# AIA 2030 Commitment Portal

## 2014 Building Technologies Office Peer Review
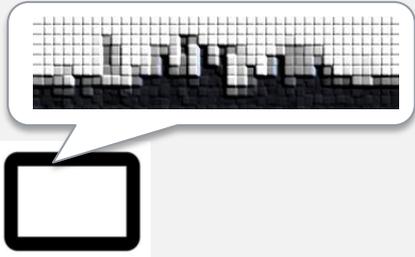


**DESIGN**

**OPERATIONS**

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# Project Summary

**Timeline**:

Start: Oct. 1, 2013

Planned end: Dec. 31, 2014

**Key Milestones:**

1. Jan. 2014 – expanded AIA 2030 data call
2. Jul. 2014 – AIA SEED
3. Dec. 2014 – Portal Launch

**Budget**:

Total DOE $ to date: $200k

Total future DOE $: $100k

**Target Market/Audience**:

A&E firms

AIA, Architecture2030, LFRT

BTO (impact analysis)

**Key Partners**:

| |
|---|
| American Institute of Architects (AIA) |
| Architecture 2030 |
| AIA 2030 Commitment Working Group |
| Large Firm Round Table (LFRT) |

**Project Goals**:

- Grow AIA 2030 Commitment program
- Give firms tools for
  - Self-study
  - Benchmarking and target-setting
  - Operational performance tracking (BPD)
  - Asset valuation (Asset Score)
- Quantify impact of simulation in design
  - Limited 2012 data: 12% reduction

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# Project Basis: AIA Priorities and Initiatives

- **Building on AIA 2030 Commitment Program**

- **AIA Sustainability Leadership Opportunity Scan (2013)**

**#1 of 4** CORE Priority Issues is **Energy**

**#1 of 7** Priority Trends is a **Drive for Measured Performance**

**OWN AND PROPEL THE BELL**



**Indifferent**    **Curious**    **Committed**    **Activist**



| | 2013 | 2014 | 2015 | 2016 |
|---|---|---|---|---|

CORE — Energy, Materials

EMERGING — Design + Health, Resilience
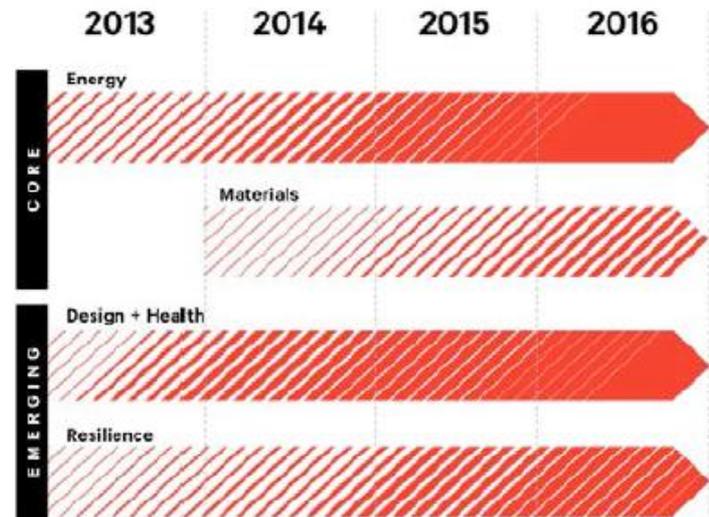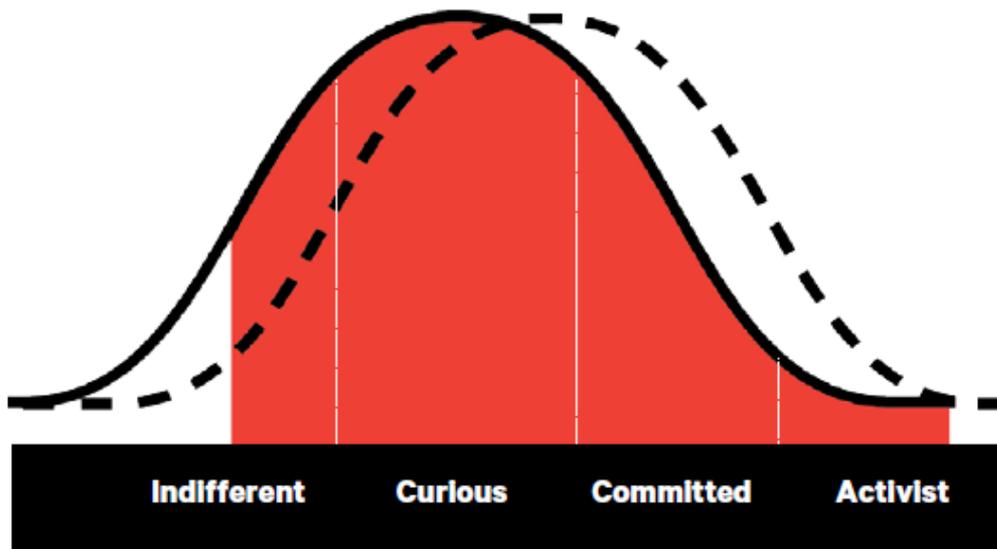
**Each issue is at a different place in its evolution. The scan includes a three-year roadmap of priority actions for each issue.**

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# Architecture 2030 and AIA 2030 Commitment



60%  70%  80%  90%  CARBON NEUTRAL*

TODAY  2015  2020  2025  2030

☐ Fossil Fuel Energy Reduction  ☐ Fossil Fuel Energy Consumption

**The 2030 Challenge**

Source: ©2010 2030, Inc. / Architecture 2030. All Rights Reserved.
*Using no fossil fuel GHG-emitting energy to operate.
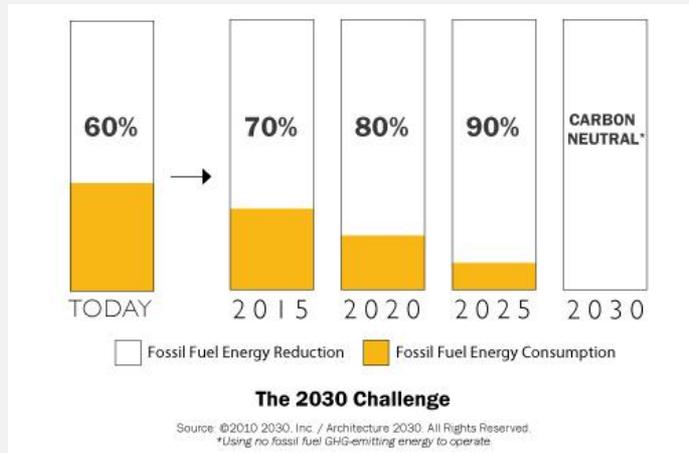
**2030 Commitment Goal:** **Promote Adoption of the AIA 2030 Commitment and reporting and facilitate the Integration of energy benchmarking + energy modeling**

**Collaboration Partners:**

ASHRAE, National Institute of Building Sciences, U.S. Department of Energy and Energy Labs, Architecture 2030, Rocky Mountain Institute, New Buildings Institute

**AIA adopts the 2030 Challenge**

**AIA launches AIA 2030 Commitment**

**Reporting Yr 1**

**Reporting Yr 2**

**Reporting Yr 3**

**Reporting Yr 4**

| 2005 | 2009 | 2010 | 2011 | 2012 | 2013 (current) | 2014 | | |

www.aia.org/2030commitment

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# AIA 2030 Commitment – 2010-2012 Results

## No. of Firms Submitting Data



Legend:
- ■ No. of firms that submitted
- ■ No. of firms in program
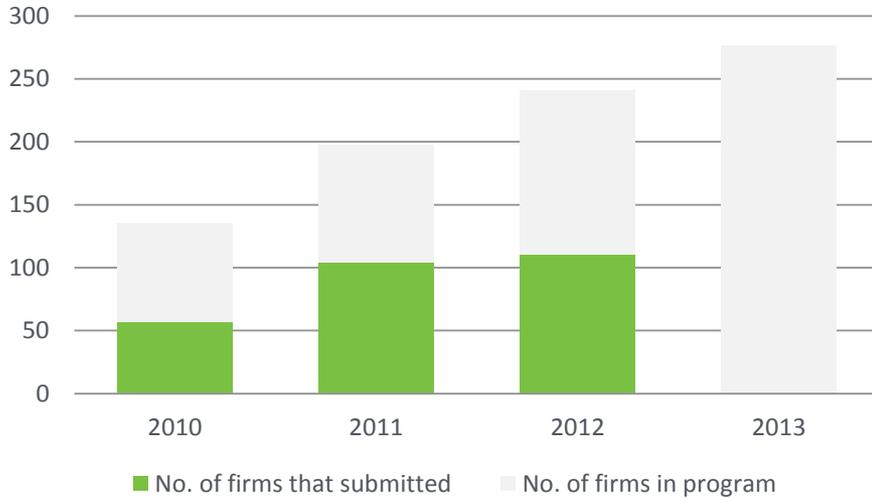
## Total Project Gross S.F. (millions)



- 2010: 384.9
- 2011: 656.2
- 2012: 1400
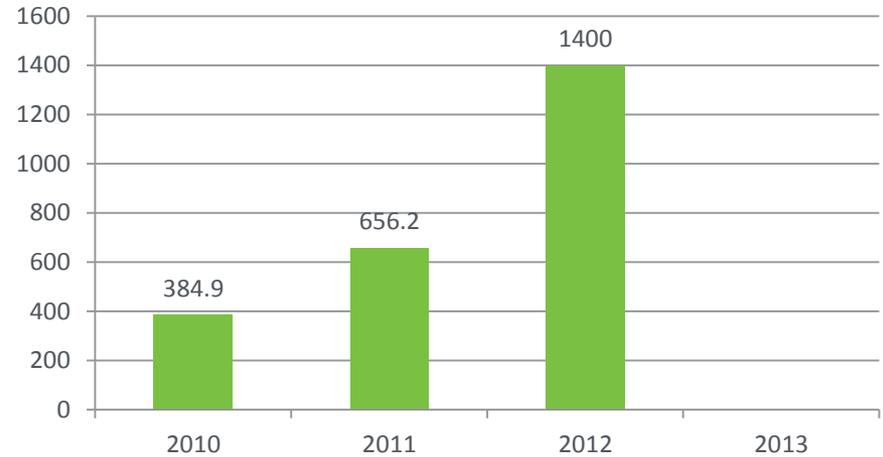
## Key Yearly Metric Comparisons



Categories:
- % projects meeting AIA2030 pEUI targets (CBECS – 60%)
- Avg. pEUI reduction
- % GSF modeled
- % GSF for for which measured data will be collected

Legend: 2010, 2011, 2012, 2013
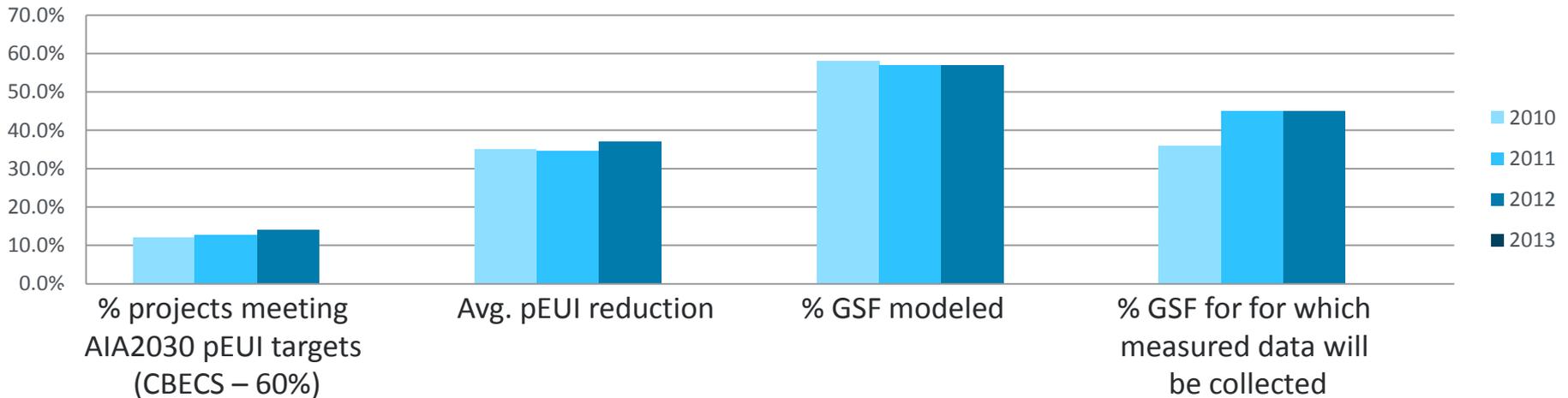
# Purpose and Objectives

**Problem Statement:**

- Make performance tracking and reporting into standard architecture practice.
- Quantify and promote role of simulation-driven high-performance design.

**Target Market and Audience:**

- Architecture, engineering, and energy consulting firms
- Current AIA 2030 participants: 276 firms, potential participants: 83,000 members

**Impact of Project**:

- # firms, gsf, gsf meeting 2030 targets
  - Yr 1:  Target 25% growth of participating firms
  - Yr 1-3:  200% growth of contributing firms
  - Yr 3+:  >500 firms contributing project data + 25 billion s.f. contributed + continued growth



Predicted EUI Reduction by Modeled vs. Non-Modeled
1633 Projects with Detailed Data Provided



Reporting Rates of Signatory Firms by Size
110 Firms Reporting

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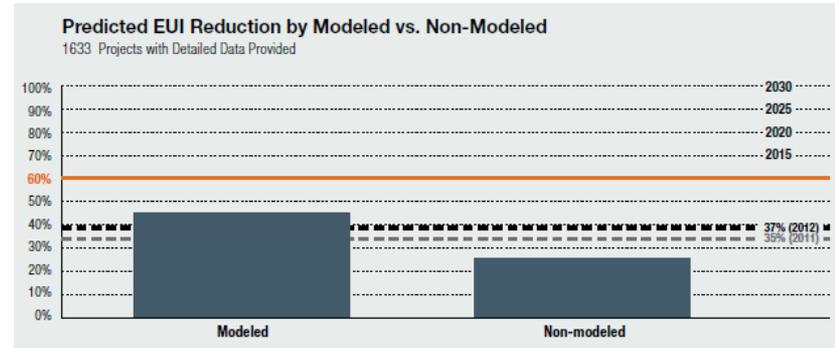
# Approach

**Approach**:

- **Build** on existing AIA 2030 Commitment reporting program
- **Develop** nexus that adds on-going value for firms, AIA, and DOE
- Leverage added value to **expand** participation—set Metcalfe's Law in motion

**Key Issues**:

- SEED timeline and feature set
- Building firm awareness of and engagement with portal project
- Convincing firms to contribute more data before easy-input portal is ready

**Distinctive Characteristics**:

- Connects A&E firms to benchmarking, valuation, and performance tracking
- Opportunities for expanded AIA engagement (e.g., net-zero energy initiative?)
  - Part of larger AIA / EERE memorandum of understanding
- Building project-level tracking for impact analysis
  - Currently for design performance ("uber goal") and tool use
  - But could be extended if not too onerous

# AIA 2030 Commitment Transition Plan
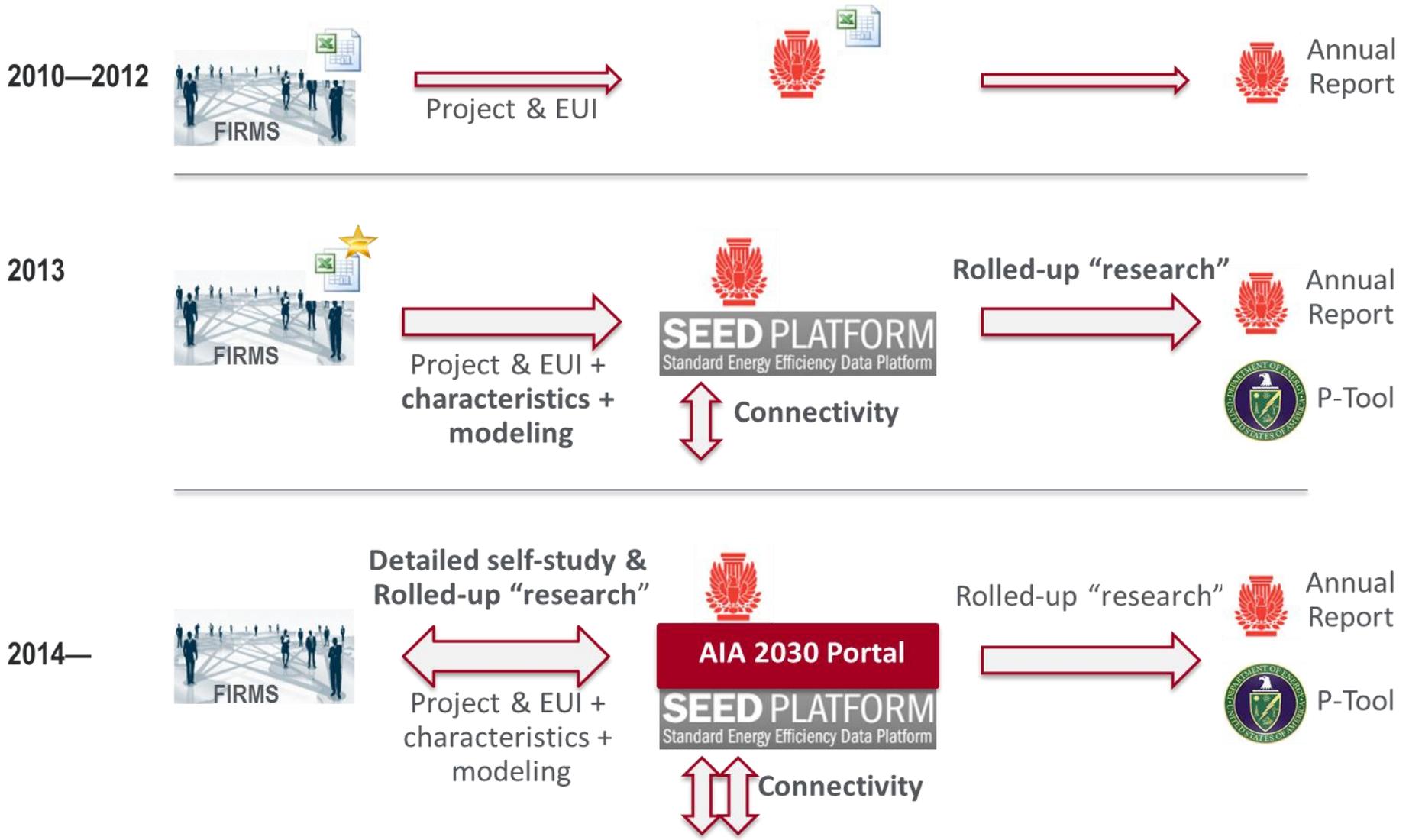
# Phase I (Jan 2014): 2013 Reporting

**Updated spreadsheet tool for 2013 reporting round**

- Collaborated with AIA & 2030 WG, developed data guide for firms
- Changed from firm-level to project-level reporting
- Added building characteristics enough to get Asset Score & Home Energy Score
  - Initial ask was: location, floor area, lighting power
  - Added basic geometry, envelope, HVAC system types & some ECMs
- Added fields for design stage, modeling tool use, and modeling effort
- Developed tool guide for firms

**2013 results: Reporting cycle nearly completed (~90 firms reporting so far)**

- Data will be imported into the online tool

# Phase II (Jun 2014): AIA 2030 SEED

## Create AIA SEED instance; initialize with 2013 accounts & data

- Chose SEED for connectivity: ENERGY STAR Portfolio Manager, etc.
- Expanding SEED 1.1 to handle BPD (Building Performance Database)-type uses
  - SEED 1.0 already supports "organizational" (e.g., firm) record ownership
  - Added query capability and "shared" fields (e.g., gsf and pEUI)
    - Like BPD, query will not return fewer than X records (for anonymity)
  - Upshot: firms can see their own project records in full
  - Upshot: firms can query records of other firms but see only "shared" fields
  - Upshot: AIA and DOE are essentially firms with no records of their own
    - Can only see anonymized rollups



**2013** → **SEED PLATFORM** Standard Energy Efficiency Data Platform → **Annual Report**  **P-Tool**

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## Create online portal for AIA 2030 SEED instance

- Define & refine using dynamic mockups
  - Graphical, software guided entry of project data
  - Standard reports at firm and overall level
  - Flexible queries for self-study & "research"
- API for custom portals
  - Some firms already have these in-house

# Progress and Accomplishments

**Lessons Learned**:

- Firms need to clearly see the value of entering more information per building
- Firms comfortable with sharing some data, but privacy must explicit and right
- Integration takes adaptability, especially when aligning with other projects

**Accomplishments**:

- Engagement of AIA & AIA 2030 working group
- Updated spreadsheet tool & use guide
- SEED 1.1 specifications
- Portal design mock-ups for review/comment
- Draft of portal functional specification
- Working group identifying firm's value case



Interactive Mock-up for dialog with AIA WG

**Market Impact:**

- Portal will be launched Q1 FY15
- Starting to build and maintain groundswell of interest towards launch

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# Value Proposition of More Information and Sharing

**Near term: a place to hold & track project data**

- "I'm a small firm, I can't afford a custom project database."

**Near term: "research" capability**

- "How am I doing relative to others? For this building type? In this region?"
- "I'm a large firm, which of my offices are performing better than others?"
- "Which ECMs are incorporated in my lowest-energy projects?"
- "How much has energy modeling help me reduce design EUI?"

**Medium term: service connectivity**

- "What should the EUI target for this project be?"
- "What is DOE's Asset Score for this building?"

**Medium term: post-occupancy tracking**

- "Is this building performing as designed?"



Research mockup (BPD-style)
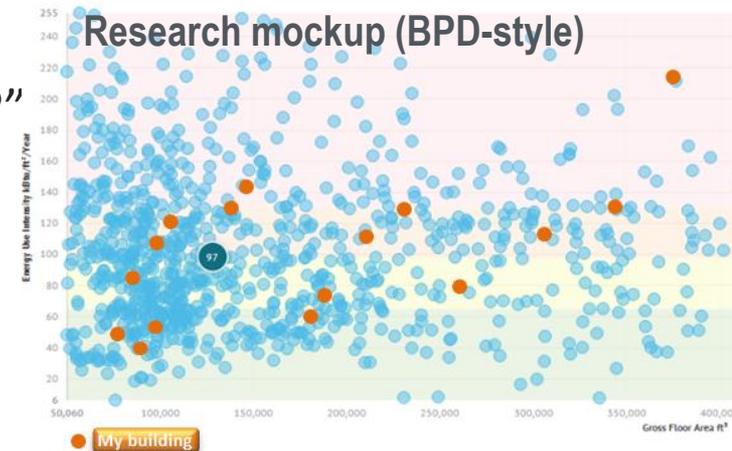
# Project Integration and Collaboration

**Project Integration**:
- Bi-weekly meetings with AIA & AIA 2030 Commitment Working Group
- Aligned with SEED, BPD & Asset Score

**Partners, Subcontractors, and Collaborators**:
- AIA: Existing program, national deployment, cost-share
- AIA 2030 National Working Group: design input, testing, deployment push
- Architecture 2030
- Subcontractor Sustainable IQ: project management, portal design, deployment
- Subcontractor Building Energy: Phase 1 development (SEED 1.1)
- Subcontractor TBD: Phase 2 development (AIA 2030 Portal)

**Communications**:
- Presented at Large Firm Roundtable (Nov. 2013)
- Will present at AIA National Convention (Jun. 2013)
- Will present at local/regional AIA events

**CHICAIAGO!**
AIA Convention 2014
June 26–28
Chicago

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# Outreach and Deployment (Q3, Q4)

## AIA PR Plan for AIA 2030 Commitment Portal Highlights

- AIA National Convention 2014 – workshop, forum, presence on exhibit floor
- Roll-Out of a new online AIA Energy Portal highlighted the 2030 Commitment
- A new 2030 Commitment website
- A new 2030 Commitment member forum
- Local/Regional outreach through Chapters and Working Group
- AIA National Convention 2015 – targeting a showcase

## Diverse group for feedback & outreach to other networks

**AIA**

**AIA 2030 Commitment Working Group**

→

**Committee On The Envir. Advisory Group**

**Energy Modeling Working Group**

**AIA Chapters**

- - - - - - - - - - - - - - - - - - - - -

**Large Firm Roundtable**

**Small Firm Roundtable**

→

AIA Seattle

Boston Society of Architects

AIA Chicago

Texas Society of Architects

# Next Steps and Future Plans
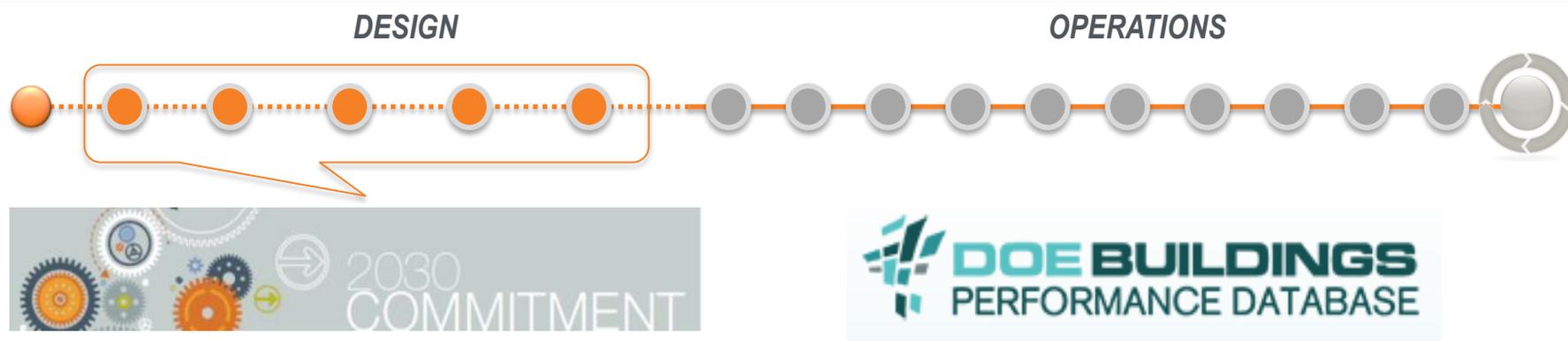
## Next steps

- Finalize portal design with AIA & AIA Working Group, select contractor
- Recruit portal sponsors
- Support AIA's efforts to expand program participation

## Future

- Integration with residential & commercial Asset Scores … and firm outreach
- Integration with BPD for post-occupancy feedback … and firm outreach
- Integration with design & simulation tools for automated project input
- Integration with target-setting tools (beyond Target Finder) … and firm outreach

## Potential future

- Adding DOE recognition for ZNE projects?
- Expanding "2030 Commitment" beyond AIA?

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# REFERENCE SLIDES

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# Project Budget

**Project Budget**: $200k

**Variances**: Significant scope adjustments

- Shifted database from EnergyIQ to SEED to align with other DOE efforts.
- Moved project funds to (general) SEED extensions and instance management.
- Moved project funds to portal design. AIA/DOE will fund portal development.

**Spend to Date**: $150k

**Additional Funding**: AIA is recruiting portal sponsors to fund ongoing maintenance and potential expansion

| Budget History | | | | | |
|---|---|---|---|---|---|
| FY2013 (past) | | FY2014 (current) | | FY2015 (planned) | |
| DOE | Cost-share | DOE | Cost-share | DOE | Cost-share |
| n.a. | n.a. | $200k | ~$100k (tbd) | $100k | ~$100k (tbd) |

# Project Plan and Schedule

- Project milestones revised to reflect SEED dependence
- Current work includes finalizing prototypes and functional specification for portal using industry feedback, and extending and testing SEED.
- Future work includes developing and testing portal and outreach.

| Project Schedule | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Project Start: October 1, 2013 | | | Completed Work | | | | | | | | | | |
| Projected End: Dec 31, 2014 | | | Active Task (in progress work) | | | | | | | | | | |
| | | ◆ | Milestone/Deliverable (Originally Planned) | | | | | | | | | | |
| | | ◆ | Milestone/Deliverable (Actual) | | | | | | | | | | |
| | | FY2013 | | | | FY2014 | | | | FY2015 | | | |
| Task | | Q1 (Oct-Dec) | Q2 (Jan-Mar) | Q3 (Apr-Jun) | Q4 (Jul-Sep) | Q1 (Oct-Dec) | Q2 (Jan-Mar) | Q3 (Apr-Jun) | Q4 (Jul-Sep) | Q1 (Oct-Dec) | Q2 (Jan-Mar) | Q3 (Apr-Jun) | Q4 (Jul-Sep) |
| Past Work | | | | | | | | | | | | | |
| Expanded AIA 2030 Commitment spreadsheet | | | | | | ▉ | ◆ | | | | | | |
| SEED 1.1 feature spec | | | | | | | ▉◆ | | | | | | |
| Current/Future Work | | | | | | | | | | | | | |
| Portal mockups; design spec | | | | | | | ▉ | ▉ | | | | | |
| AIA 2030 SEED | | | | | | | | ▉ | ▉ | | | | |
| AIA 2030 Commitment Portal Beta | | | | | | | | ▉ | ◆ | | | | |
| AIA 2030 Commitment Portal Launched | | | | | | | | | | ▉ | | | |