

## Buildings Technology Research and Development Subcommittee Meeting

December 17, 2009

Location: 950 L'Enfant Plaza DOE  
Time: 1:30-3:30 p.m.

### Attendees<sup>1</sup>

Shyam Sunder  
Dru Crawley  
Kevin Hurst  
Paul Domich  
Brian Holuj  
Alan Schroeder  
Mark Halverson  
Dale Manty  
Bill Swietlik  
Joni Tetter  
Diane Stewart  
William Grosshandler  
Ewa Lewandowski  
Bob Kollm  
Renee Tietjen  
Sarah Ryker  
Stephanie Shipp  
John Taggart  
Julio Arrocho  
Martin Sovoie

### Agency/Office

DOC/NIST  
DOE/EE-Buildings  
EOP/OSTP  
DOC/NIST  
DOE/EE-Buildings  
DOE/EE-Buildings  
PNL  
EPA  
EPA  
EPA/GSA  
HHS  
NIST  
Smithsonian  
US Postal Service  
VA  
STPI  
STPI  
STPI  
USACE  
USACE

BTRD Co-chair  
BTRD Co-chair  
BTRD Ex-Sec

**Next Meeting:** February 18, 2010 1:30 - 3:30 PM, 950 L'Enfant Plaza DOE

### Meeting Calendar:

January 21, 2010 (cancelled)	July 15, 2010
February 18, 2010	August 19, 2010
March 18, 2010	September 16, 2010
April 15, 2010	October 21, 2010
May 20, 2010	November 18, 2010
June 17, 2010	December 16, 2010

**Introductions:** Subcommittee Co-chair Dru Crawley (DOE) opened the monthly meeting of the Subcommittee for Buildings Technology Research and

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<sup>1</sup> Active Members not attending identified in light gray

Development (BTRD) welcoming the agency representatives and thanking them for their participation. Participants provided self-introductions.

**Review of Minutes:** Informal review of Minutes for November 19, 2009 was performed prior to the start of the meeting.

**Building America/Builder's Challenge:** Terry Logee, Technology Development Manager, of the Residential Program/EERE/DOE presented *Building America, Residential Integration Program, New & Existing Homes*. The Residential Integration Program focuses on reducing energy consumption in both new and existing homes, working towards zero energy consumption through efficiency gains with on-site renewable energy generation. Much of the program development is done in collaboration with the DOE National Laboratories, HUD, and EPA.

For context, According to the Building Technologies Program's [2008 Buildings Energy Data Book](#), in 2006:

- The U.S. had approximately 113 million residential buildings.
- Residences accounted for 21% of primary energy consumption in the U.S. and 20% of carbon dioxide emissions.
- \$225.6 billion was spent on energy for residences.
- 59% of homes were built in 1979 or before.

The program initially addressed new construction, though the program focus on retrofits of existing residences has just begun. This is due in part to the slowdown in residential construction and the increased interest in upgrading existing buildings (e.g., ARRA funding for weatherization). New home activities include *Building America New Homes R&D*, *Builders Challenge*, and coordination across Federal departments, agencies, and initiatives. For existing homes, activities include *Residential Retrofit R&D*, enabling activities, coordination across Federal departments, agencies, & initiatives, and outreach, market conditioning, & technology transfer.

Primary energy end use for residences include space heating(26%), space cooling (13%), water heating (12.5%), lighting (11.6%), electronics (8.1% and increasing), refrigeration (6.2%) and a number of smaller categories (19%). Costs for energy use generally follow the same rank order with space heating contributing to a full 30% of residential energy expenditures.

For new construction, goals for the Building America New Homes achieving cost neutrality on NZEH by 2020 in all climates. Goals for *Builder's Challenge* include building 220,000 houses at the 30% energy savings level by 2012 and ramping up in energy efficiency to NZEH by 2030. For retrofits, *Building America Existing Home Retrofit* goals include developing retrofit labeling (2010), rating software (2010), reduce energy use in existing homes by 30% or more, develop business case studies that reduce energy use by 30% or more, continue technology R&D

to reduce energy use by 50% or more, and support Home Performance with ENERGY STAR.

Software for evaluating building performance is a key tool for designing and retrofitting residential buildings. The U.S. National Renewable Energy Lab and collaborating with most of the retrofit software simulation developers, has created a benchmark for building energy simulation programs entitled BESTESTEX. BESTESTEX is a comparative testing procedure for thermal building simulations primarily related to the building envelope. Software developers are working with DOE to ensure that software rating tools consistently and accurately evaluate projected building energy performance. Gaining consensus in BESTESTEX is an important factor in accelerating adoption of new energy-efficiency design tools. These tests remain dependent on accurate and current cost data for buildings and this factor remains problematic. BESTEST-EX is the most current version under review.

For more information, please see the attached presentation or <http://www1.eere.energy.gov/buildings/challenge/>

**Senior Leader Briefing and Workshop on Net-Zero Energy, High-Performance Green Buildings:** Paul Domich (EPA) and Dale Manty (EPA) provided an overview of the current status of a spring senior policy briefing and workshop for federal high-performance green buildings. Currently, a number of federal groups have indicated interest in cosponsoring the workshop. The cosponsors now include:

- Subcommittee for Buildings Technology Research and Development
- Federal Facilities Council
- GSA Office of Federal High-Performance Green Buildings
- DOE Commercial Buildings Program
- DOE Federal Energy Management Program
- Federal Interagency Sustainability Working Group/FEMP
- Federal Real Property Advisory Council (pending)
- Council on Environmental Quality

GSA is contracting with the National Academy of Science to facilitate and document the outcomes from the workshop. Lynda Stanley (NAS) is leading the effort with GSA. Timing for the first workshop remains open, pending finalization of the contracting details with NAS. Once the details are resolved, planning the workshop and identifying participants will begin. NAS will identify a small group of experts to help formulate the focus for the workshops and to identify the key issues. The NAS working with the expert panel will develop a report based on the conclusions identified and will publish approximately 500 copies of the workshop report. The issue of inviting “green building” advocacy groups was discussed. Please see the attached Workshop Outline for more details.

**January 21, 2010 Meeting will be cancelled**

**Closure:** Crawley closed the meeting at 3:30 p.m. and thanked the agency representatives for their participation.