What's New, What's Next?

BIRA has begun research into applications of control systems for miscellaneous electric loads (MELs) in response to the growing proportion of MELs in today's whole house energy consumption. In high performance homes these loads can account for 20 - 25% of the total energy consumption. Targeting this load is a crucial step towards achieving Net Zero Energy Homes.

There has already been a considerable amount of research done in this field, but with little collaboration amongst researchers. In response to this, BIRA will be hosting an Experts' Meeting as part of the upcoming 2008 American Council for an Energy Efficient Economy (ACEEE) Summer Study on Energy Efficiency in Industry. The purpose of this Experts' Meeting will be twofold: it will provide attendees an opportunity to become more familiar with the latest research and development in the field, and it will provide those performing the research the opportunity to discuss their progress. This should spur productivity through a collaborative exchange of knowledge.

The meeting is titled Residential Plug Loads and Controls: What's New, What's Next? Discussions will include electricity feedback systems, control systems, automated load management, and smart grid integration as a means to address plug loads and extraneous energy use. The conference will be held in Pacific Grove, California at the Asilomar Conference Center, August 17 - 22 with the Experts' Meeting being held on Tuesday the 19th. Passes for the conference are available on the ACEEE website at www.ACEEE.org.

Building America Stage Gate 1A: We Want You!

In a continuation of work to achieve Net Zero Energy Homes by 2020, BIRA is beginning work on the next tier of energy efficiency and home performance. To facilitate the most effective development and implementation of building strategies, Building America developed a Stage Gate Process for measuring work towards energy savings milestones in each of Building America's five climate zones. Although this process was in place for previous milestones, most of those saving goals were achieved simply by ensuring that the houses were built using high efficiency off-the-shelf equipment with high quality building practices (quality insulation installation, tight envelopes, appropriately sized equipment, etc.); therefore, a heavy investment in evaluating new or emerging technologies was not critical to success. However, as we continue to strive for increased energy savings, it becomes increasingly important for us to utilize the Stage Gate Process to strategically evaluate new and emerging technologies and building practices.

The first step, designated Stage Gate 1A, is for BIRA to identify various cost-effective, climate zone-specific strategies that can be used to reach the next Building America milestone. Simultaneously, BIRA is identifying the partners needed to achieve these goals. These partners include researchers, developers, suppliers and builder partners. As BIRA goes through this process, partners will play an integral role by providing feedback on how practical the proposed strategies are and whether they will achieve the desired energy savings while maintaining long term cost neutrality. Currently, BIRA's priorities lie in developing and testing technologies and strategies to achieve 40% energy savings in the Cold/Very Cold Climate Zone, 50% savings in the Hot/Mixed-Dry Climate Zone, and 50% savings in the Marine Climate Zone. If you are interested in working with BIRA to develop and implement these strategies, please send your interest to BIRA@ConSol.ws.

Building America U.S. Department of Energy
Research Toward Zero Energy Homes

PCBC 2008: Greening Affordable Housing One Innovative Home at a Time

This year's Pacific Coast Builders Conference (PCBC®) was held the week of June 23rd at the Moscone Center in downtown San Francisco. As the largest regional homebuilding industry trade show in the nation, "The Premier Building Show" featured over 600 exhibitors in more than 230,000 square feet of exhibit space. In addition to the show floor, dozens of speakers presented their perspective on the new residential homebuilding industry. One of these speakers was Abe Cubano, Buildings Research Engineer at ConSol. Cubano presented on the groundbreaking Citihouse project being built by Alvis Projects in Fresno, California as part of the City of Fresno's "Green Building Demonstration Project" (featured in the Third Quarter 2007 BIRAmeter).

Stephen Sotomayor, representing the City of Fresno, and Marlin Alvis, owner of Alvis Projects, also presented their individual experiences with the project and how green building can be cost-effective and relatively easy to achieve. Sotomayor explained how the City of Fresno put together an effective team and found funding for the project. Alvis addressed his company's motivation to be involved in the project, the problems they faced and the solutions they found; and strategies and lessons they learned along the way. Cubano anchored the presentation with an explanation of why residential new construction is important in the overall energy picture, how the Building America Program seeks to solve this problem, and why BIRA's involvement in this project was important. The presentation concluded with a short video featuring key players in the Citihouse project.

The presentation demonstrated that it is possible to cost-effectively build a home that uses significantly less energy. To see the presentation in its entirety, please visit BIRA's website.

Introducing the Southwest to High Performance Homes

Throughout the second quarter of 2008, ConSol Principal and BIRA team leader, Dr. Rob Hammon, traveled across four states to present at five different workshops on sustainable building. To view the presentations, please visit the links provided.

Salt Lake Sustainable Building Conference

April 29, 2008 – West Valley City, Utah

Produced by an independent team of public and private professionals, the conference featured a full day of speakers, presentations, panels, and case studies from national leaders on high performance building. The keynote address was given by nationally recognized Ed Mazria of Architecture 2030. Hammon presented on three separate communities, each exemplifying a different aspect of green building: energy savings for the utility, cost-effectiveness for the homeowner, and sales acceleration for the builder.

SWEEP Workshops on High Performance Homes

April 30, 2008 – Salt Lake City, Utah
May 7, 2008 – Phoenix, Arizona
June 10, 2008 – Las Vegas, Nevada

Produced by the Southwest Energy Efficiency Project (SWEEP) and their partners, these workshops focused on constructing and selling high performance homes. In these workshops, Hammon presented to builders on strategies to reach current and future Building America energy savings levels. Each presentation was individually tailored for the climate zone presented and even featured a look at strategies to reach net zero energy using advanced technologies such as Structural Insulated Panel (SIP) walls, geothermal heat pumps, and photovoltaic-thermal (PVT) systems.

SWEEP Moving Toward Zero Energy Homes Workshop

June 20, 2008 – Albuquerque, New Mexico

This workshop was produced by SWEEP and the State of New Mexico's Energy, Minerals & Natural Resources Department. In addition to covering topics from previous workshops, Hammon also presented a strategy for builders in Albuquerque to achieve a 60 HERS rating, qualifying them for the New Mexico Residential Sustainable Building Tax Credit. A roundtable discussion was also held at this workshop to discuss barriers to building high performance homes in New Mexico and how these barriers could be overcome.

BIRA

The Building Industry Research Alliance (BIRA), a U.S. Department of Energy Building America team led by ConSol, produces the quarterly BIRAmeter. BIRA works with over 80 partners to produce marketable energy efficient solar homes and communities aimed at net zero energy by 2020.
For more information please visit www.BIRA.ws or e-mail BIRA@ConSol.ws.