Better Buildings Energy Data Accelerator

NEW PROJECT

2014 Building Technologies Office Peer Review

U.S. DEPARTMENT OF ENERGY | Energy Efficiency & Renewable Energy

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Project Summary

NEW PROJECT

Timeline:

Start date: June 2013

(official launch: December 2013)

Planned end date: December 2015

Key Milestones

1. Recruitment of 20 Partner-pairs
2. White House Launch and design of the program – Dec 2013
3. Partners convene local stakeholders – May 2014
4. 20 Partner-pairs to complete designs for to 20% of included building owners - December 2014
5. Successfully provide whole-building data access to 20% of included building owners - December 2015

Target Market/Audience:

- Local governments
- Utilities

Project Goal:

Building owners need information about energy use in order to measure and manage it. However, many building owners, especially those with multiple tenants, cannot access this information. Through the *Better Buildings Energy Data Accelerator* local governments are joining forces with their utilities to make it easier for commercial and multifamily building owners to get **access to whole-building energy usage data** for the purposes of **benchmarking** their buildings.

Budget:

Total DOE $ to date: $150k
Total future DOE $: $750k
* ICF and CBEI

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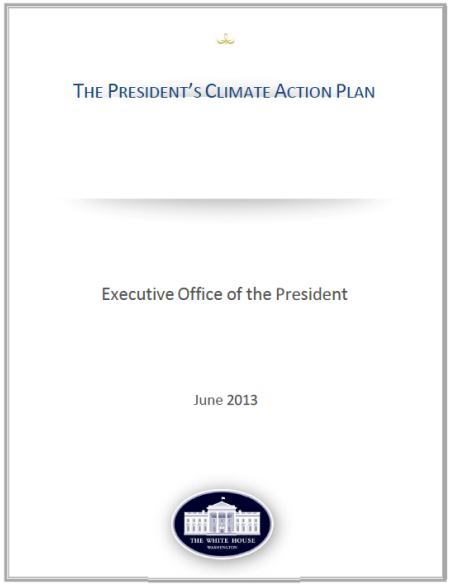
Why the "*Energy Data Accelerator*"?

- Growing demand for whole-building utility data to benchmarking purposes
- Challenge of obtaining whole building data when multiple tenants with their own utility meters and accounts in a building
- Accelerators announced in President's Climate Action Plan in June 2013



Access to whole building energy consumption data enables and **facilitates benchmarking**

Benchmarking leads to **actionable information** on energy management opportunities, and **increased participation in energy efficiency programs**

Participation in efficiency programs drives **cost savings** for customers and **energy savings** for program administrators

*NMR Group, Inc. and Optimal Energy, Inc., Statewide Benchmarking Process Evaluation, Volume 1: Report, April 2012

Building Owners Use Data to Improve Energy Efficiency

Among facility managers who have used ENERGY STAR for benchmarking:

70%
Have used ENERGY STAR to guide energy efficiency upgrade plans

67%
have used ENERGY STAR to justify an energy efficiency project

Source: Survey of hundreds of facility managers.
Audin, Lindsay. "Finding Your Best Energy Opportunity." Building Operating Management. December, 2011.

Utility programs promoting benchmarking can drive similar results:

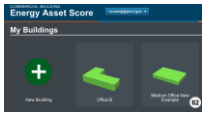
62%
said that benchmarking their building's performance strongly influenced them to take energy management actions

84%
of those who benchmarked made energy efficiency retrofits or operational improvements to their buildings

California Statewide Benchmarking Process Evaluation, NMR Group, Inc. April, 2012.

Information about building energy performance can drive improved efficiency. This is a key motivator for building energy data analytics.

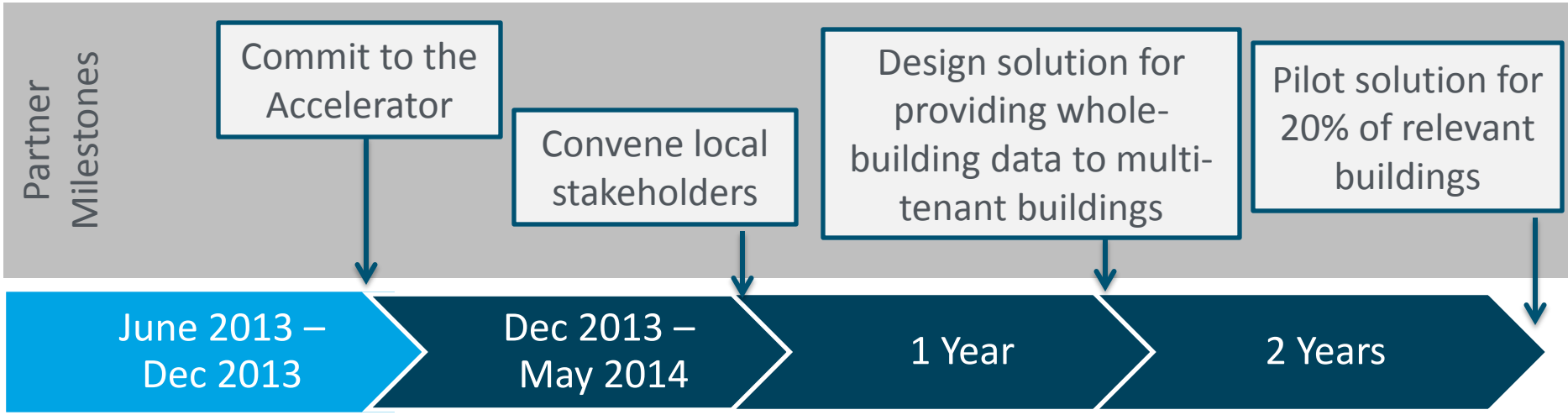
The Accelerator, among other DOE and Market efforts to enable benchmarking, is designed to address the upstream barrier of data access

Building owner collects data	Owner or consultant enters data in benchmarking tool	City aggregates and analyzes data from benchmarking tool and city records	City publishes data in a national database	City tracks results of benchmarking & disclosure
• Energy Data Accelerator Better Buildings U.S. DEPARTMENT OF ENERGY • SEE Action Regulator's Guide 	• Data Quality Assurance Guide  • EPA's EnergyStar Portfolio Manager ENERGY STAR® PortfolioManager®	• SEED Platform SEED PLATFORM BETA Standard Energy Efficiency Data Platform • Data Cleansing and Analysis Guide  • Energy Asset Score 	• Buildings Performance Database DOE BUILDINGS PERFORMANCE DATABASE	• Benchmarking & Disclosure Impact Evaluation Guide 

DOE Energy Data Accelerator

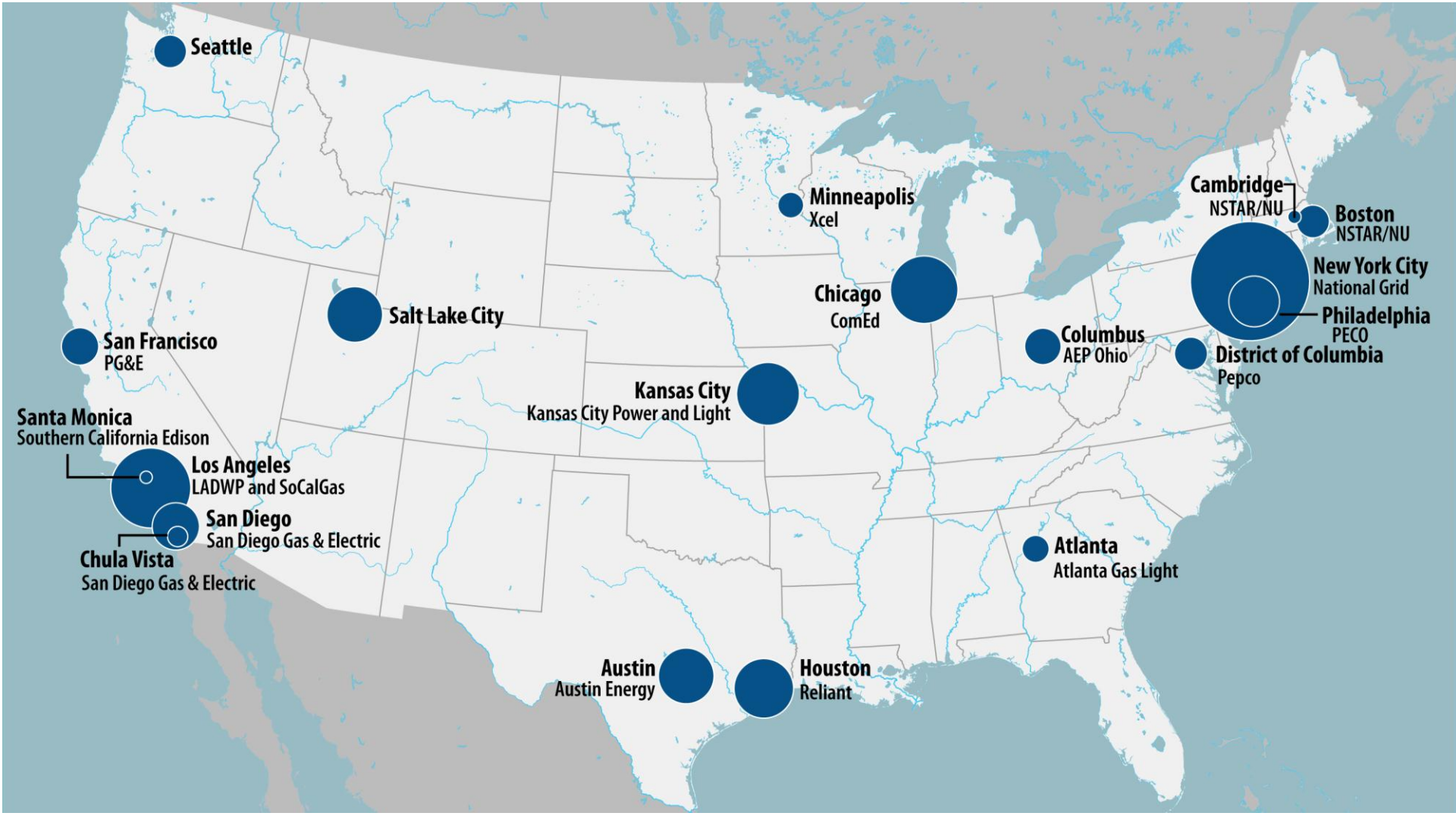
NEW PROJECT

By the end of two years DOE will accelerate the ability of building owners to gain access to whole-building data by working together with cities & utilities to:



- Demonstrate **low-cost, standardized approaches** for providing energy data for the purpose of whole-building energy performance benchmarking.
- Develop best practice approaches for **reliable and secure** utility aggregation of energy data from multiple accounts to facilitate whole-building benchmarking while **protecting privacy**.
- Demonstrate tools that **streamline the transfer** of utility bill data to benchmarking tools.
- Long-term: demonstrate that whole-building data access can be a **standard practice**

A diverse set of 20 Accelerator Partner-pairs from across the country…



Accelerator Resources, Activities and Outcomes

DOE Resources

SEE Action *Utility Regulator's Guide*

PNNL Data Aggregation Analysis

DOE best practice documents on whole building data access:

Stakeholder Engagement Guide and Check List

Pilot design template which highlights best practice approaches

Summary fact sheets on current utility systems for whole building data access

Sample best practice procurement specifications for utility systems

Accelerator Activities

- Partners provide content for sharing information on: utility systems for whole building data, approaches for addressing privacy, and stakeholder engagement

Partners engage local stakeholders on whole building data access

Partners design an approach for providing whole building data to 20% of commercial or multifamily buildings in local community

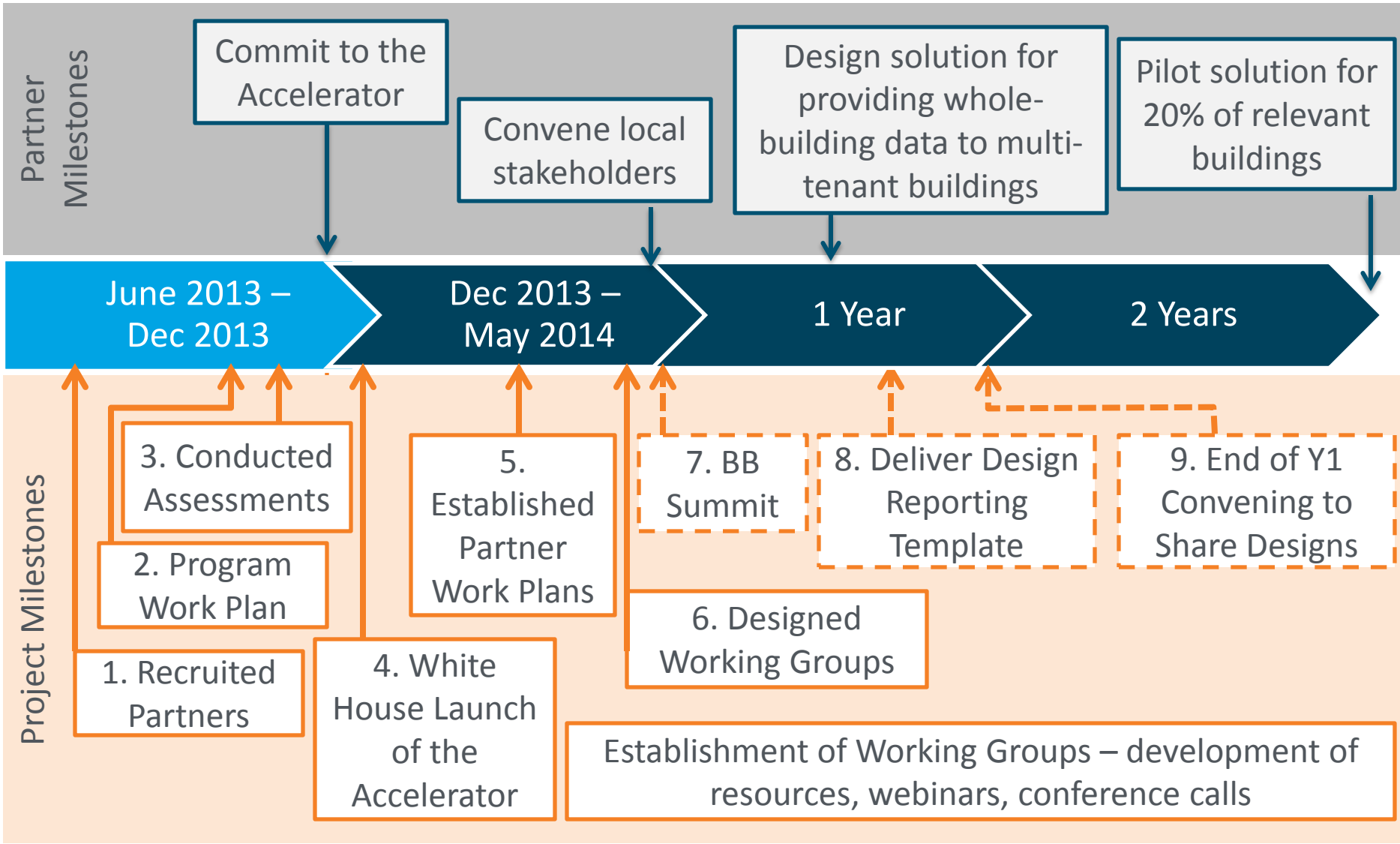
Accelerator Outcomes

20 Accelerator Partner pairs identify and adopt cost effective and standardized approaches for providing whole building data

At least 20% of building owners in Accelerator communities are more readily able to benchmark buildings

Best practice approaches for whole building data access are documented and disseminated

Project Milestones and Accomplishments



Driving progress with Partners via milestones

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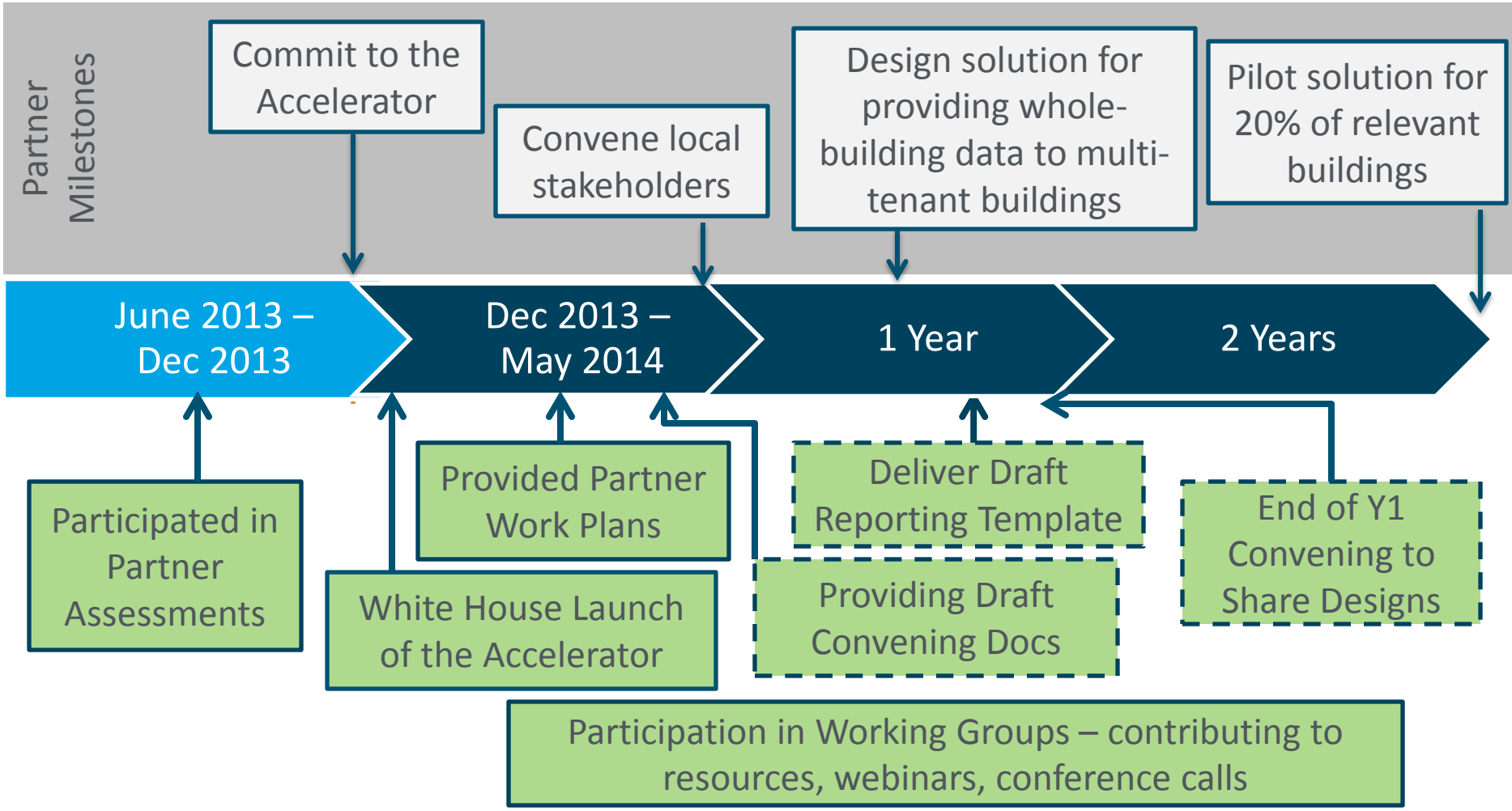
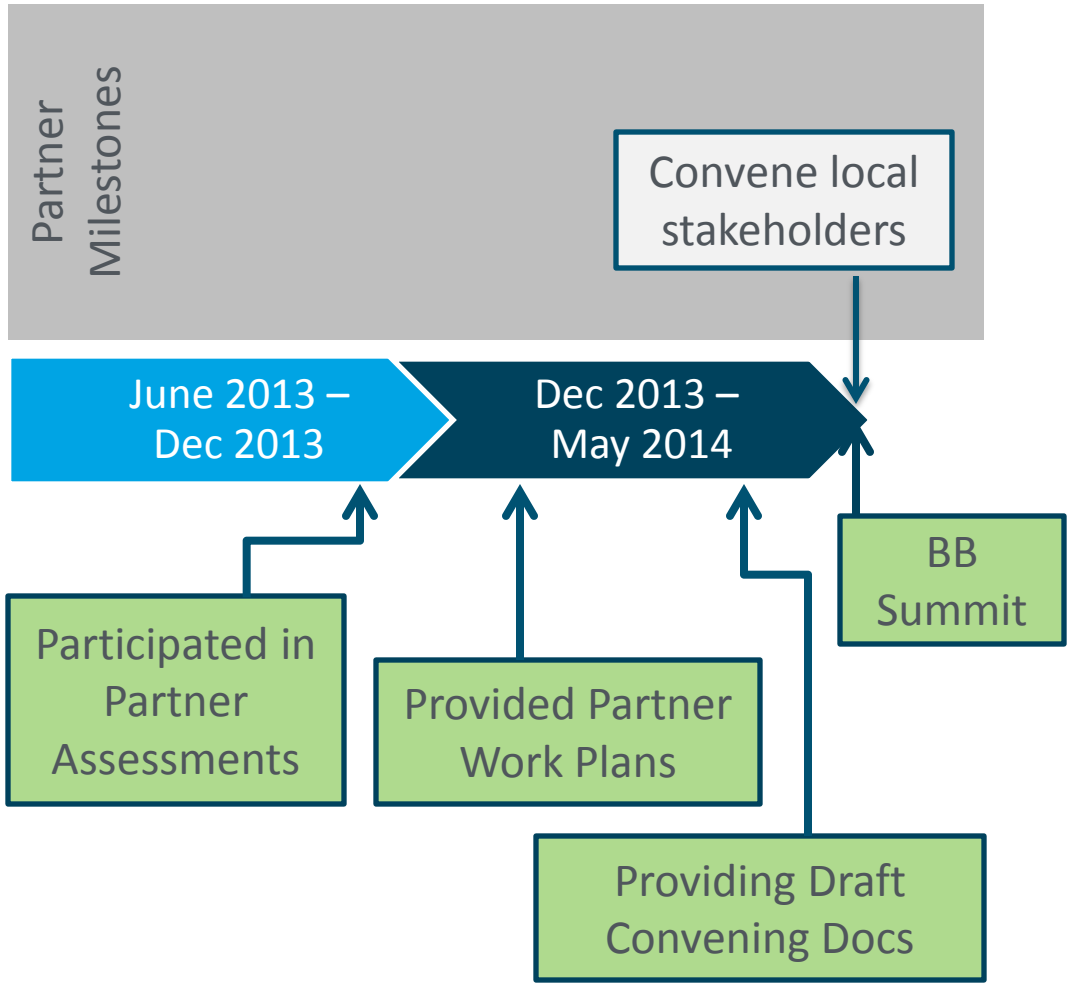


Already seeing impact of the program

For example, the first Partner milestone is to hold a stakeholder convening by May 2014 and report out at the Better Buildings Summit



14 Partner-pairs are underway

- Established a Building Energy Efficiency Task Force,
- Partnered with EPA on training and resources,
- Coordinating with other local utilities,
- Organizing a statewide strategy

6 are developing a strategy or seeking assistance from the Accelerator project team in designing a strategy for convening stakeholders

Working Group webinar: reviewed engagement models, checklist, and examples from the field

Stakeholder Engagement Working Group

Key Barrier: Building owners and local governments seeking whole-building data access often do not have established pathways for engaging their utilities

Lead: Consortium for Building Energy Innovation

Activities and Resources to help with Stakeholder Engagement:

- Summarize and share best practices and approaches across Partners regarding local stakeholder engagement, examples include:
  - Stakeholder Engagement Guide and Check List – where key models and documents for stakeholder engagement will be culled to distill best practices
  - Case study presentation on December 3rd
  - Written case study and webinar recording available at: www.energy.gov/BetterBuildings
- Leverage relationships with strategic collaborators to bolster local efforts, including Better Buildings Challenge and Alliance building owners

Better Buildings
U.S. DEPARTMENT OF ENERGY

Case Study: Commercial Building Data Access

BETTER BUILDINGS ALLIANCE

Leading commercial building owners and operators in the Philadelphia area have been actively tracking the performance of their properties and demonstrating the value of benchmarking as a foundation for successful energy management. In July 2012, the City of Philadelphia sought to drive energy efficiency in commercial buildings by passing an ordinance requiring all commercial buildings over 50,000 ft² to annually benchmark and disclose energy performance using EPA's Portfolio Manager® tool. The ordinance applies to approximately 2,400 buildings and more than 350 million ft² of space. Energy and water data reporting for calendar year 2012 was due in November 2013, and data will be posted for public review starting in June 2014.

Based on the experience of other jurisdictions that had implemented benchmarking mandates, it was clear that customer access to utility data was a key factor in the success of these policies. In fact, jurisdictions that didn't engage with utilities early in the process had only moderate compliance rates. This provided an opportunity for utilities and utility regulators to be educated on the basics of benchmarking and the important role that data access plays in driving energy savings. Recognizing this, the Philadelphia-based Energy Efficient Buildings (EEB) Hub was asked to serve as a convener and technical advisor to lead utility and stakeholder engagement with regard to data access.

The Regional Building Energy Data Management Working Group was convened to bring together the important regional stakeholders in energy data access. (From L to R: Tom Bonner, PECO; Michael O'Leary, PECO; Cody Taylor, DOE; Andrea Krukowski, IMT; Cliff Majersik, IMT; Alex Dews, City of Philadelphia; Laurie Actman, EEB Hub; Rob Powelson, Chairman of the PA PUC)

DATA ACCESS IS A CRITICAL FACILITATOR FOR REDUCING COMMERCIAL BUILDING ENERGY USE

- Benchmarking is increasingly being adopted as an energy management best practice by commercial and public sector property owners and operators. Furthermore, an increasing number of cities and states are now requiring commercial and/or private sector buildings to benchmark – and in many cases, publicly disclose – their energy performance.
- Streamlined access to building energy data is critical to ensuring that the building can be quickly and accurately benchmarked. However, barriers to data access exist.
- Utilities are in a unique position to provide enhanced access to building energy consumption data, thereby assisting property owners/operators to benchmark energy performance as a first step towards improved energy management. Approaches may involve:
  - Providing access to aggregated, whole-building energy consumption data while protecting individual tenant privacy.
  - Providing enhanced means for customers to readily access their energy consumption data, beyond paper billing or basic web display.
  - Providing access to energy consumption data in a manner that facilities the entry of this information into benchmarking tools, such as EPA's Portfolio Manager.

Learn more at eere.energy.gov/betterbuildingsalliance

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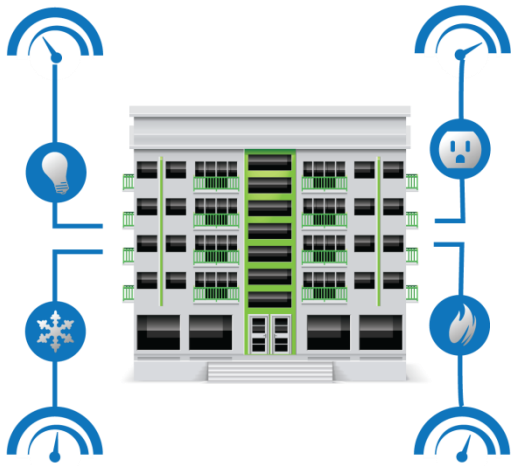
Technical Working Group

Key Barrier: Utility systems generally track energy consumption by meter or account, not by building

Lead: Kristin Field, NREL

Activities and Resources to help with Technical Challenges:

- Summarize and exchange information on Partner systems, e.g. vendors used, functionality, time frame; examples include:
  - Fact sheets to summarize key components of utility systems
  - Webinars with presentations on utility systems and approaches
  - Partner pairing
- Facilitate the development of sample best practice procurement specifications for utility systems
- Draft a pilot design template which highlights best practice approaches – used for reporting Year 1 progress
- Identify other common technical needs on whole-building data access, e.g. Green Button
- Articulate a broader value proposition for utilities to build systems which map energy consumption data to buildings



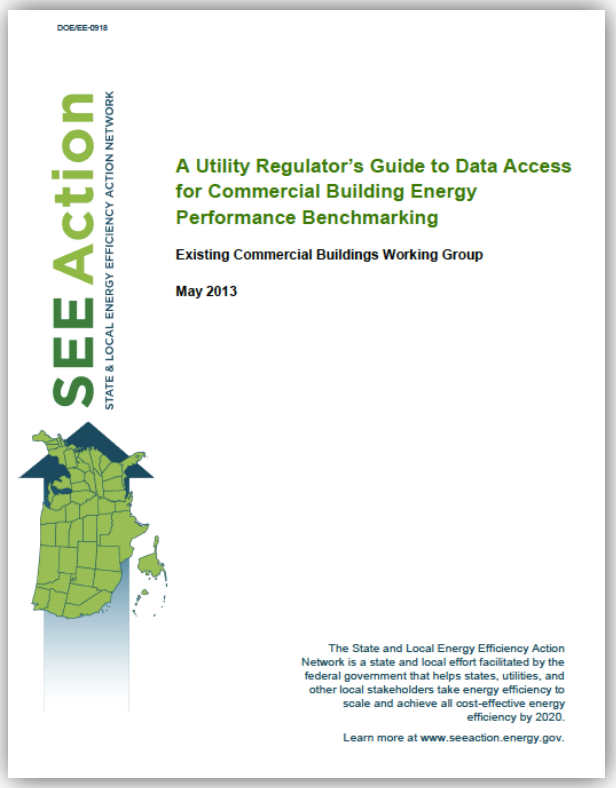
Policy and Regulatory Barriers Working Group

Key Barrier: Utilities are concerned about protecting individual tenant privacy while trying to provide whole-building data to building owners

Lead: Andrew Schulte, ICFI

Activities and Resources to help with Policy Challenges:

- Work with Partners and strategic collaborators to deploy information in the SEE Action *Utility Regulator's Guide to Data Access for Commercial Building Energy Performance Benchmarking*
- Draft a pilot design template which highlights best practice approaches – used for reporting Year 1 progress
- Support the PNNL Multi-meter Data Aggregation analysis and disseminate results
- Facilitate information exchange on solutions to address privacy for whole-building data access
- Support other multi-stakeholder efforts on privacy and data access, e.g. Voluntary Code of Conduct, other state-level efforts



Project Integration and Collaboration

DOE team for the Energy Data Accelerator:

- NREL – leading, designing and executing the Energy Data Accelerator and the Technical Working Group
- ICFI – providing project support and leading the Policy and Regulatory Barriers Working Group
- Consortium for Building Energy Innovation – leading the Stakeholder Engagement Working Group

The Real Estate Roundtable

NATURAL RESOURCES DEFENSE COUNCIL
THE EARTH'S BEST DEFENSE

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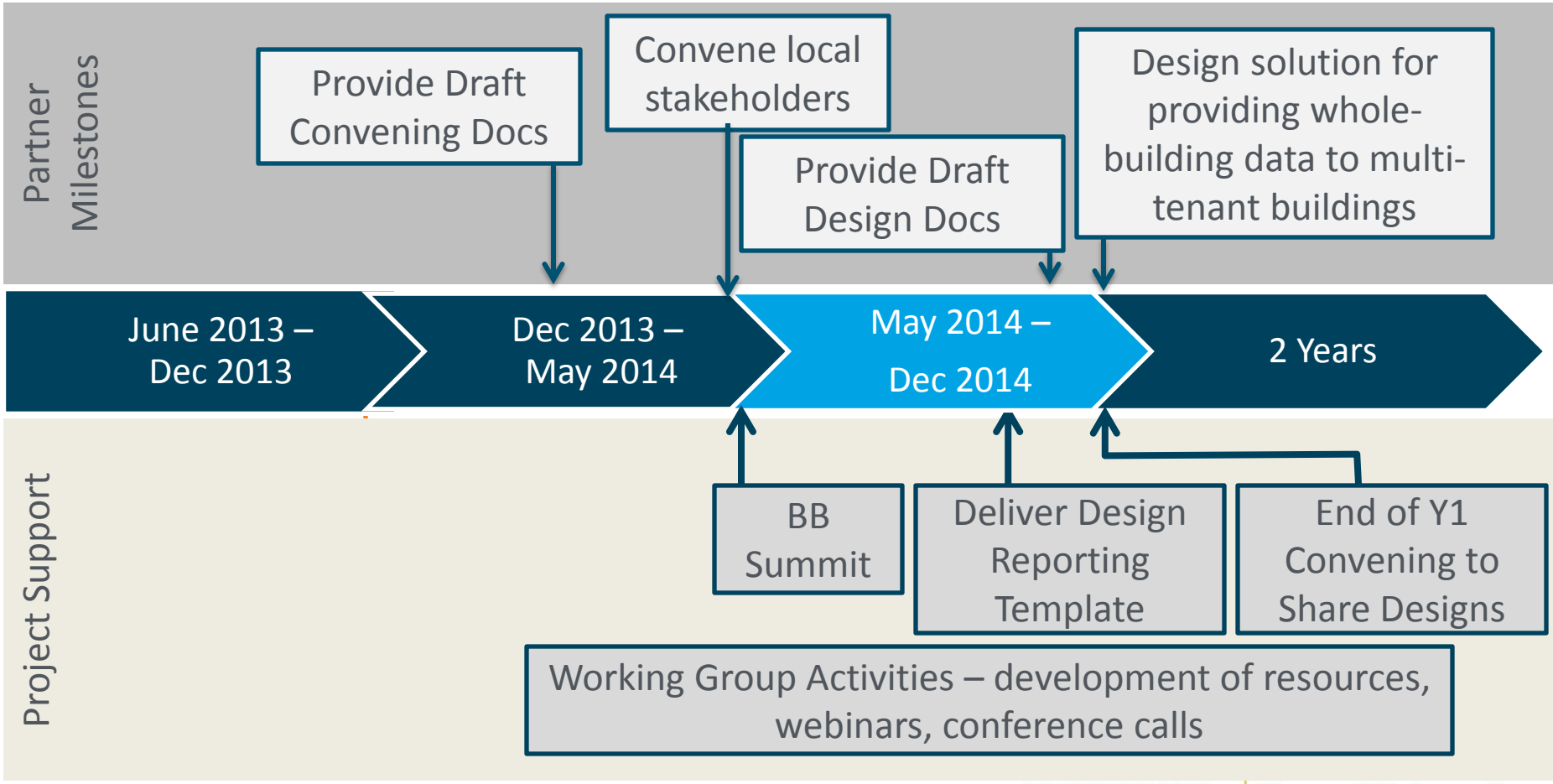
Communications

- Presentation at the Montgomery County Green Building Council Data Summit, Better Building Alliance Webinar series, USDN Data Subcommittee, and other DOE BTO commercial building data presentations
- Website: http://www1.eere.energy.gov/buildings/betterbuildings/accelerators/energy.html
- Press releases and media: http://www1.eere.energy.gov/buildings/betterbuildings/accelerators/media.html

Next Steps and Future Plans

Over the next six months the focus will be to:

- Develop resources and disseminate information via the working groups,
- Work toward the Year 1 milestone of designing a system for whole-building data



Questions

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REFERENCE SLIDES

Project Budget

Budget History					
June 2013 – Sept 2013 (past)		FY2014 (current)		FY2015 – January 2016 (planned)	
DOE	Cost-share	DOE	Cost-share	DOE	Cost-share
$50k	n/a	$350k	n/a	$500k	

Cost to Date: Approximately $150k has been spent to date.

Project Plan and Schedule

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