

Commercial Building Energy Asset Score:  
Pilot Findings & Program Update

April 16, 2014

Joan Glickman, DOE  
Nora Wang, PNNL

# Today's Agenda

- 1) Asset Score Overview
- 2) Asset Score 2013 Pilot Summary
- 3) Pilot Participant Feedback
- 4) Next Steps

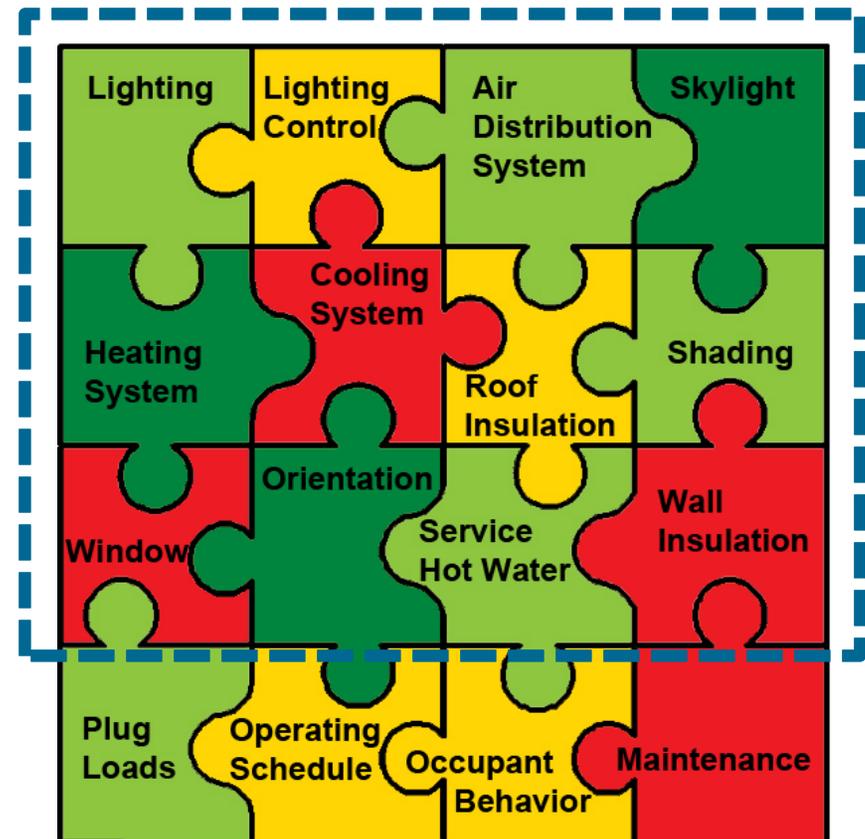
# 1) Asset Score Overview

- **Develop national energy asset ratings to:**
  - Encourage investment in energy efficiency
  - Inform real estate transactions by allowing “apples to apples” comparisons
  - Reduce energy use in commercial and residential buildings.
- **Commercial Building Energy Asset Score (AS)**
  - Highlight a building’s as-built efficiency and its potential efficiency
  - Differentiate installed system efficiency from O&M issues and occupant behavior
  - Identify short-term and long-term capital investment needs

# Commercial Building Energy Asset Score

- Asset Score reflects the as-built physical characteristics of a building and its overall energy efficiency, independent of occupancy and operational choices.
- The physical characteristics include
  - Building envelope (window, wall, roof)
  - HVAC system (heating, cooling, air distribution)
  - Lighting system (luminaire and lighting control systems)
  - Service hot water system
  - Other major energy-using equipment (e.g. commercial refrigerator, commercial kitchen appliances, etc.)

## Asset Score

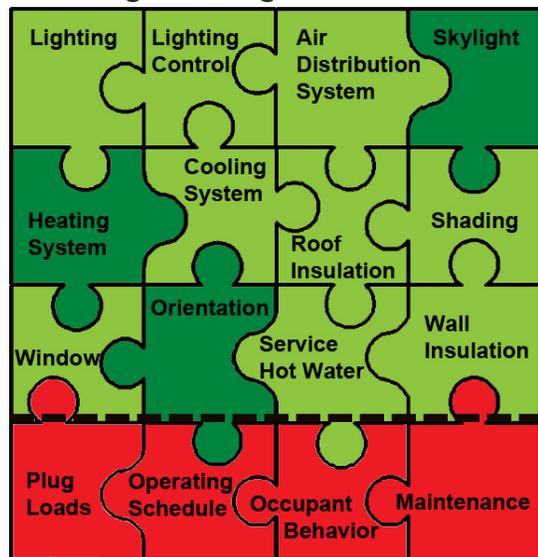


*Building energy use is affected by many factors.*

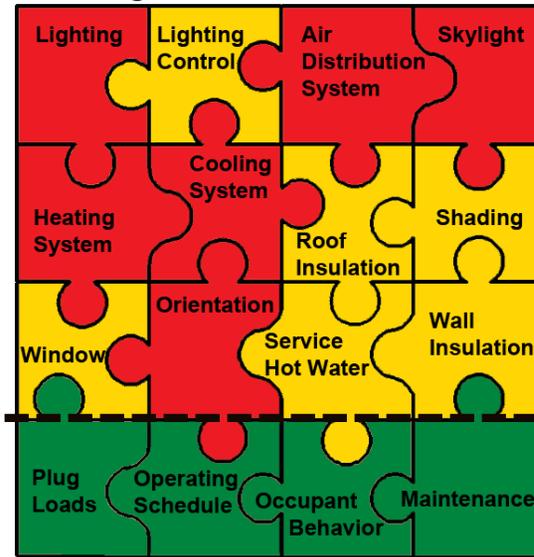
# Relevance of Asset Score

- Buildings #1 and #2 have similar ENERGY STAR scores, but widely divergent asset scores.
- Used together, an energy asset score and an energy benchmark can inform the decisions of a building owner, operator, buyer, or lessee.

Building #1: High Asset Score



Building #2: Low Asset Score



Equivalent  
ENERGY STAR  
Portfolio  
Manager  
Score

Energy Assets  
O&M/  
Occupant Behavior

- **Good energy assets**
- **Poor operation**
- **May be a candidate for low-cost operational improvements.**

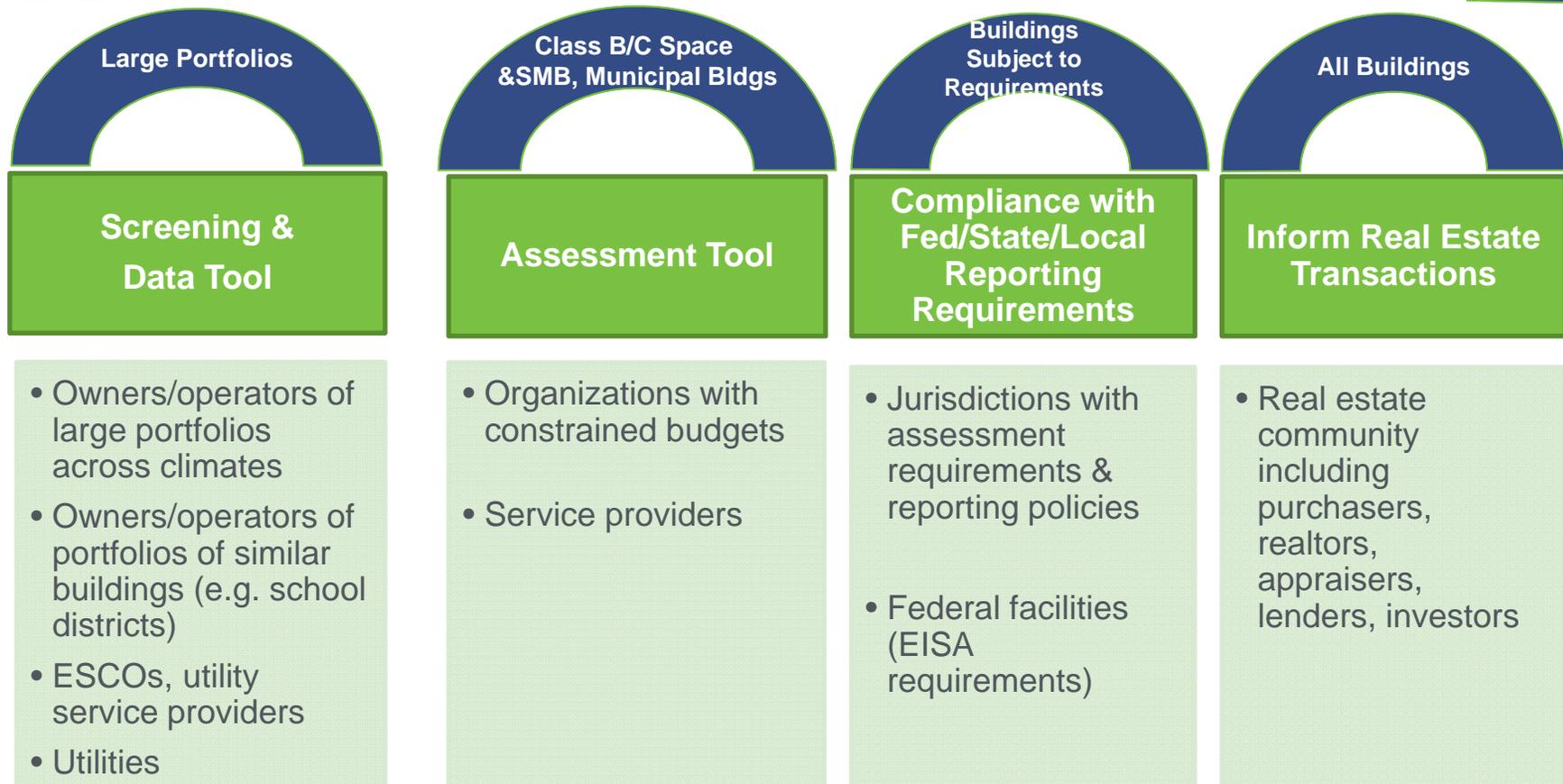
- **Poor energy assets**
- **Good operation**
- **Low asset score may highlight need to replace outdated equipment or prepare for replacement costs in the near future.**

# Why Use the Asset Score?

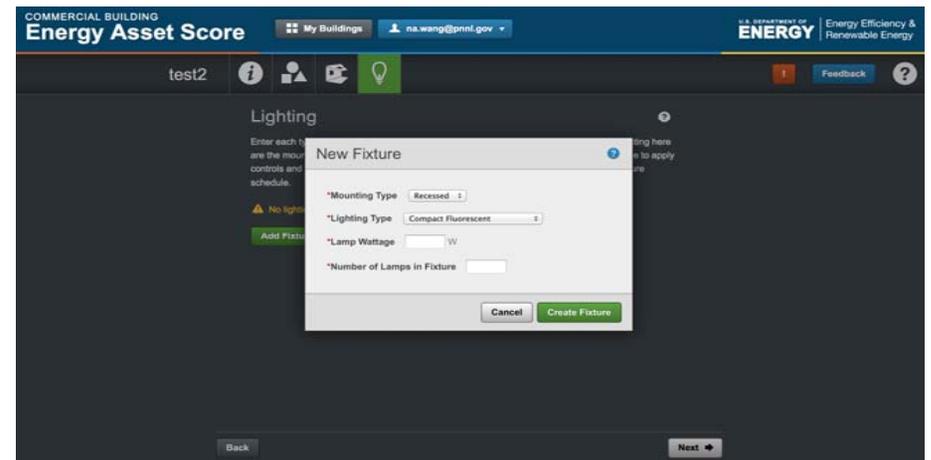
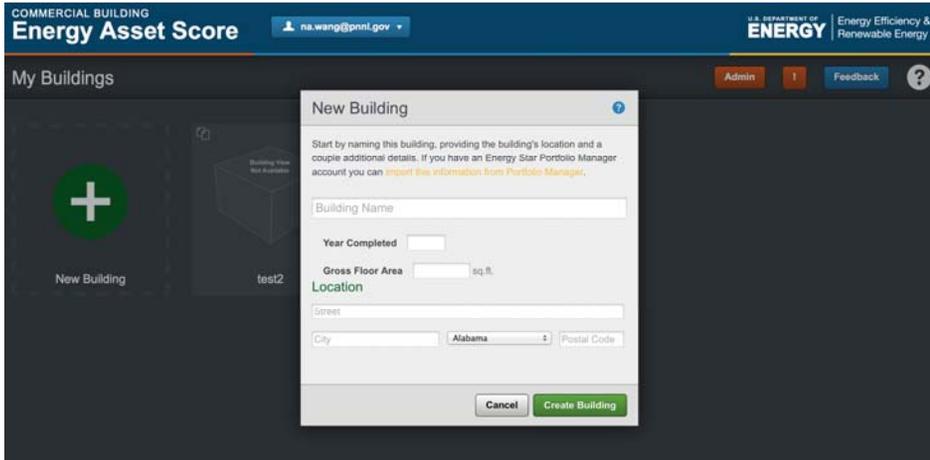
- Consistent scoring method across U.S.
  - Flexibility to customize information to meet local needs
- Free, well-documented, non-proprietary software tool
  - Can be easily integrated with other tools thru APIs
  - Provides additional information beyond score (recommendations, EUI analysis)
  - Backed up by significant research
- Committed to continuous improvement
  - Ongoing analysis
- Easy to understand information
  - Can be tailored to variety of audiences (e.g., current owners/operators, buyers, appraisers, others)
- Benefits in the upcoming years
  - Infrastructure may be put into place for “validated” score
    - Training, testing of assessors, quality assurance requirements
  - Expanded level of customization in future iterations of the tool

# Assess End Uses for Asset Score Report (Current Thinking)

## U.S. Commercial Building Stock

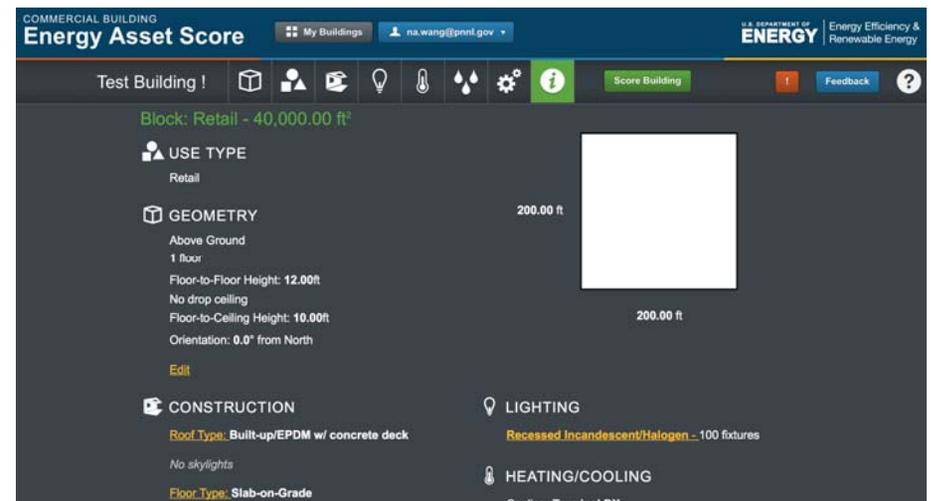
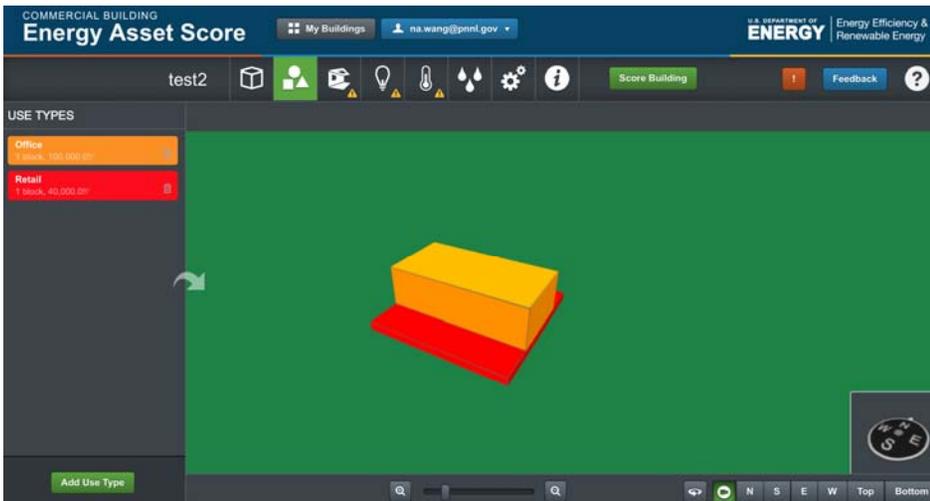


# Asset Scoring Tool



1. Create a new building and enter basic building information

2. Identify building use type(s) and create an inventory of your building features (HVAC, windows, etc.)



3. Create 3-D block(s) of your building and apply use type(s) and features to your building block(s)

4. Score your building and receive your Asset Score Report

# Asset Score Report

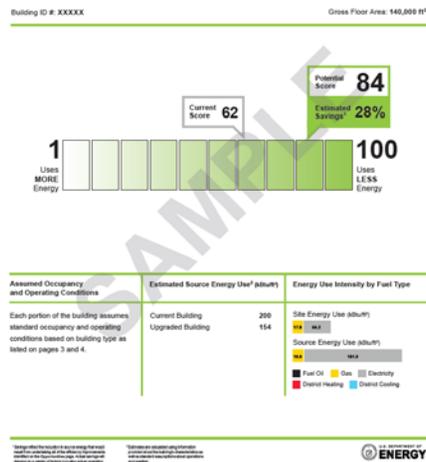
## Four sections

- Score
- Upgrade Opportunities
- Structure and Systems
- Building Assets

## Additional Guides Available

- Report Guide: Understanding Your Score
- Building Upgrade Guide: Next Steps for Improving Your Building

### COMMERCIAL BUILDING ENERGY ASSET SCORE OVERALL BUILDING SCORE



### COMMERCIAL BUILDING ENERGY ASSET SCORE UPGRADE OPPORTUNITIES

Building ID #: XXXXX Gross Floor Area: 140,000 ft<sup>2</sup>

#### COST EFFECTIVE UPGRADE OPPORTUNITIES

Building Envelope	Energy Savings*	Simple Pay Back
• Add roof insulation in Office and Retail	5 - 10%	10 - 20 yrs
• Upgrade windows in Office with high performance double pane windows	5 - 10%	10 - 15 yrs
Interior Lighting		
• Upgrade incandescent lighting in Office and Retail to compact fluorescent lighting	10 - 15%	1.5 - 3 yrs
HVAC Systems		
• Upgrade cooling system in Office and Retail with high efficiency electric DX	10 - 15%	5 - 10 yrs
Hot Water Systems		
• Upgrade service hot water system in Office and Retail with improved system efficiency	0 - 5%	< 1.0 yrs

### COMMERCIAL BUILDING ENERGY ASSET SCORE STRUCTURE AND SYSTEMS

Building ID #: XXXXX Gross Floor Area: 140,000 ft<sup>2</sup>

#### ABOUT THE BUILDING ENVELOPE

	Current Building	Ranking*	Upgrade Opportunity Identified
Roof U-Value, Non-Airleak m <sup>2</sup> /h	0.088	Good	✓
Floor U-Value, Mass area m <sup>2</sup> /h	0.022	Good	✓
Wall U-Value, Framed area m <sup>2</sup> /h	0.077	Good	✓
Window U-Value, Mass m <sup>2</sup> /h	0.58	Fair	✓
Wall in Window U-Value, Mass m <sup>2</sup> /h	0.38	Fair	✓
Window Solar Heat Gain Coefficient	0.95	Fair	✓

#### ABOUT THE BUILDING SYSTEMS

	Current Building	Ranking*	Upgrade Opportunity Identified
Interior Lighting	NA	NA	Fair
Heating	12.4	17.1	Good
Cooling	10.8	21.7	Good
Overall HVAC Systems	17.4	20.8	Good
Hot Water	5.2	6.8	Fair

#### ENERGY USE INTENSITY BY END USE

### COMMERCIAL BUILDING ENERGY ASSET SCORE BUILDING ASSETS

Building ID #: XXXXX Gross Floor Area: 140,000 ft<sup>2</sup>

#### BUILDING SYSTEM CHARACTERISTICS SUMMARY

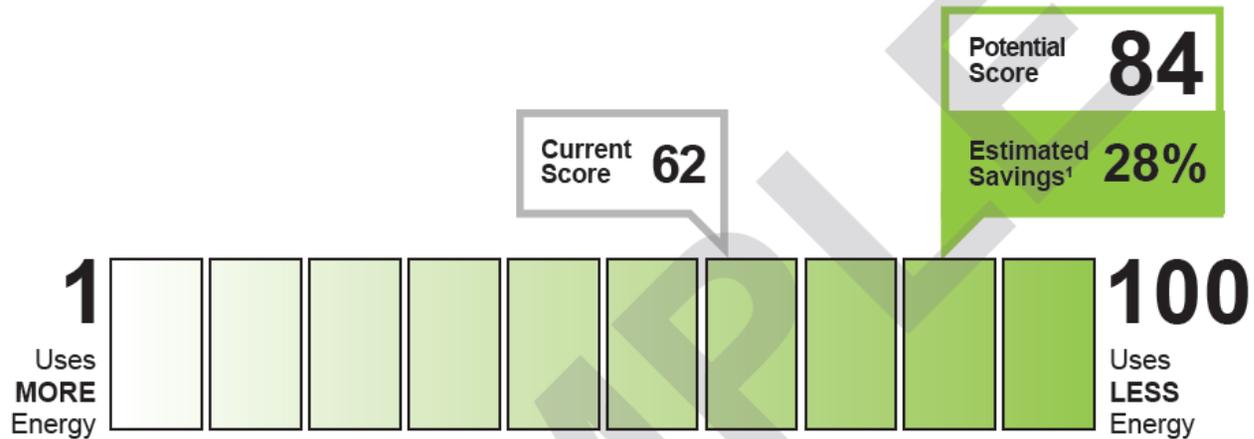
Characteristic	Value	Rating
Occupancy	Office	Good
Area (Sqft)	250k	Good
Floor Area	250k	Good
Floor 1	14k	Good
Floor 2	10k	Good
Drop Ceiling Installed	No	Good
Acoustic Ceiling	0.8	Good
Orientation	S/E from South	Good
Window to Wall Ratio	0.4	Good
Window to Wall Ratio	0.25	Good
Window to Wall Ratio	0.3	Good
Window to Wall Ratio	0.7	Good
Roof	Flat	Good
Roof Type	Built-up/TCM asphalt deck	Good
Roof U-Value	0.028	Good
Wall	Concrete	Good
Exterior Wall Type	Mass Wall of CMU Concrete	Good
Wall U-Value	0.027	Good
Floor	Concrete	Good
Ground Covering	Asphalt	Good
Ground Insulation	No	Good
Interior Lighting	Incandescent	Good
Lighting Type	Fluorescent	Good
Percent of Total Floor Area Served	100%	Good
Occupancy Controls	No	Good
Lighting Controls	No	Good
Lighting Power Density	2.00W/ft <sup>2</sup>	Good

- Provides current score
- Provides potential score and estimated savings
- Weather normalized

## OVERALL BUILDING SCORE

Building ID #: XXXXX

Gross Floor Area: 140,000 ft<sup>2</sup>



# Upgrade Opportunities

- Informs building owners of most cost-effective efficiency opportunities
- Applies life-cycle-cost analysis
- Estimates are given for potential energy savings and payback time
- Can help owners prioritize capital improvements across a portfolio of buildings

## COST EFFECTIVE UPGRADE OPPORTUNITIES

	Energy Savings <sup>7</sup>	Simple Pay Back
<b>Building Envelope</b>		
• Add roof insulation in Office and Retail	5 - 10%	15 - 25 yrs
• Upgrade windows in Office with high performance double pane windows	5 - 10%	10 - 15 yrs
<b>Interior Lighting</b>		
• Upgrade incandescent lighting in Office and Retail to compact fluorescent lighting	10 - 15%	1.5 - 5 yrs
<b>HVAC Systems</b>		
• Upgrade cooling system in Office and Retail with high efficiency electric DX	10 -15%	5 - 10 yrs
<b>Hot Water Systems</b>		
• Upgrade service hot water system in Office and Retail with improved system efficiency	0 - 5%	< 1.5 yrs

- Ranks building envelope, HVAC, lighting, and service hot water systems
- Indicates system performance and whether upgrades are recommended

## ABOUT THE BUILDING ENVELOPE

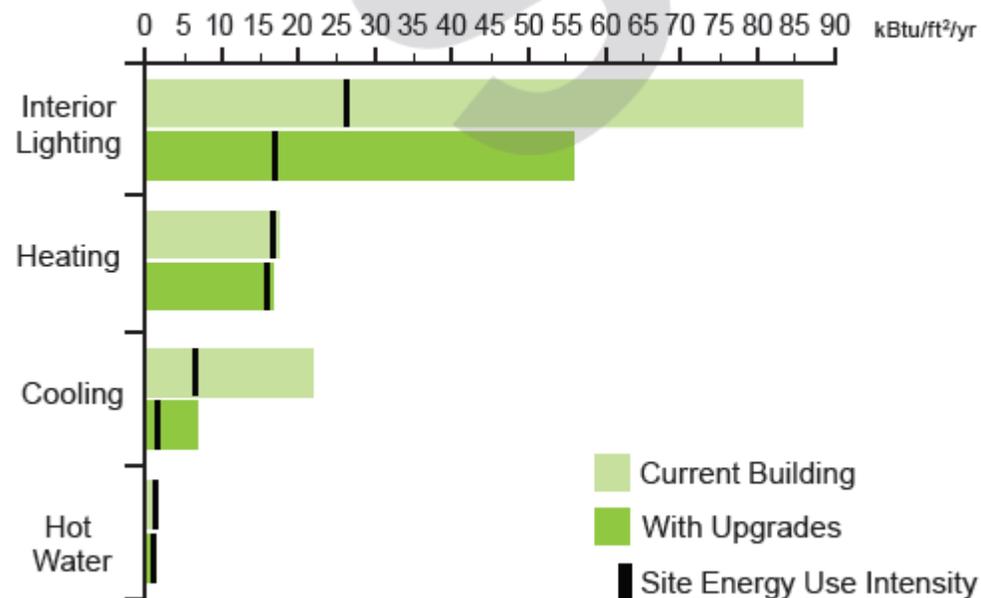
	Current Building	Ranking <sup>8</sup>	Upgrade Opportunity Identified
Roof U-Value, Non-Attic (Btu/ft <sup>2</sup> h °F)	0.056	Good	✓
Floor U-Value, Mass (Btu/ft <sup>2</sup> h °F)	0.052	Good	
Walls U-Value, Framed (Btu/ft <sup>2</sup> h °F)	0.077*	Good	
Windows U-Value (Btu/ft <sup>2</sup> h °F)	0.68	Fair	✓
Walls + Windows U-Value (Btu/ft <sup>2</sup> h °F)	0.38	Fair	
Window Solar Heat Gain Coefficient	0.60	Fair	

## ABOUT THE BUILDING SYSTEMS

	Current Building			Ranking <sup>8</sup>	Upgrade Opportunity Identified
	Load (kBtu/ft <sup>2</sup> /yr)	Source Energy Use (kBtu/ft <sup>2</sup> /yr)	Efficiency <sup>9</sup>		
Interior Lighting	NA	86.5	NA	Fair	✓
Heating	12.4	17.1	0.73	Good	
Cooling	10.9	21.7	0.50	Good	✓
Overall HVAC Systems	17.8	38.8	0.46	Good	
Hot Water	1.0	1.6	0.65	Fair	✓

- Can help owners/operators
  - Plan for capital needs across a portfolio of buildings
  - Prioritize improvements within and among buildings

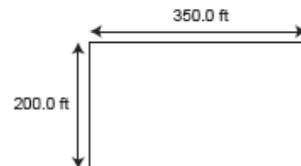
## ENERGY USE INTENSITY BY END USE



## BUILDING SYSTEM CHARACTERISTICS SUMMARY

### Geometry

Above Ground:	2 floor
Below Ground:	0 floor
Floor-to-Floor Height:	
• Floor 1:	14 ft
• Floor 2:	10 ft
Drop Ceiling Installed:	No
Floor-to-Ceiling Height:	9 ft
Orientation:	0.0° from North



### Current Building

#### Roof

Roof Type:	Built-up/EPDM w/metal deck
Roof U-Value:	U-0.056

#### Wall

Exterior Wall Type:	Mass Wall-8" HW Concrete
Wall U-Value:	U-0.077*

#### Floor

Ground Coupling:	Slab
Carpet Installed:	No

### Current Building

#### Windows

Window Frame Type:	Metal
Glass Type:	Single pane
Gas Fill Type:	None
Operable Windows:	No
Window Layout:	Discrete
Window to Wall Ratio:	0.4
Window U-Value:	U-0.68
Window SHGC:	0.6
Window VT:	0.7*

#### Shading

Exterior Shading Type:	External overhang
Height Above Window:	0 ft
Projection:	2 ft

#### Skylight

Skylights Installed:	No
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#### Indoor Lighting

Lighting Type:	Incandescent
Mounting Type:	Recessed
Percent of Total Floor Area Served:	100%
Occupancy Controls:	Yes
Daylighting Controls:	No
Lighting Power Density:	2 W/ft <sup>2</sup> *

Additional documentation and guides available on-line for users.

# Supporting Documents For Users

- Quick Start Guide
- Data Collection Form
- Priority Map
- Report Guide
- Building Upgrade Guide

U.S. Department of Energy  
Commercial Building Energy Asset Score

### Quick Start Guide

To create a Commercial Building Energy Asset Score (Asset Score) for your building you need to complete the following six (6) steps using the Commercial Building Energy Asset Scoring Tool (Asset Scoring Tool). Although you are not required to carry out these steps in a specific order, the following sequence will most likely save you time.

- 1. Input Basic Building Information:**
  - Click the **Input Basic Building Information** button.
  - Enter building name, location, gross floor area, and year of construction.
  - Click the **Next** button to continue.
- 2. Identify Building Use Type(s):**
  - Select all applicable use types.
  - Choose from a variety of options including office, retail, multi-family, education, and others, among many others.
- 3. Create an Inventory of Your Building's Features:**
  - Enter information regarding the building's assembly components (roof, skylight, windows, walls, floors) and its major energy systems (lighting, HVAC, hot water systems). The Data Collection Form can assist you in gathering your building information.
- 4. Create 3-D Blocks of Your Building:**
  - Click the **Blocks** button to construct a 3-D image that approximates the building's geometry, configuration, and orientation. You can find more information below on how to build blocks.
- 5. Apply Use Types and Features to Your Building Block(s):**
  - The Asset Scoring Tool will automatically apply information you entered in Steps 2 and 3 to your building block(s).
  - To ensure that each building block is correctly represented, use the top toolbar icon "Transfer Input" on the next screen to review how each building feature is linked to each building block. Move across the toolbar at the top and review each item one at a time. You can then turn on or off building features (e.g., one type of lighting, heating, etc.) to apply to each of your individual building blocks. This tends to be simpler than trying to fully review one building block and then moving onto the next.
  - If you find that a use type or building feature is incorrectly linked to a building block, simply double the incorrect information from that building block. Then, drag and drop any missing information to the building block from the adjacent section of the toolbar.
  - Click on the toolbar indicator that a particular section is either missing required information or has a problem with data already entered.
- 6. Save your Building and Review your Commercial Building Energy Asset Score Report:**
  - Click the **Save** icon on the toolbar to do a final review of all building data prior to scoring your building.
  - Click **Save Building** to submit your building. You will receive an email notice when an Asset Score Report for your building is available for review and download.

U.S. Department of Energy  
Commercial Building Energy Asset Score 2013 Pilot

### Data Collection Form

Version: 6/14/2014

ALL REQUIRED FIELDS ARE INDICATED

Building Name: \_\_\_\_\_

Data collected by: \_\_\_\_\_

Email, phone: \_\_\_\_\_

Date of Data Collection: \_\_\_\_\_

#### HOW TO USE THIS DATA COLLECTION FORM

This form is intended to facilitate your data collection. The Energy Asset Scoring Tool uses the "block" concept to simplify your building geometry. Most buildings can be scored as one block, unless at least one of the following situations applies:

- The building has sections with different numbers of floors.  
**Example:** A portion of the building is 2 story and the other portion is 10 story.
- Different parts of the building are served by different HVAC systems.  
**Example:** A portion of the building uses a local chiller, the other portion uses packaged DX units.
- The building is mixed-use.  
**Example:** A portion of the building is retail, the other portion is office.

If the building footprint cannot be simplified by the basic footprint shapes, such as rectangular, L, T, or U-shapes:

- If your building contains more than one block, some data may need to be collected and recorded for each block. Make additional copies of the required sections of the data collection form as needed. See each section for detailed instructions.

**REQUIRED DATA:**  
In order to generate a score for the building, all fields shaded in green are required. Users are encouraged to provide information where available for the other data fields as well.

**OPTIONAL DATA:**  
The Asset Scoring Tool can estimate a building's thermal properties based on other information provided (e.g., roof type, floor type, wall type, building location, and year of construction). If the roof, floor, or walls have been altered since the year of construction, it is possible to provide additional relevant information in order to create the potentially improved envelope thermal performance.

The guide contains four data sets and equipment categories for energy efficiency (lighting, cooling, fans, service hot water) based on other information provided (e.g., equipment type, year of manufacture, number of pieces of equipment, and building location). If your information is not specified by users, it is assumed that the vintage of the equipment is the same as that of the building.

### COMMERCIAL BUILDING ENERGY ASSET SCORE

#### ASSET SCORE OVERVIEW

**WHAT IS THE ASSET SCORE?**  
A building's Asset Score reflects the building's overall physical characteristics and overall energy efficiency, independent of occupancy and operational status.

A building's energy use is affected by its structure, its energy systems, operator and maintenance, and occupant behavior. ENERGY STAR Portfolio Manager includes overall energy use based on utility bills.

A building's Asset Score is based on:

- Building envelope (walls, roof, floor)
- HVAC system (heating, cooling, ventilation)
- Lighting system (fixtures and lighting controls)
- Service hot water system
- Other major energy-using equipment

The Asset Score is calculated by applying standard assumptions to the following operational conditions:

- Occupant Density
- Building Scheduling Schemes
- Plug Load Density
- Indoor Temperature Setpoints and Ventilation Rates

### Commercial Building Energy Asset Score: Building Upgrade Guide

This guide complements the energy improvement recommendations listed in your building's Asset Score Report. A building's Asset Score Report provides a range of information, including the building's score and suggestions for how to improve the building's efficiency and score. Given that the Asset Scoring Tool uses limited building data to model the building, the Report's upgrade recommendations are somewhat general.

This guide can help building owners and operators take the next step toward identifying and evaluating the feasibility and applicability of more specific improvements. While the Asset Score Report provides high-level recommendations (e.g., add roof insulation), this guide provides specific technology options to consider and evaluate more thoroughly.

Before implementing any improvements, you will likely need to conduct additional analysis, consider local building codes and equipment standards, and get cost estimates. You may also need to consult with outside experts. This guide can help you get started.

#### GLOSSARY

**Ballast Factor (BF)** – a measure of the actual lumen output for a specific lamp-ballast system relative to the rated lumen output measured with a reference ballast under test conditions.

**Ballast Efficacy Factor (BEF)** – the ratio of the ballast factor (BF) to input-watts. It measures the efficiency of the lamp-ballast system relative to other systems using the same type and number of lamps.

**Coefficient of Performance (COP)** – the ratio of the rate of heat removed to the rate of energy input, in consistent units, for a complete refrigerating system or some specific portion of that system under designated operating conditions.

**Color Rendering Index (CRI)** – a measure of how accurately an artificial light source displays colors. CRI is determined by comparing the appearance of a colored object under an artificial light source to its appearance under incandescent light. The higher the CRI, the better the artificial light source is at rendering colors accurately.

**Energy Efficiency Ratio (EER)** – the ratio of net cooling capacity in Btu/h to total rate of electric input in watts under designated operating conditions.

**mean lumen** – the reduced lumen output that occurs at 60% of the lamp's rated life.

**Solar Heat Gain Coefficient (SHGC)** – the ratio of the solar heat gain entering the space through the fenestration area to the incident solar radiation. Solar heat gain includes directly transmitted solar heat and absorbed solar radiation, which is then re-radiated, convected, or conducted into the space.

\* This guide is available for download from the Commercial Building Energy Asset Scoring Tool landing page beginning in 2014. Subsequent portions of the guide will be administered along with a building's Asset Score Report.

## 2) Pilot Summary

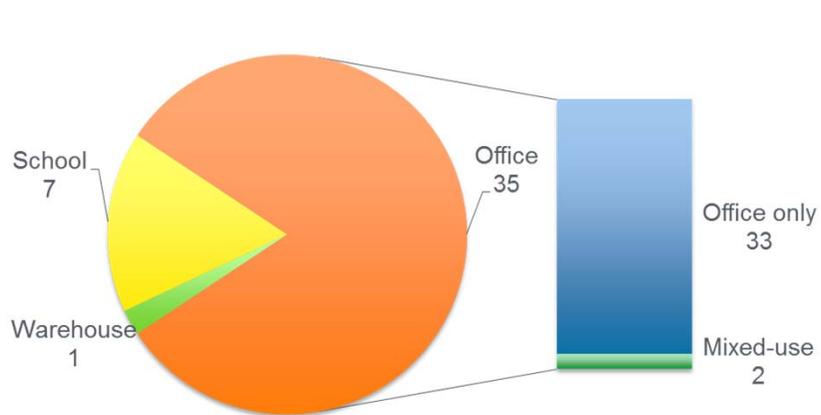
- 2012 and 2013 Pilots included over 200 buildings
  - Tested the technical value of the Asset Score
  - Collected feedback
- This presentation includes analysis of 191 buildings (completed by March 1, 2014).
  - 150 from 2013 pilot, 41 from 2012 pilot
  - 24 million square feet of commercial floor area
- AS Recommendations identified –
  - 278 billion Btu site energy savings
  - 838 billion Btu source energy savings
  - 8.4 million dollar cost savings\*
  - \$0.41/sq.ft. cost savings\*

\*assuming \$0.01/kBtu source energy

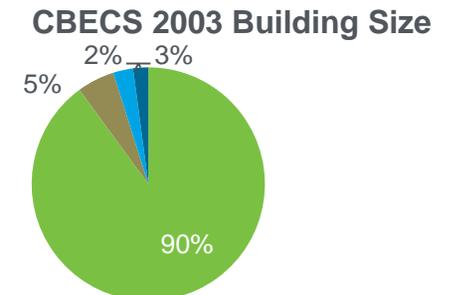
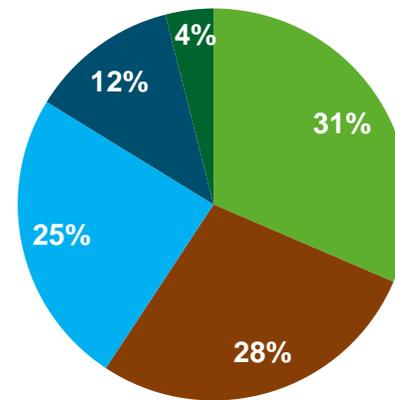
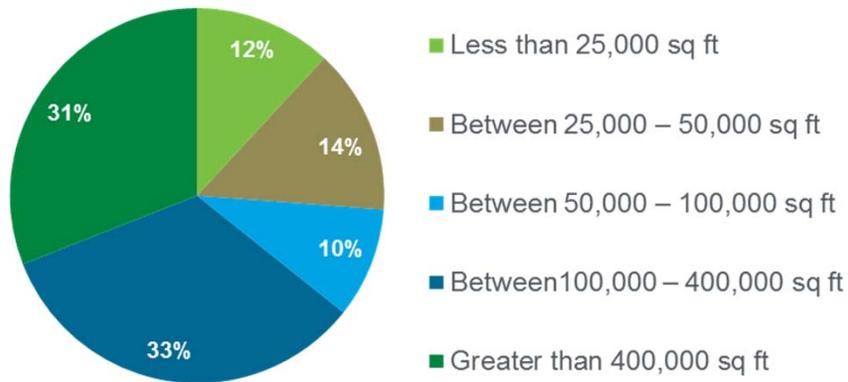
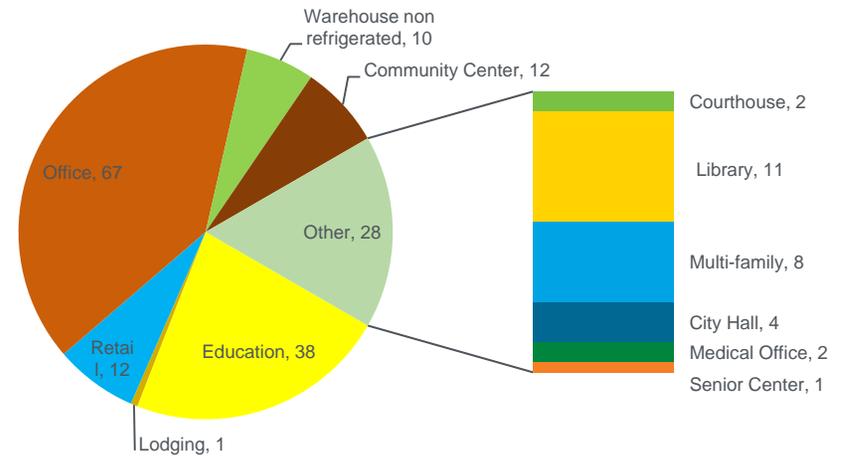
- **Does the recommendation engine work?**
  - Were buildings able to substantially improve scores with retrofits?
  - What EEMs were given to the pilot buildings? How many?
- **Are the scales reasonable? Why or why not?**
  - Do buildings fall across the entire (or majority of ) scale?
  - Do buildings in different climate zones score equitably?
  - Can buildings move up on the scales?
- **Other lessons?**
  - How can tool testing be improved to reduce number of bugs/failures at time of official launch?

# Building Use Type and Size

## 2012 Pilot

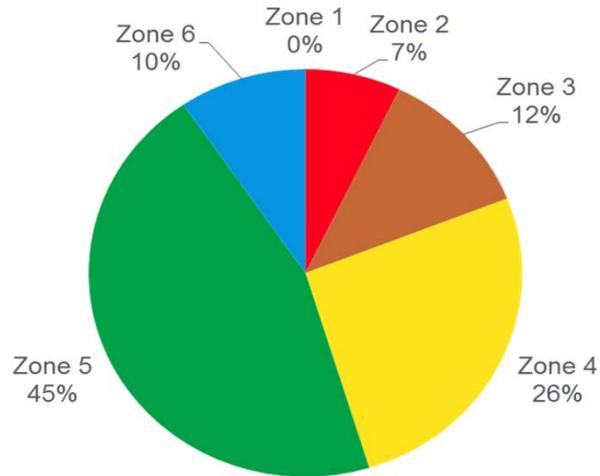


## 2013 Pilot

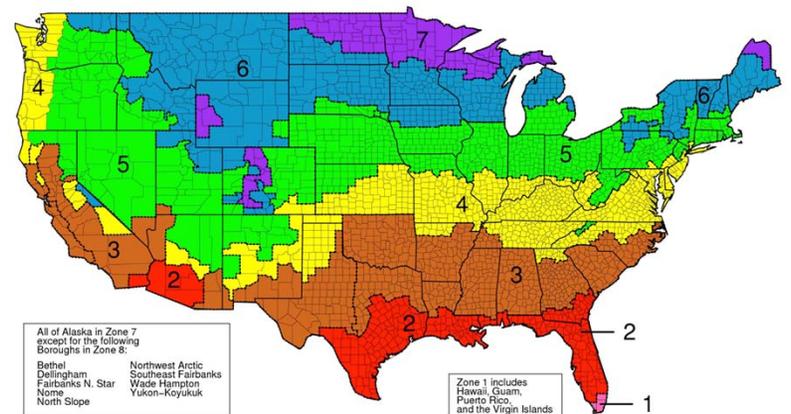
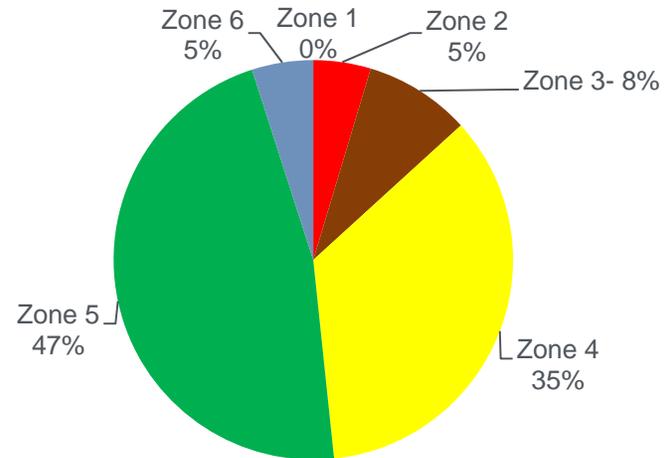


# Climate Zone Locations

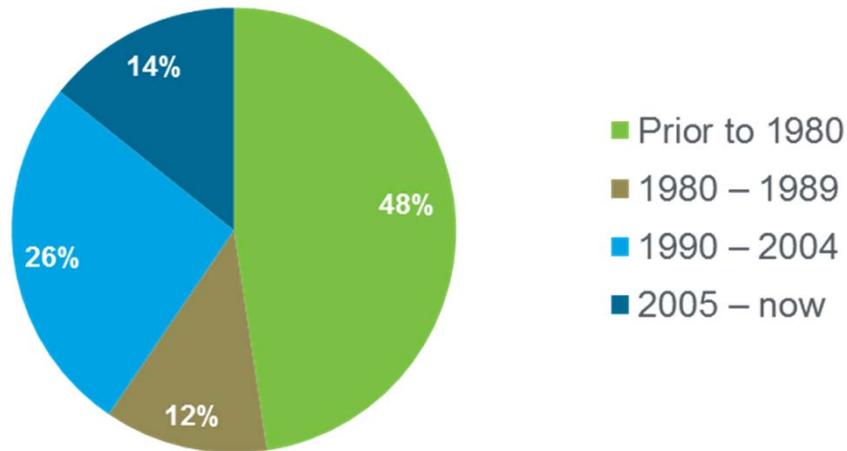
2012 Pilot



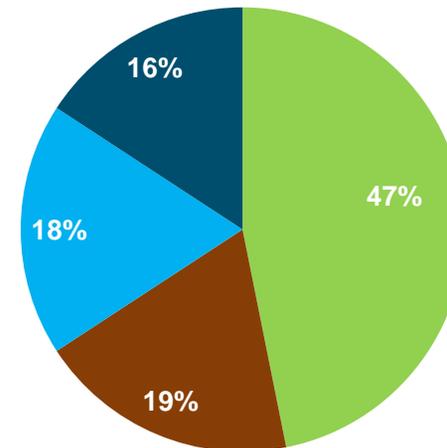
2013 Pilot



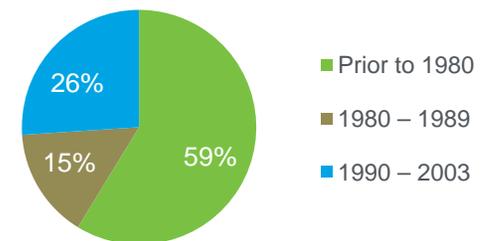
### 2012 Pilot



### 2013 Pilot



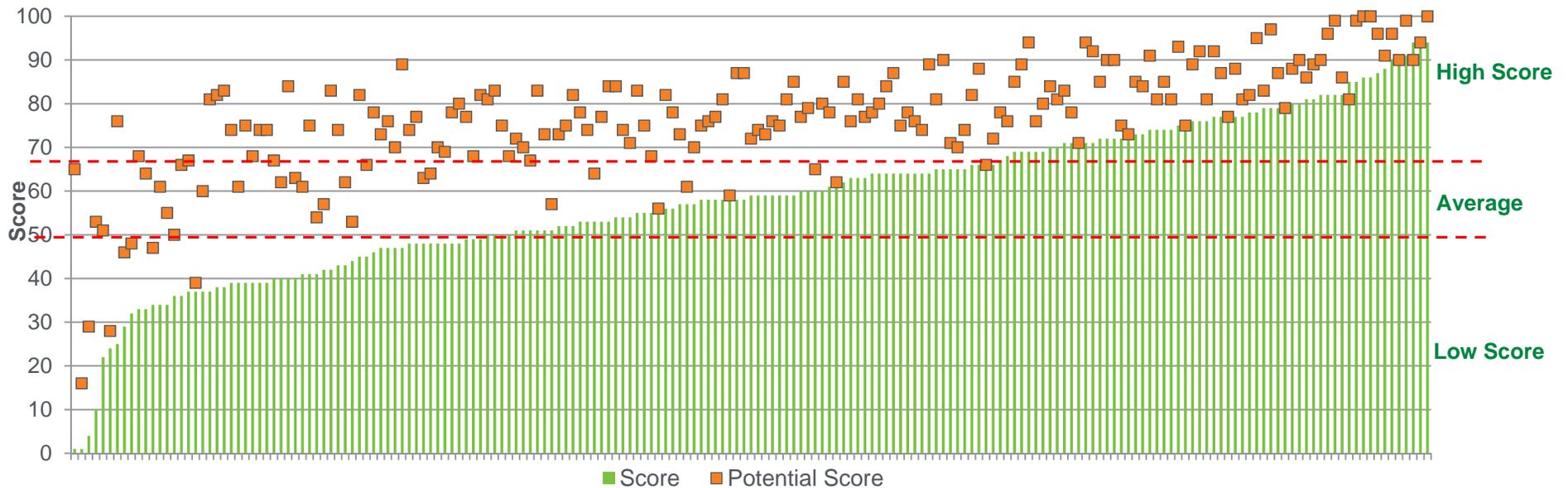
### CBECS 2003 Building Vintage



# Score Summary



# Change in Score: Current vs. Potential

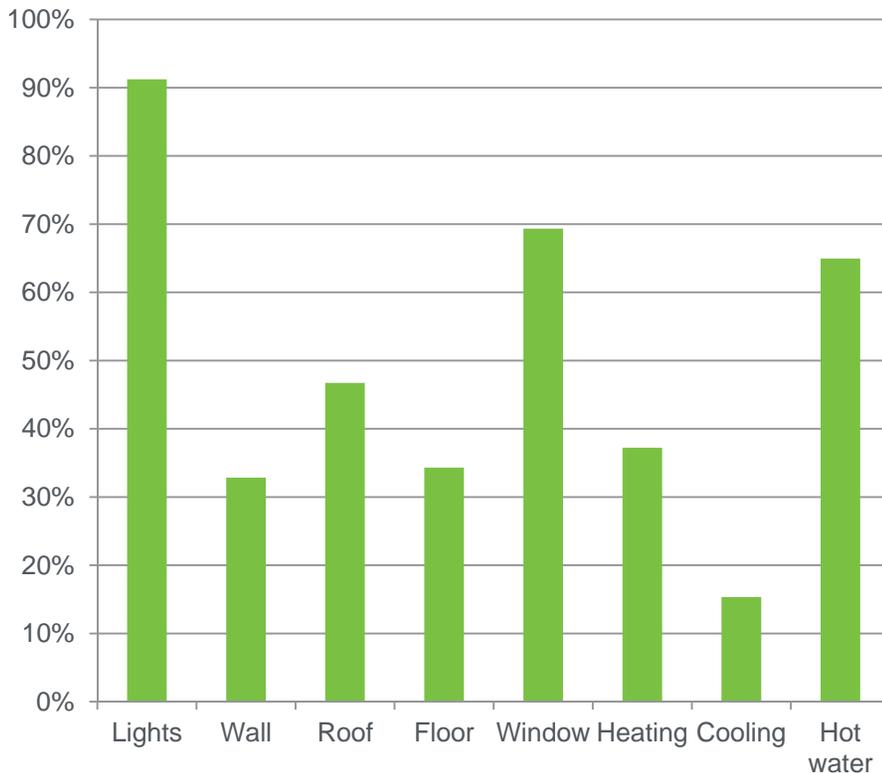


Building Rank by Score	Average Score	Average Potential	Average Change in Score	% Change
<b>Low Score</b> (bottom 1/3)	31.7	60.5	28.8	91%
<b>Average Score</b> (mid 1/3)	56.2	75.5	19.2	34%
<b>High Score</b> (top 1/3)	79.1	88.0	8.9	11%

- On average, lower scoring buildings have greatest potential for improving scores
- However, even those scoring in top third of scale can jump almost 10 points on average

# Summary of Opportunities Recommended to Pilot Buildings

Percentage of pilot buildings that received a particular recommendation



## TOP 3 Recommendations

- **Lighting retrofits** were recommended to more than 90% of buildings
  - Most common EEM in this category is upgrading to High Efficacy T8 Fluorescent Lighting followed by CFL.
- **Window upgrades** were recommended to about 70% of buildings.
  - ‘Installing Commercial Style Vinyl Frame Triple Pane Argon/Super Low-e Windows’ is the most common EEM.
- **Hot water related retrofits** were recommended to almost 65% of buildings
  - ‘Wrapping Tank with Insulation’ is part of most water heater related recommendations.

Building Ranking	Lights	Wall	Roof	Floor	Window	Heating	Cooling	Hot water
Low Score	35%	18%	16%	16%	30%	13%	9%	26%
Average Score	30%	10%	17%	12%	20%	13%	5%	23%
High Score	34%	8%	18%	10%	26%	15%	3%	22%

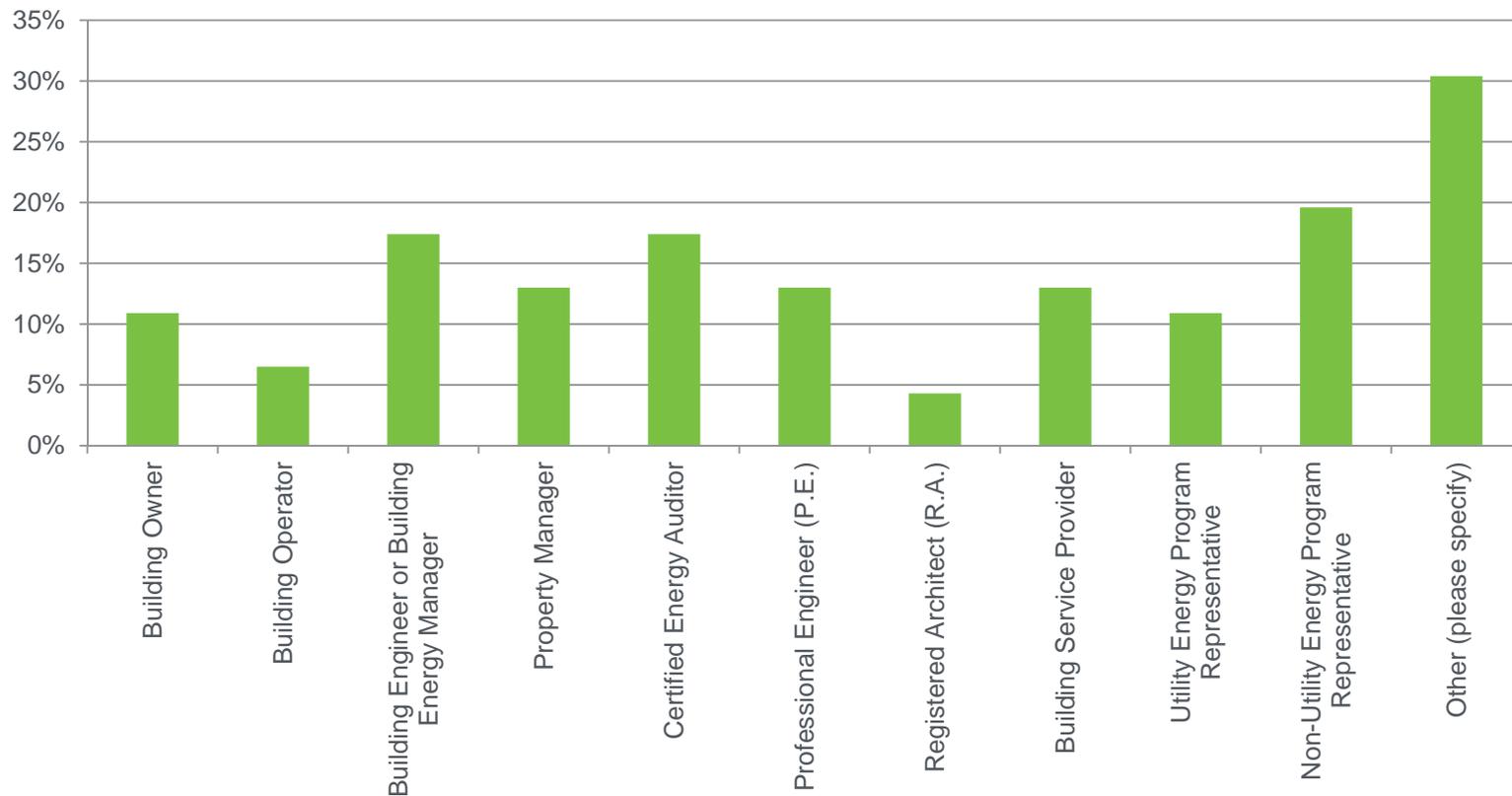
# Pilot #2 Conclusions

- **Appropriate 100 Point Scales**
  - **Good distribution** across the scales, without clustering of scores (as seen in Pilot #1)
  - Lodging scale may be too stringent
- **Effective Whole Building Asset Rating System**
  - No single component is a good predictor of the overall energy efficiency of a building
- **Recommendation Engine is Sound**
  - Tool identifies cost effective recommendations
    - Enables a bottom tier building to improve its score by 65%, a mid-tier building by 31% and a top tier building by 12%
  - Identifies building sub-system with greatest potential for energy savings
- **User Interface, Messaging, and Testing Plan Need Improvement**
  - A number of bugs identified in Pilot #2 delayed production of Asset Score Reports
    - **Testing plan** has been **significantly improved** to reduce likelihood of widespread problems
  - Data requirements and meaning of Asset Score need to be further clarified
    - Greater inline assistance is being added and educational materials/outreach will be further refined

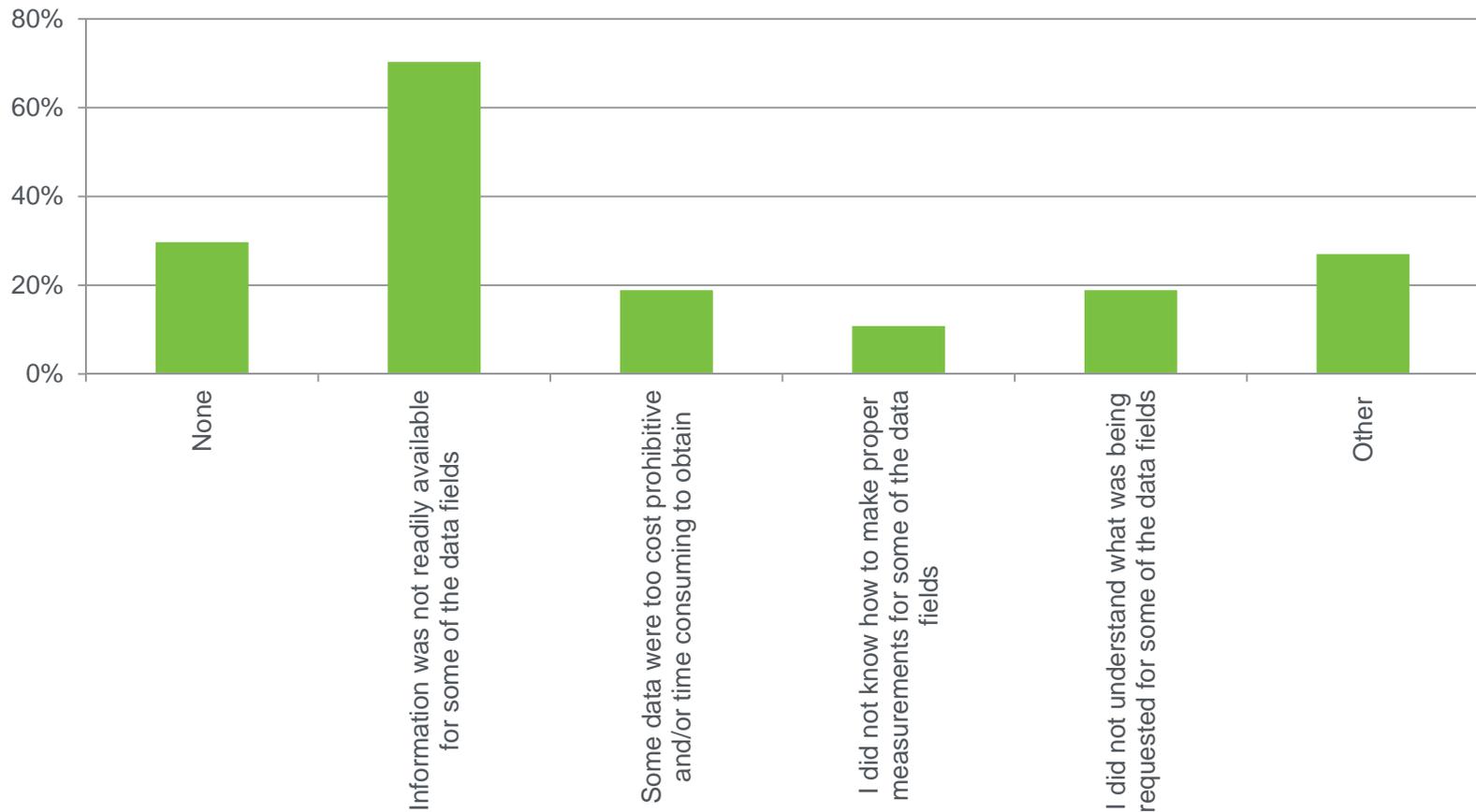
## 3) Pilot Participant Feedback

# Post-rating Questionnaire

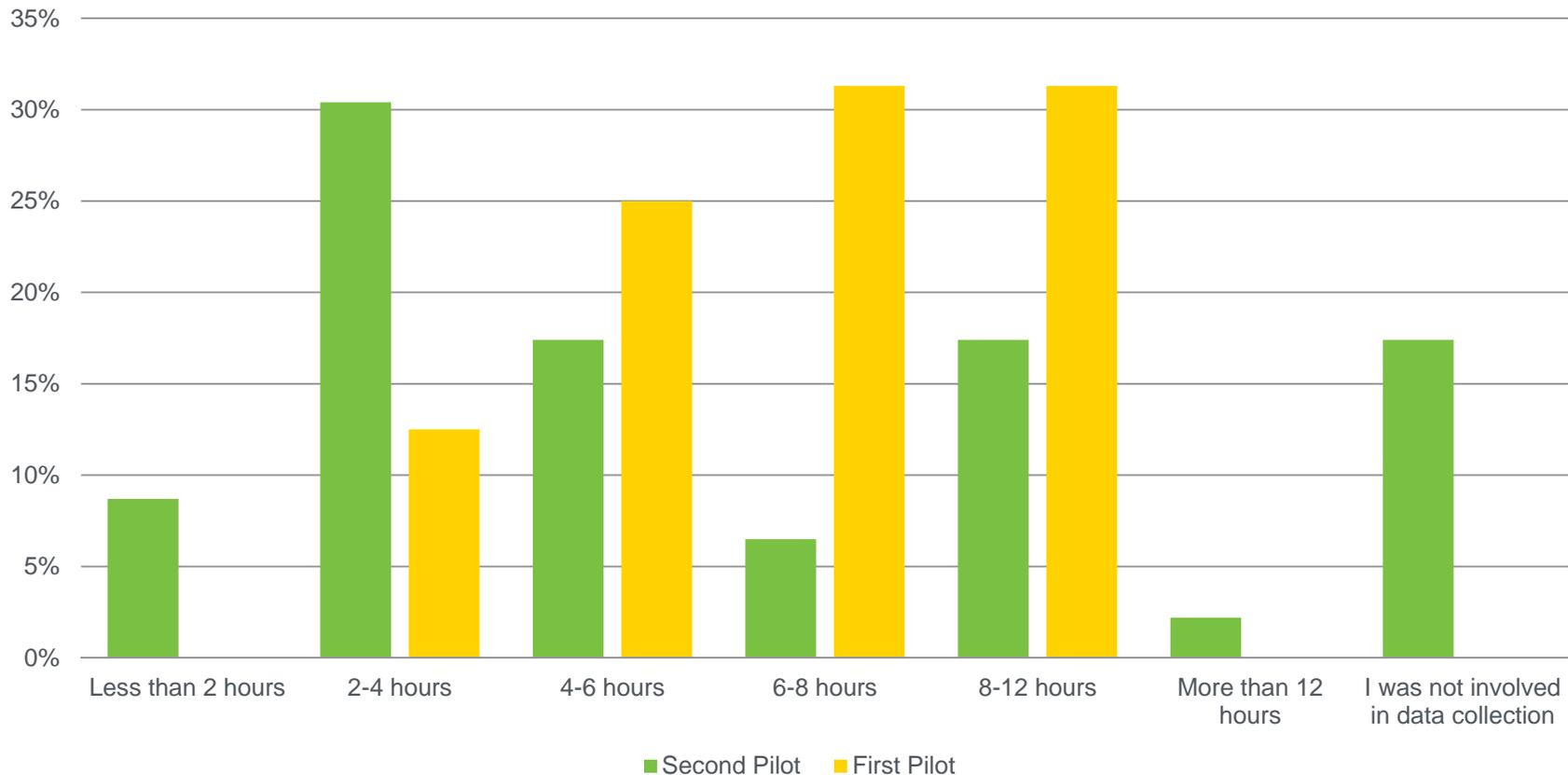
Which of the following best reflects your experience with commercial buildings?  
I am a...(select all that apply)



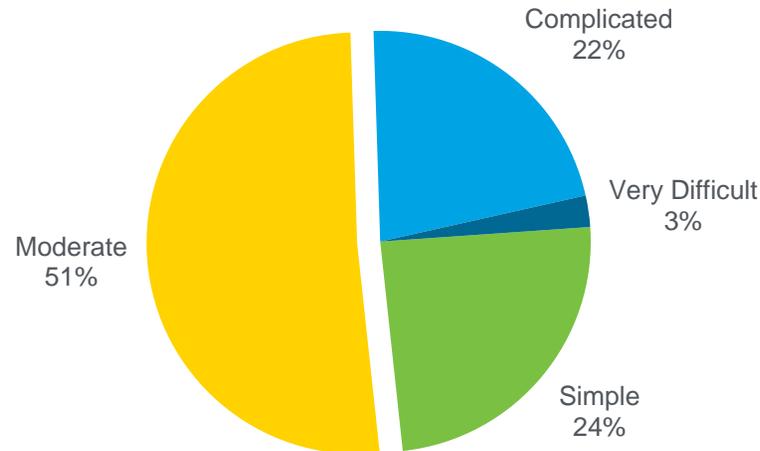
## Did you encounter any problems gathering the Required Data?



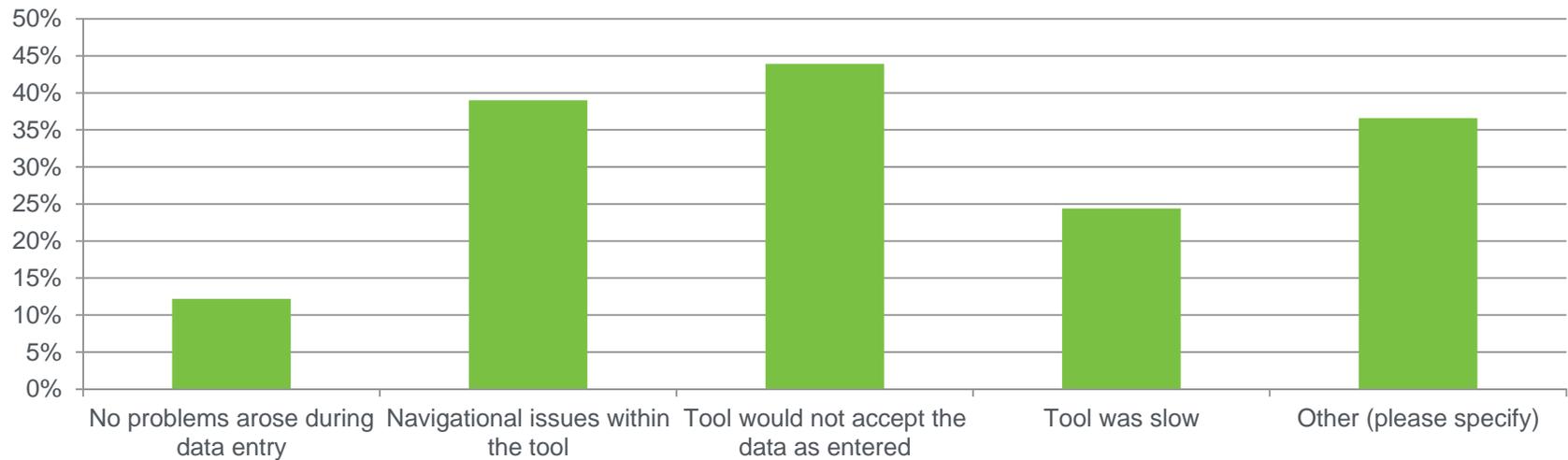
## How long did it take to complete the data collection? (average per building)



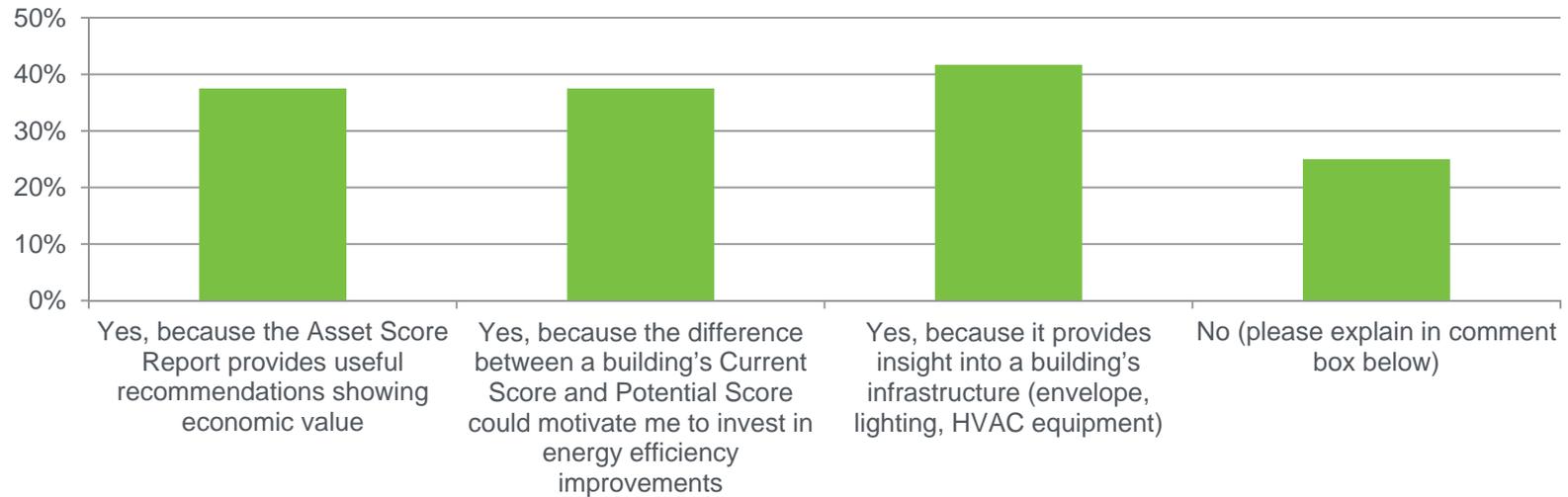
## How would you rate the tool on overall ease of data input?



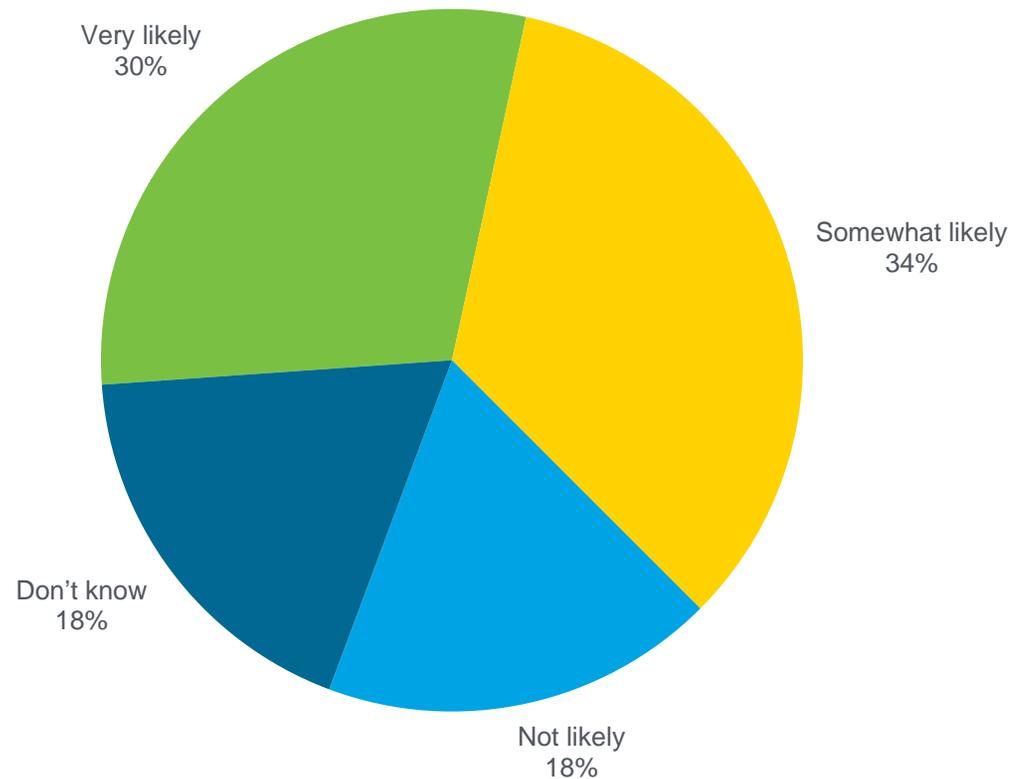
## What problems arose during data entry?



**Do you think an Asset Score could inform your decision-making process, such as buying, leasing, retrofit, or other capital investment? (Choose all that apply.)**



## How likely would you be to use the Asset Scoring Tool when it is released publicly?



## 4) Next Steps

## Evaluate specific use cases and obtain feedback on:

- Accuracy and usefulness of AS
- Opportunities to enhance value of the Score Report
- Value of Score Report vs. effort to collect and enter data
- Potential uses of Asset Score not yet considered

## Additional Conference Call/Webinar

- More interactive opportunity to discuss various report options
- Tentatively planned for June/July 2014
  - If you're interested in participating, email us at [asset.score@ee.doe.gov](mailto:asset.score@ee.doe.gov)

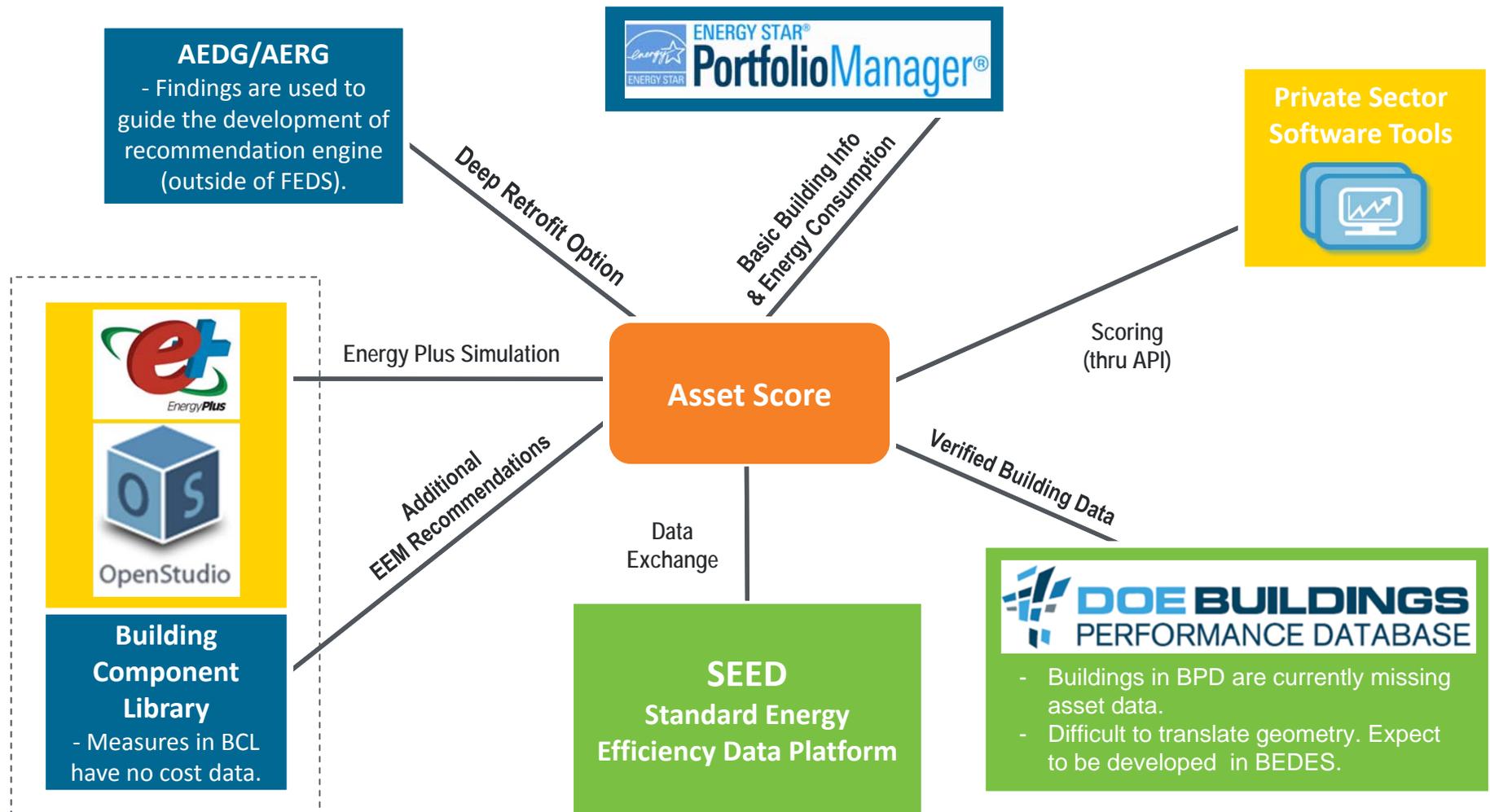
# Technical Upgrades (through end of FY15)

- Update sensitivity analysis and EUI simulations to refine scales for 6 major use types (office, education, retail, warehouse, lodging, multi-family) + some variations (library, city hall, post office, etc.)
- Complete comprehensive test suites
  - A suite of tests to check all combinations of HVAC systems, as well as some alternative envelope and footprint combinations
- User experience improvements
  - Sharing of buildings between users
  - Spreadsheet download of multiple building data
  - Additional validation of all user inputs
  - More onscreen help
  - Suggested default values
- Ongoing API updates & support
- Link to Portfolio Manager, DOE's Standard Energy Efficiency Data (SEED) Platform & Buildings Performance Database (BPD)

# Technical Upgrades (through end of FY15 - cont.)

- Enhance recommendations engine
  - Add recommendations for building sensors & controls
  - Investigate the “deep retrofit” option based on findings from use case analyses
- New features
  - Add unconditioned basement, elevators, parking garage
  - Add more use types with commercial refrigeration and kitchens
  - Add additional HVAC systems (baseboard heater, GSHP)
  - Integrate onsite renewables
- Develop infrastructure for validated AS including quality assurance protocols, training and testing of assessors
  - Provide “validated” score option with user authentication
  - Develop infrastructure for validated Asset Score
  - Quality assurance protocols
  - Assessor qualifications

# Linking to Other Tools via APIs



# Useful Links

- Asset Score Website  
<http://www1.eere.energy.gov/buildings/commercial/assetscore.html>
- Asset Scoring Tool  
[buildingenergyscore.energy.gov/](http://buildingenergyscore.energy.gov/)
- Asset Score Email Box  
[asset.score@ee.doe.gov](mailto:asset.score@ee.doe.gov)

## Using the Tool

- Interested Users: You can sign up and use the tool as is today, however the Asset Score Report will change in the future release of the tool.
- Existing Users: You need to reset your password due to the "heartbleed" (security) issue.

**Building Technologies Program**

Commercial Building Energy Asset Score

**Log In**

email address password Log In

[Forgot your password?](#)

**Pilot Program Information**

Thank you for participating in the energy asset score program! Below is the pilot participant starter kit:

- [Pilot building information form](#) - To become a pilot participant, please complete and return to us at [asset.score@ee.doe.gov](mailto:asset.score@ee.doe.gov)
- [Participant checklist](#) - Outlines the expected timeline and participant activities.
- [Data collection form](#) - The list of data to be collected to receive an energy asset score. This form can be used during your site walk-through and will include all data necessary for input into the energy asset score tool. This form also includes an area for feedback on data collection. Instructions will be given during our training session.
- [Pre-score questionnaire](#) and [Post-score questionnaire](#) - Provides a preview of the online questionnaires. The pilot participants will receive email notifications, with web links, to the actual online questionnaires. They are to be completed in order as specified by the email notification.
- [Additional Building Information form \(Partner Only\)](#) - Provides a standard format for pilot partners to share existing energy audit/model results and/or utility information/ENERGY STAR rating.
- [Pilot program overview](#) - Provides program descriptions, how to participate, participant expectations, and frequently asked questions.
- [Program factsheet](#) - Please feel free to share with other interested parties.

**Remember: All the scores generated during this pilot program are preliminary. To receive your final score you will need to re-score your building once the pilot program is completed.**

For more information, please visit our website at <http://www1.eere.energy.gov/buildings/commercial/assetscore.html>.

To receive a pilot user account, please [contact us](#) with "Request Account" in the subject line.