



BEDES Technical Working Group

Seventh Meeting—Monday June 16, 2014 1:00-5:00 EDT (10:00a-2:00p PDT)

Convener: Rick Diamond, LBNL

Facilitator: Dr. Jonathan Raab, Raab Associates, Ltd.

Meeting Summary (all times in EDT)

28 people attended the TWG meeting either in person in DC or at LBNL or by phone (see attendee list in Attachment 1). The slides used by LBNL can be found on the website [HERE](#).

1:00 Welcome, Introductions, and Today's Agenda—Rick and Jonathan

- We are shifting from module 1 to module 2.

1:10 Introduction to the Module 2 —Robin

- We have a forum where we can post and provide feedback about what we are proposing - <https://groups.google.com/a/lbl.gov/forum/#!/forum/bedes-twg>

1:30 Module 2 Initial Issues—LBNL Team

- Envelope – Robin
 - Building Geometry
 - Consider developing an arbitrary nomenclature that would allow any number of sides with proper names (i.e. N1, E1, S1, W1 for a square).
 - BEDES is a dictionary so there is no enforced coupling between zones and geometry.
 - Surfaces
 - Walls, ceiling/roof, floor will become more generic to define “Surface types”
 - Keep enough detail to estimate the thermal properties of the surfaces.
 - Two R-values, one for the entire assembly (which includes interior and exterior film coefficients), and one for each component (which does not include film coefficients).
 - LBL will consider terms for roof geometry (tilt)
 - Surface Finish/framing – these proposed added terms allow you to do more accurate modeling
 - Surface insulation –type (loose fill, batt, etc), insulation material, thickness.
 - Materials

- LBNL may consider material definitions (conductivity, density, etc) even though AUC does not include these fields.
 - Fenestration – the nonopaque parts
 - Decided to keep only U-factor for windows and drop R-value.
 - Shading
 - BEDES to include information about surrounding shading and reflectivity.
- Measures – Shankar - Coordination with the Audit Use Case and eProjectBuilder
 - Classification
 - LBL to review and compile lists from:
 - Audit Use Case
 - eProjectBuilder
 - FEMP
 - The building retuning project (Elena)
 - Compliance tracking system
 - CPUC
 - DEER
 - SPT (standards program tracking)
 - Savings
 - Will be captured as an energy stream
 - Cost
 - LBNL to consider minimal terminology for costs on this version. Will look at EE3 Calculator for terms.

3:00 **Break**

3:30 **Module 2 Initial Issues—continued**

- Energy Storage/Generation – Lindsay
 - Generation
 - LBNL to consider terminology to define:
 - hybrid technologies
 - PV details
 - On and off-site generation (for a campus)
 - Storage
 - Include technologies such as phase change material and electric vehicle batteries.
 - Include terms relating to resource input/output, capacity, and metering.
- Controls and Operation -- Andrea
 - Operations
 - Benchmarking events, such as number of meals served in a restaurant, should be included here. Need a more complete list, Elena to provide.
 - LBNL to consider incorporating demand response event information into this version of BEDES.
 - Consider the term: Average Number of Occupants per event.
 - Controls

- Define more setpoint types, such as room temperature vs. supply air temperature.
- Consider information about the sensor, ie. Wireless, mounted, metered, date of last calibration,
- Capture information about operational controls, such as percent of outside air required, and air changes.

4:45 **Next Steps and Wrap-Up**

- a. LBNL completes terms and definitions in Module 2, and posts queries to the Forum on related issues as needed
- b. DOE (Elena) to provide LBNL with a list of benchmarking events, such as number of meals served in a restaurant
- c. LBNL and Raab Associates prepare meeting summary of 7th TWG and agenda for 8th TWG (on July 17th)

5:00 **Adjourn**

Attachment 1: Participants for TWG Meeting--Monday June 16, 2014

Washington (DOE)

1. Mike Brauch - yes
2. Julie Caracino - no
3. Marshall Duer-Balkin - yes
4. Darren Port - yes
5. Nora Wang - yes
6. Elena Alschuler - yes
7. Andrea Mercado - yes
8. Jonathan Raab - yes

Berkeley (LBNL)

1. Mark Costa - yes
2. Nicholaus Halecky - no
3. Bob Hendron - yes
4. Rob Hitchcock - yes
5. Devan Johnson - yes
6. Avery Kintner - yes
7. Jessie Knapstein - yes
8. Amir Roth - yes
9. Rick Diamond - yes
10. Shankar Earni - yes
11. Lindsay Holiday
12. John Mejia - yes
13. Robin Mitchell - yes

Phone-in

1. Daniel Fehrenbach - yes
2. Supriya Goel - no
3. Jon Keck - yes
4. John Ku - no
5. Joshua New - no
6. Emily Soontornsaratool - yes
7. Ash Banerjee