



Environmental Energy Technologies Division Lawrence Berkeley National Laboratory

Feedback & Input on the draft *BEDES Implementation Strategy*

Strategic Working Group Meeting 5
September 9, 2014

1. “Global Terms” are a more efficient way of addressing redundant descriptors.
2. HVAC sections on plant and distribution should be reviewed to be consistent with CAST and AUC
3. “Internal” and “Process” Loads should be combined into just one section named “Loads”
4. A spreadsheet format was the preferred choice for the initial BEDES 1.0 launch as being easiest to search, cut, and paste.
5. Later formats to include the searchable website as well as consideration for a possible PDF format.

- 5. The list of measures was viewed as useful, but too broadly defined to be sufficient for many potential users. In addition, the group recommended the proposed format for user-defined measures be adopted.**
- 6. Other:**

BEDES is composed of several different components:

- **BEDES Dictionary:** This is a dictionary of terms and definitions used to characterize a building
- **BEDES Exchange Schema:** There will be a set of BEDES compliant/compatible implementation “exchange formats” whose schemas are documented and which have standardized input and output file formats, which can be used by anyone (software developers, public entities such as cities or states) needing to characterize buildings within that use case.
- **BEDES Community:** The group of stakeholders, including software developers, government entities, e.g., cities and states, energy consultants, energy providers, e.g., utilities, etc.

In addition to BEDES is SEED, the *Standard Energy Efficiency Data Platform*

- The SEED interface helps users translate their data into the BEDES format, and then manages the data and shares it with others.
- As the community of SEED users grows, they will be standardizing their data in BEDES compliant formats.
- SEED will export data in standardized BEDES exchange formats, which will again strengthen the use of BEDES as a standard method of exchanging data.

1. **Leading by example**
2. **Naming and branding**
3. **Piloting and evaluating**
4. **Providing user support**
5. **Updating and maintaining**
6. **Transitioning BEDES to a new support model**
7. **Industry standardization**

Recommendation #1: DOE's Building Technology Office should use BEDES compliant tools wherever possible in its portfolio:

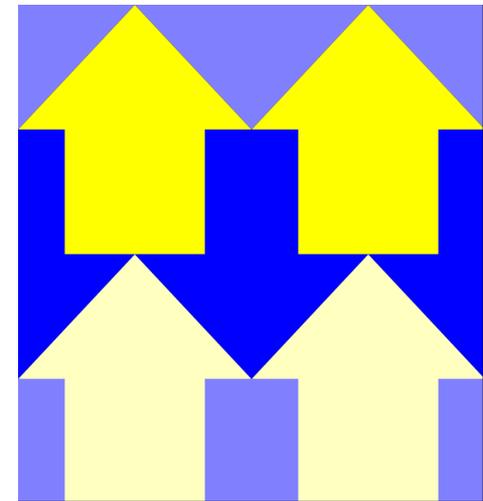
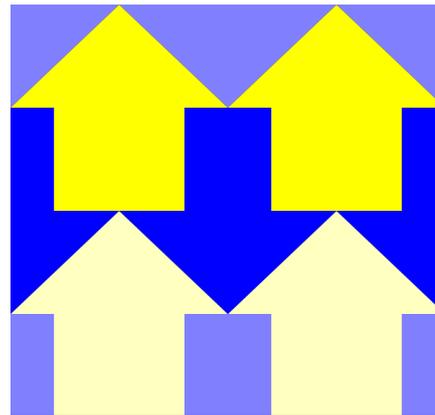
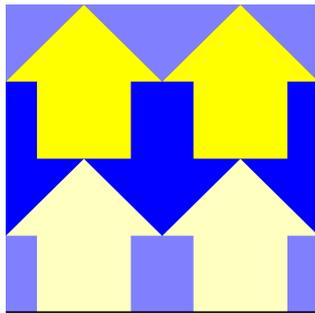
- **Current BTO tools:** *Building Performance Data Base (BPD), the Standard Energy Efficiency Data (SEED) Platform, Home Energy Score (HES), Audit Use Case (AUC), & the Commercial Asset Score Tool (CAST)*
- **Other federal tools:** *EnergyStar's Portfolio Manager and eProject Builder* are both aligned with BEDES
- **Future tools:** COMcheck and REScheck, as well as others, have overlapping use cases which can be mapped to BEDES

Recommendation #2a: The name *Building Energy Data Exchange Specification* “BEDES” be kept for the overall activity, and that individual components be referred to with “BEDES” as a descriptor.

Examples include:

- The *BEDES Dictionary 1.0*
- The *BEDES Use Case Schemas*
- The *BEDES User Forum*

Recommendation #2b: BEDES branding should include the BEDES logo. A possible candidate:



Recommendation #2c: BEDES branding should include a tagline. As an example:

“BEDES—For faster, easier, and universal building energy data exchange”

- **BEDES compliance allows use of the BEDES brand & logo.**

Recommendation #3: Pilot and Evaluate BEDES early adopters.

- Pilots can be used to determine if BEDES contains all the necessary terms and definitions
- The pilots help identify and develop necessary supporting documentation and guides, so that users can successfully implement BEDES and communicate their schemas and exchange protocols to others.
- The long-term goal, and measure of the success of BEDES, is that the BEDES Dictionary, BEDES Use Case Schemas, and standardized import and export file formats meet the needs of, and are widely implemented by, the primary building energy performance evaluators.

Potential Pilots for FY 2015

- **California Energy Commission & Schools.** The *CEC* is interested in a pilot with school data under AB 39. Specifying SEED/BEDES, for the reporting of energy data, which will facilitate the analysis and evaluation of the school energy retrofit projects.
- **Other California pilots.** Both the *City and County of Los Angeles* are interested in specifying SEED/BEDES for energy disclosure, benchmarking, and other applications such as building permitting. The County of Los Angeles is ready to evaluate SEED/BEDES for their immediate needs. This pilot could be used as the basis to develop audit data reporting formats for all of the cities with audit requirements.
- **Other early adopters.** The *Vermont Energy Investment Corporation (VEIC)*, the *U.S. Green Building Council (USGBC)*, the *City of Berkeley*, and others have expressed interest in piloting SEED/BEDES for their programs. These entities should be supported as resources allow.

Recommendation #4: Provide User Support.

- The long-term vision is for a BEDES foundation that reviews, supports and promotes BEDES use.
- In the short term, there is a need for the BEDES implementation team to provide user support, including how the stakeholders show compliance with BEDES through the development of the mappings and export file formats that determine compliance.
- Multiple methods for engaging users will be employed, such as postings to the forum, direct support, peer-to-peer, etc.

Recommendation #4: Provide User Support through compliance.

- Another example of needed user support is the facilitation of BEDES compliance. The BEDES implementation team, together with the help of the BEDES Community, can assist stakeholders with an interest in non-federal implementations, e.g., HPXML, USGBC/LEED, Green Button, RESO, and the California Standards Data Dictionary (SDD).
- Verification of BEDES compliance should be through a designated user group for that use case.
- The third party, with help from BEDES community members would develop mappings to be reviewed by LBNL.
- In the long term, the BEDES/SEED foundation will take over the task of reviewing mappings.

Criteria	Certified Mapping	Compliant Exchange Format
Application	Any Implementation ¹	Software file formats
Map to BEDES terms²	Yes	Yes
BEDES Community/Host approves mapping	Yes	Yes, unless developed using BEDES exclusively
BEDES Community/Host approves file format³	No	Yes
Public publishing	Optional	Optional
Use “BEDES” in its product marketing	Optional	Optional
Examples	Mapping of: CEUS, CBECS, Portfolio Manager	<i>BEDES for Commercial Audits, BEDES for Residential Audits, BEDES for Energy Data</i>

¹ Implementation refers to any software application, database, survey, schema, etc.

² Not all BEDES terms have to be used, only those that apply. Additional fields that are out of BEDES scope are allowed.

³ The exchange format does not apply to the database or internal schema, only to files meant to exchange data or out of the software. May also include a schema, validation rules, etc.

Recommendation #5: Provide scheduled updates to the BEDES Dictionary and on-going maintenance.

- The long-term vision is for a BEDES foundation that reviews, supports and promotes BEDES use.
- In the short term, there is a need for the BEDES implementation team to provide updates, additions, and maintenance.

Recommendation #6: Both BEDES and SEED should move toward a self-supporting model, managed by a non-profit organization.

- BEDES is currently supported by DOE and managed by Lawrence Berkeley National Laboratory (LBNL).
- The new entity will determine the funding strategy, which can include, but is not be limited to membership dues, fees for certifying mappings and compliance, paid technical support, etc.
- Examples of such models include the National Fenestration Rating Council, Green Button, and the Kualu Foundation, where groups combine their resources for mutual benefit.

Recommendation #6: Both BEDES and SEED should move toward a self-supporting model, managed by a non-profit organization

- During this expected 2-3 year transition, BEDES should continue to be supported by DOE and managed by the BEDES Implementation team. While DOE support and involvement may continue for a longer period, diverse funding sources are needed to achieve the full scale of the BEDES vision and ensure long-term financial viability.
- The BEDES Implementation team should actively recruit, support and foster the BEDES community, which will form the underpinnings of the BEDES effort in both the short and the long term.

Recommendation #7: Support BEDES becoming an industry standard.

- The goal for BEDES is to become the *de facto* industry standard for building energy data exchange.
- The BEDES Strategic Working Group explored the issue of whether to pursue the adoption of BEDES as an actual industry standard, e.g., ASHRAE, ANSI-ASTM, or ISO, and determined that it should be postponed to a later time.
- The short-term effort should be to encourage BEDES to be used widely and changed organically, before being codified as a formal industry standard.

The are currently five tasks included in the BEDES implementation plan for FY 2015:

Task 1. Develop BEDES website

Task 2. Support Partner Implementations

Task 3. Support Initial Adopters (Pilots)

Task 4. Provide Biannual Updates of the BEDES Dictionary 1.0.

Task 5. Initiate Transition Strategy for Managing BEDES.

Task 1. Develop BEDES website

- The BEDES implementation team will develop a basic website to host BEDES 1.0, including a searchable version of the BEDES dictionary so that users can find fields related to specific topics or used in specific schemas.
- The website will include links to interactive BEDES forum for topics. The website will also link to schemas that are BEDES compliant.
- The target date for the website is 3/31/2015.

Building Energy Data Exchange Specification Collaborative Web Platform

BEDES Dictionary



Filter
Sort

Search
Save

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Forum



Propose New Terms

Term:

Definition:

Justification:

Forum Discussion

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BEDES Compliant/Compatible Schemas
for public implementations
BEDES Compliant/Compatible mappings
for proprietary implementations



What	Description	Website	Forum	Schema
UMP	XXX	www.xxx.org	xxx.forum.org	xxx.schema.org
ESPM	YYY	www.yyy.org	xxx.forum.org	xxx.schema.org
HPXML	ZZZ	www.xxx.org	xxx.forum.org	xxx.schema.org

Task 2. Support Partner Implementations

- The BEDES implementation team will identify candidate partners with schemas and other implementations such as reporting requirements for incentive efficiency programs and building performance disclosure requirements.
- The team will assist in ensuring that partner implementations are BEDES compliant.

Task 3. Support Initial Adopters (Pilots)

- The BEDES implementation team will identify 1-2 initial users, e.g., the State of California, and provide implementation support for their effort.
- Additional pilots will be included if co-funding or other sources are identified.

Task 4. Provide Biannual Updates of the BEDES Dictionary 1.0.

- To keep BEDES Dictionary 1.0 up-to-date with user needs, the BEDES implementation team will develop a schedule and process—using the stakeholder forum and in-person calls—for additions and updates to the BEDES terms and definitions.
- The target dates for the updates is March 31, 2015 and September 30, 2015

Task 5. Initiate Transition Strategy for Managing BEDES.

- The BEDES implementation team will develop a schedule and process—using the stakeholder forum and in-person calls—to establish a non-profit “host” to support SEED and BEDES.
- The expectation is that this will be a 2-3 year process.

- **What activities are Stakeholders are already planning that would advance BEDES 1.0?**
- **What support do stakeholders need to advance their BEDES-related activities?**
- **How else can this group best support the adoption of BEDES 1.0?**

More from Lexicographer Samuel Johnson:

- “Great works are performed not by strength but by perseverance”
- “Knowledge is of two kinds. We know a subject ourselves, or we know where to find information on it”
- “What is easy is seldom excellent”