



New Developments

September 15, 2016

Outline

1. About BEDES
2. Version 2.0 Review Draft
3. BEDES Adoption
4. Partnership Opportunities

Please use the chat feature for questions

Motivation for BEDES

Problem

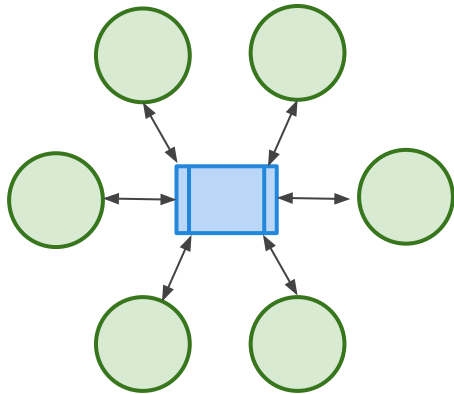
- Ambiguity of data definitions (e.g. gross floor area).
- High transaction costs of sharing and aggregating data.

Solution

- Provide common terms and definitions to enable exchange, comparison, and combination of data.
- Reduce costs in the building efficiency sector.
- Facilitate software development and interoperability.

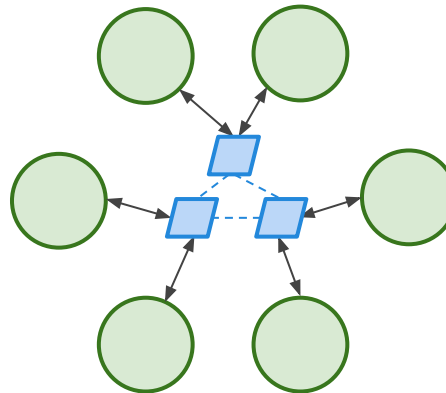
Think big, Start small, Act now...

Perfect world...



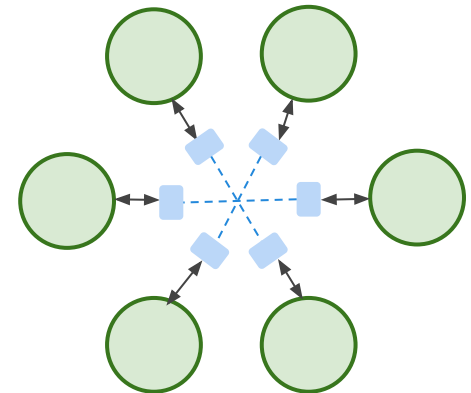
*A single universal
exchange schema*

Almost
perfect world...



*A set of standard
exchange schemas for
different use cases*

Somewhat less
perfect world....

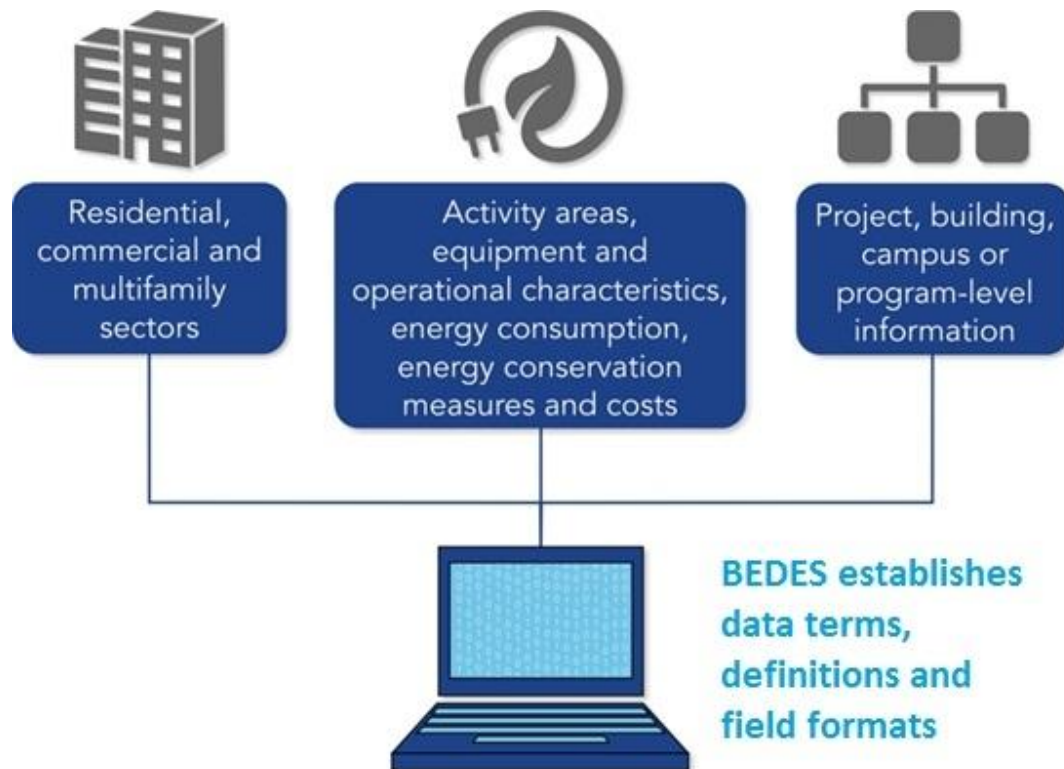


*Standard terms and
definitions*

utopia ← → reality

What is BEDES?

BEDES is a collection of terms and definitions designed to facilitate the use and sharing of building characteristics and energy performance data among software tools and data collection and analysis activities more easily, consistently, and at lower cost.



BEDES is a Dictionary

What it Is

- Data Terms
- Term Definitions
- Units of Measure
- Data Types
- “Dictionary”

What it Is Not

- Database
- Data Schema
 - Relational
 - Hierarchical
- File format

BEDES Use Cases - Current

ENERGY EFFICIENCY INVESTMENT DECISION-MAKING

Owners and managers use building energy performance information to assess capital and operational opportunities in individual buildings, develop energy strategies across portfolios, and identify trends in local real estate markets.

BUILDING PERFORMANCE TRACKING

The implementation of disclosure policies for public or private buildings requires public officials to collect, clean and analyze massive amounts of data, then share portions of it with the public.

EFFICIENCY PROGRAM IMPLEMENTATION EVALUATION

Energy efficiency programs often provide incentives or technical assistance to support owners' data collection and analysis activities. They also use data to conduct program design and outreach, track project performance, and evaluate programs.

BEDES Development History

Originally developed to improve interoperability of DOE's software tools and data collection efforts

DOE scoping study confirmed that BEDES would be useful to stakeholders outside DOE

Lawrence Berkeley National Lab led a working group process to develop BEDES

BEDES 1.0 released October 2014
BEDES 1.1 released April 2015
BEDES V1.2 released October 2015

BEDES Version 2.0

What's new in Version 2.0

- New terms and enumerations
 - Finance terms - leveraging SEE Action project
 - Solar PV terms - leveraging PV Autopop & Orange Button projects
 - Waste terms - from Global Real Estate Sustainability Benchmark
- Updates and corrections to existing fields
 - Based on feedback from developing BEDES-compliant products for adopters
- New BEDES Online functionality
 - CSV/XML download of documentation
 - Unique IDs, URLs for all terms and options

We welcome your feedback!

BEDES Adoption

Long-term Goal:

BEDES is widely used as a de-facto standard dictionary for data exchange

Challenge:
Near term costs vs. long term benefits
for transitioning to BEDES



Near-term adoption strategy

- Socialize BEDES terms
 - Show mapping to BEDES terms
 - Support for BEDES' long terms goals
- Use BEDES to help with new data exchange/integration efforts
 - Direct near term benefits for applications

What other ideas do you have to increase adoption in the near term?

Should we work with standards organizations in the near term?

What makes you BEDES-compliant?

- Publish a mapping between your terms and BEDES terms
 - Can be used as 'Rosetta stone' for cross reference
- Use BEDES terms in your data export/import templates/formats
 - Can be as synonyms for your current terms
- Use BEDES terms for data exchange in multi-application scenario


Investor Confidence Project

ICP-BEDES Data Spec






Use cases:

1. Engineering review by QA provider
2. ICP registry actuarial analysis
3. Underwriting review


ICP Quality Assurance Checklist v1.0


Energy Performance Protocol
Large Commercial v1.2a

Client:
Project:
Project Developer:
QA Provider:

<div> BASELINING CORE REQUIREMENTS</div> <div><input type="checkbox"/> 14-36 months utility data <input type="checkbox"/> Utility baseline period <input type="checkbox"/> End-use energy use estimates <input type="checkbox"/> Weather data - related baseline <input type="checkbox"/> 12 mos occupancy - related baseline <input type="checkbox"/> Building asset data <input type="checkbox"/> Baseline operational/performance data <input type="checkbox"/> Normalized / regression-based baseline <input type="checkbox"/> Utility rate structure <i>(If Demand Charges or Time of Use apply)</i> <input type="checkbox"/> Annual load profile <input type="checkbox"/> Average daily load profiles <input type="checkbox"/> Peak usage <input type="checkbox"/> TOU summary by month <i>(if applicable)</i></div>	<div><div> SAVINGS CALCULATIONS</div><div><input type="checkbox"/> Software type <input type="checkbox"/> Modeler credentials <input type="checkbox"/> Weather file <input type="checkbox"/> Model input files <input type="checkbox"/> Model output files <input type="checkbox"/> Model calibration <input type="checkbox"/> Model process description <input type="checkbox"/> Energy Efficiency Report <u>Energy Conservation Measures (ECMs)</u> <input type="checkbox"/> Investment criteria <input type="checkbox"/> ECM model variables <input type="checkbox"/> ECM results and package results <input type="checkbox"/> Cost estimates <input type="checkbox"/> Quality assurance statement</div></div>
<div><div> DESIGN, CONSTRUCTION, AND VERIFICATION</div><div><input type="checkbox"/> Operational Performance Verification plan <input type="checkbox"/> OPV authority credentials</div></div>	<div><div> MEASUREMENT AND VERIFICATION</div><div><input type="checkbox"/> Measurement and Verification plan <input type="checkbox"/> M&V agent credentials</div></div>
<div><div> OPERATIONS, MAINTENANCE, AND MONITORING</div><div><input type="checkbox"/> Ongoing management regime</div></div>	<div><input type="checkbox"/> Project Developer Credential</div>

QA Firm:
Reviewer*:
Date:
Signature:
*Reviewer must be qualifying individual per ICP QA Application



By signing this ICP QA checklist, the ICP Quality Assurance Provider attests to having reviewed the project development documentation and certifies that the project substantially follows the ICP Energy Performance Protocols and the ICP Project Development Specification. This Quality Assurance review and signature does not constitute a guarantee of energy savings performance, nor does it signify that the reviewer is taking professional responsibility for the required documents and engineering produced by the Credentialed Project Developer.



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WORKGROUPS ▾

CERTIFICATION ▾

RESOURCES ▾



Home Energy Efficiency Information: Coming to your MLS by 2018

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JAN

Home Energy Efficiency Information: Coming to your MLS by 2018

Technology empowering home buyers to find homes based on efficiency ratings is available and currently being tested.

Imagine the next time you are ready to buy a home, going online and being able to search by the energy-efficiency ratings of homes the same way you can search for homes by price, or number of bedrooms. Or better yet, when you're searching for a home in a particular neighborhood, you spot a For Sale sign that also displays the home's energy rating.

While it

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Right now

national standa

Dictionary – a “Rosetta

across the country.

“....Most importantly, we took the RESO Data Dictionary and mapped it over to the **BEDES** Data Dictionary to allow for a natural “flow” of data as defined by the Department of Energy into the correct MLS Fields.”

To encourage adoption of these standard fields across MLSs, RESO has embarked on a multi-year certification effort. Five different Data Dictionary Certification levels for MLSs – Core, Bronze, Silver, Gold, and Platinum – will go into effect in five waves with the first deadline set for January 1, 2016, and continuing through 2020. MLSs also have the option to move through these waves more quickly if desired and many are embracing the opportunity to do so with their first past of adoption and

2016 Fall
Conference
Registration

Join RESO

Member Login

Membership
Renewals

Contact RESO

About RESO



BEDES Compliance...1

Application	BEDES compliance
AIA 2030 Design Data Exchange	In Development
Building Performance Database (BPD)	Completed
BuildingSync	Completed
ENERGY STAR Portfolio Manager	Completed
EcoPros	In Development
EnergySavvy	Completed
EnergySense	Planned
eProject Builder	Completed



BEDES Compliance...2

Application	BEDES compliance
FS Energy	Completed
Green Button	Completed
GRESB	Completed
Home Performance XML (HPXML)	Completed
Investor Confidence Project	In Development
Real Estate Standards Organization (RESO)	Completed
Standard Energy Efficiency Data Platform (SEED)	Completed
Southern California Regional Energy Network	Planned
Viewglass	Completed

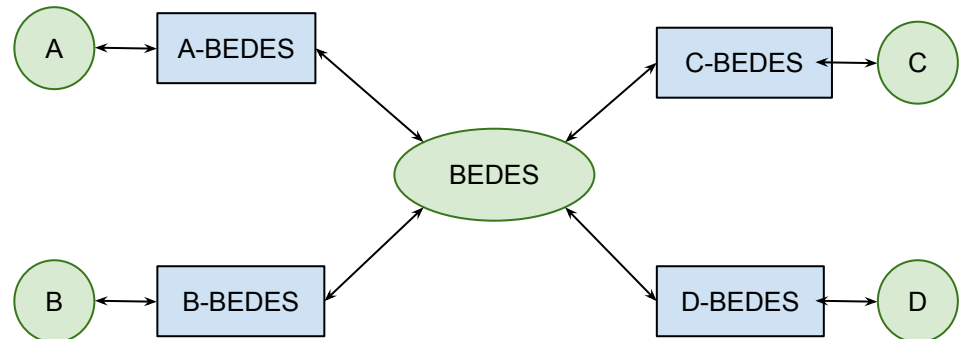
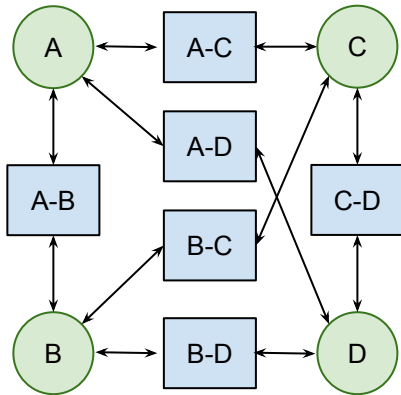
Partnership Opportunity

Target Applications

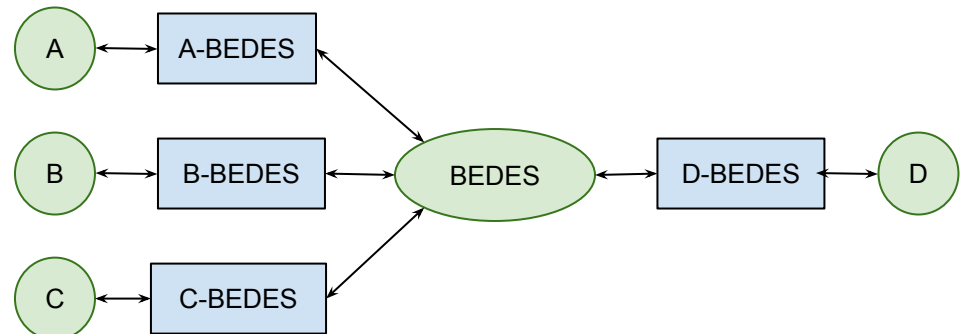
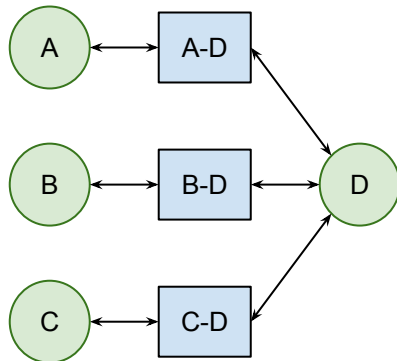
- Require data exchange/integration across multiple applications
- Have not yet “baked in” their data exchange terms

 = application data
  = transformation

Many to Many



Many to One



Partnership Opportunity

What DOE/LBNL Provides:

- Strategic planning for data standardization
- Mapping assistance
- Help developing transformations for BEDES terms
 - Allows users to create BEDES-compliant files for their applications
- Training to maintain transformation

What Partner Commits to:

- Documentation of their application terms and definitions
- Working with the BEDES team to create mappings and transformations
- Use of mapping and transformation for real business purpose
- Publicizing and promoting their BEDES collaboration

Contact: bedes-support@lbl.gov

Discussion

*Please use the chat feature
for questions and suggestions*

Get Involved!

- Develop **BEDES-Compliant** products
 - we can help!
- Become an **Endorser**
- Tell us how you're **using BEDES**
- Share your thoughts on the **BEDES Forum**
- Develop **terms & definitions** for new areas
- Spread the word!

bedes@ee.doe.gov (general inquiries)

bedes-support@lbl.gov (tech support)

buildings.energy.gov/bedes