

# Buildings Technology Research and Development Subcommittee Meeting

June 18, 2009

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

## Attendees<sup>1</sup>

|                               | <b>Agency/Office</b>     |               |
|-------------------------------|--------------------------|---------------|
| Shyam Sunder                  | DOC/NIST                 | BTRD Co-chair |
| Jerry Dion                    | DOE/EE-Buildings         | BTRD Co-chair |
| Mary Lecis (for Jerry Dion)   | DOE                      |               |
| Dru Crawley                   | DOE                      |               |
| Kevin Hurst                   | EOP/OSTP                 |               |
| Paul Domich                   | DOC/NIST                 | BTRD Ex-Sec   |
| Dru Crawley                   | DOE/EE-Buildings         |               |
| Alan Schroeder                | DOE/EE-Buildings         |               |
| Sean McDonald                 | PNNL                     |               |
| Gale Bentkover                | EPA                      |               |
| Dale Manty                    | EPA                      |               |
| Diana Bauer                   | EPA                      |               |
| William Swietlik              | EPA                      |               |
| Larry Bank                    | NSF                      |               |
| Tony Busha                    | DOE                      |               |
| Kevin Kampschroer             | GSA                      |               |
| William Brodt                 | NASA                     |               |
| Patrick Hughes (by telephone) | ORNL                     |               |
| Robert Sandoli (by telephone) | OMB                      |               |
| Amy Sch..                     | OMB                      |               |
| Renee Tietjen                 | Architect of the Capitol |               |
| Chris Smith                   | Architect of the Capitol |               |

**Next Meeting:** July 16, 2009, 1:30 - 3:30 PM, 950 L'Enfant Plaza DOE

July 16, 2009  
August 20, 2009  
September 17, 2009

October 15, 2009  
November 19, 2009  
December 17, 2009

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

**Introductions:** Subcommittee Co-chair Shyam Sunder opened the Subcommittee for Buildings Technology Research and Development (BTRD) welcoming the agency representatives and thanking them for their participation. Participants provided self-introductions.

**Review of Minutes:** Informal review of Minutes for May 28, 2009 was performed prior to the start of the meeting.

**Update on Policy Discussions for Building Technologies:** Kevin Hurst (OSTP) provided a brief overview of recent discussions within the Administration on policies and programs that will lead to more energy efficient residential and commercial buildings. Overall, there is EOP support for an analysis of policy and regulatory options focused on the buildings sector that integrates the efforts of government at all levels, industry, and public interest and community development groups. Three options available for such a study include:

- **Status Quo:** an overview existing policies and regulations. This option would include a review of best practices at the international, federal, and state levels and provide an analysis of the impacts of these programs.
- **Detailed Analysis of Current Policy Proposals:** This option would entail a review of policies and regulations contained in current and proposed energy efficiency legislation. The analysis would include the policies and regulations contained in Waxman-Markey legislation focused on improving energy efficiency in buildings.
- **Forward Looking:** This option would cover both a retrospective and prospective analysis of a full range of policy and regulatory options and include a review and analysis of current policies and their effectiveness. New energy efficiency policies and regulations would be identified and their potential impact to accelerating technology adoption analyzed.

Each type of study would provide information and analysis and would not provide recommendations on specific policies or regulations that should be implemented.

Ideally, the third option would look at policy alternatives available for residential and commercial buildings, determine the effectiveness of the alternatives, and offer suggestions on how the policies can be improved. Additionally, the study should classify the types of policies examined, describe the best of breed implementation, and formulate new policy options that should be considered. This type of study would leverage existing programs, extend programs that are proven to be beneficial, and define new programs as is appropriate.

Such a study would be useful in developing the policies and regulations required to accelerate the adoption of energy efficient building technologies and would complement the prior work products of the subcommittee including:

- The Federal R&D Agenda for Net-Zero Energy, High-Performance Green Buildings

- The Implementation Plan for Net-Zero Energy, High-Performance Green Buildings
- The GHG Addendum to the Implementation Plan for Net-Zero Energy, High-Performance Green Buildings

Taken together, these Subcommittee products have elevated the stature of buildings technology R&D within the Federal R&D community. With many new Federal programs and budgets still under development, the work of the BTRD will still have an impact on future programs put forth by the Administration and the U.S. Congress.

Other details: The Subcommittee should determine 1) if the Subcommittee wishes to conduct or supervise the development of a policy study, 2) determine what type of study be performed, and 3) define the scope of the study, and 4) determine resources that can be used to conduct the study. There is no specific deadline or timeframe for the completion of this study.

A discussion of the proposed policy study proposal developed by the BTRD leadership team elicited a number of constructive comments. First, the proposal should stress that policy/regulations alone will not solve the building energy problem – nor will R&D/technology advances alone. New policies, regulations, and incentives are not a substitute for future investments in new technology R&D. Both policy and technology development must work together to achieve the efficiencies (70%) that are required. The proposed survey of existing policies is a necessary first step, but the study should encompass both retrospective and prospective analysis of the policies and incentives needed.

Policy options should encourage future R&D and reward new and innovative approaches and designs. As an example, incentives focused at architects and homebuilders could provide rewards for designs or retrofits that significantly advance the best practices in the field. The proposed study should also take an integrated look at the R&D/technology implications to policy development. In some instances, it may be crucial to integrate multiple policy options with anticipated R&D advances. Similarly, a lifecycle “whole” building perspective should be used to minimize unintended impacts to occupant/worker health, material and water resource consumption, and the environment.

Past studies performed in this area (e.g., NAS Study) should be reviewed as well as comparisons of effective buildings codes and standards, and international programs that are successfully transforming the building sector. The Subcommittee charted a course for the next month and will identify current existing policies.

**Action Item:** Sean McDonald (PNNL) and Dru Crawley (DOE) will identify existing databases and resources that describe the current state of policies and regulations for buildings. This material will be presented at our July 16<sup>th</sup> meeting.

**Action Item:** Paul Domich will make changes to the draft policy proposal.

**World Business Council for Sustainable Development Report**

**“Transforming the Market”:** **Overview:** Sean McDonald presented a detailed analysis performed by Mark Halverson (PNNL) of the “World Business Council for Sustainable Development Report “Transforming the Market” report. The report focused on six markets: Brazil, China (Case Study: multi-family homes), Europe (Case Studies: single family homes - France, Retail - UK), India, Japan (Case Study: offices), and the United States. Please see the attached analysis for the full description of the results and also refer to the May 28<sup>th</sup> Meeting of the BTRD Subcommittee.

**Agency American Recovery and Reinvestment Act Activities:** Two presentations were given on current Agency American Recovery and Reinvestment Act (ARRA) investments at federal agencies. The first presentation was given by Kevin Kampschroer (GSA) and the second by William Swietlik (EPA). For additional details, please see the attached presentations or <http://www.recovery.gov/?q=content/investments-agency> for detailed agency specific information. A summary of the presentation follows.

**GSA ARRA Presentation:** Kevin Kampschroer of the GSA High Performance Green Building Program presented a high level overview of GSA’s Public Buildings Service (PBS). GSA is a landlord for over 400 federal agencies, bureaus, and commissions with a portfolio of 353.9M rentable square feet, space for over 1,000,000 tenants, and 8,603 owned and leased assets. Of these properties, 30 are LEED certified properties. Total appropriations for FY08 was \$8.23B with \$881.2 M in new project starts in FY08. PBS projects funded by ARRA are classified in four categories: new construction, full and partial building modernizations, limited scope projects, and small projects. Of a total ARRA distribution of \$5.55B, \$4.274B is allocated to the High Performance Green Building Program across three subcategories: full and partial building modernizations received \$3.168B, limited scope building projects \$807M, and small building projects \$299M. The remaining ARRA funds were distributed to address needs in border stations, federal buildings and U.S. Courthouses, building operations, and other smaller programs. The GSA National Capital Region received that largest portion of ARRA funds (\$1.22B)

Of the \$4.5B focused on high-performance green building projects improvements included:

- Renewable energy—photovoltaics and wind
- Roofing, including green roofs
- Windows
- Lighting replacement
- High-performance building systems
- Advanced metering

Allocations were made based on energy savings and speed of delivery. Projects selected have been designed or are in design with a focus on energy efficiency, and that can be developed and awarded quickly. GSA is looking to compress existing work processes to accelerate the procurement process and obligation of funds.

Challenges face GSA in quickly updating building designs to meet current or future mandated performance specifications. GSA is working with the DOE Building Technologies Program to optimize the designs and to prioritize design alternative and improvements. Improved indoor lighting was identified by GSA as a profitable area of investment to reduce energy cost and to improve indoor environmental quality. GSA total obligations as of 6/15/09 totaled \$249,906,882

**EPA ARRA Presentation:** William Swietlik of EPA's Office of Policy, Economics, and Innovation provided an overview of the EPA ARRA program investments. The ARRA appropriated \$7.22B to EPA. EPA investments are focused in 6 areas. These include:

- Brownfields projects (\$100M)
- Clean Water State Revolving Fund (SRF) Grants (\$4B)
- Safe Drinking Water Capitalization Grants (\$2B)
- Leaking Underground Storage Tank Trust Fund
- Diesel Emissions Reductions
- Superfund Hazardous Waste Cleanup.

The legislation for the SRF Grants instructs that not less than 20% will be allocated for projects that include green infrastructure, improvements to water or energy efficiency, or other environmentally innovative activities. Funding for these programs are specifically intended to create green jobs and sustainable communities, promote scientific advances and technological innovation, and ensure a healthier environment. The programs target location-specific, community based public health and environmental needs.

In addition, EPA Administrator Lisa Jackson has offered EPA expertise to assist other federal agencies in their ARRA implementation efforts and in compliance with environmental statutes (e.g. NEPA) that might affect ARRA projects. Areas of EPA expertise include:

|                       |                                      |
|-----------------------|--------------------------------------|
| Statue Compliance     | E-Cycle                              |
| Environmental Justice | EPEAT                                |
| Green Buildings       | Green Highways                       |
| Green Jobs            | Smart Growth                         |
| Abandoned Mine Lands  | Lead Hazards                         |
| Alternative Vehicles  | Brownfields                          |
| ENERGY STAR           | Environmentally Preferred Purchasing |
| Green Remediation     | Water Resources                      |
| Storm Water           | Healthy Schools                      |

Additional information can be found online at <http://www.epa.gov/recovery/> – please contact Bill Swietlik at 202-566-1129 for further information. As of June 26, 2009, EPA total funds available is approximately \$7,220,000,000 of which \$2,700,000,000 has been awarded.

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