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

Notice of Opportunity for Technical Assistance for Climate Action Champions

DE-FOA-0001315

T2M@ee.doe.gov

NOTA Webinar on TOPIC 2: Low-Energy Commercial Buildings (Commercial Buildings Partnership Program)

March 25, 2015

Protocol for questions during this Webinar

- All questions asked during this presentation will be recorded and then posted and answered on EERE eXCHANGE

- Questions can also be emailed to T2M@ee.doe.gov and answers will be posted on EERE Exchange under the NOTA

- In addition, all information provided during this Webinar, including a link to this presentation, will be posted on EERE eXCHANGE.

Agenda

1) Overview of NOTA
2) Key dates
3) Area 2: Low Energy Commercial Buildings (Commercial buildings Partnership Program, (CBPB))
4) Working with PNNL & LBNL
5) Examples of topic area 2 Projects
6) Q & A

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Overview of NOTA

The purpose of this Notice of Opportunity for Technical Assistance (NOTA) is to support the goal of the Climate Action Champions (CAC) Initiative through the Department of Energy (DOE) to strengthen Champions' resilience to extreme weather and prepare for other effects of climate change.

The NOTA will provide technical assistance under two topic areas:

1) General Energy Efficiency and Renewable Energy Technical Assistance
    a) $10,000-$150,000 per selected project
    b) Up to 24 months
2) Low-Energy Commercial Buildings (Commercial Buildings Partnership Program)
    a) $10,000-$50,000 per selected project
    b) Must be completed June 30, 2015

Applications may include requests for Technical Assistance for multiple projects, and applicants may submit more than one application.

Key Dates for Topic Area 2:

NOTA Issue Date:	**March 9, 2015**
NOTA Informational Webinar:	March 12, 2015
Topic Two Informational Webinar:	March 25, 2015
Submission Deadline for Applications:	Applications for commercial buildings Technical Assistance may be submitted beginning March 9, 2015 until 5 p.m. ET April 15, 2015, to ensure that Technical Assistance is completed before June 30, 2015.
Expected Date for EERE Selection Notifications:	**Selections will be on a rolling and first come, first served basis,** until funding is expended. All selections are expected to be made by April 30, 2015.

Description Topic Area 2:

Low-Energy Commercial Buildings

(Commercial Buildings Partnership Program)

- The Commercial Buildings Partnership (CBP) Program is a public/private initiative that demonstrates cost-effective, replicable ways to achieve dramatic energy savings in commercial buildings. Technical Assistance will be provided to selectees by the Lawrence Berkeley National Laboratory and/or the Pacific Northwest National Laboratory for guidance from the learnings of the Commercial Buildings Partnerships that can be applied at the municipal and private sector levels. Technical assistance is available for either specific buildings, a portfolio of buildings, or a campus of buildings.
- Technical Assistance for Topic 2 is only available through June 30, 2015, so entities requesting technical assistance under this topic should be ready to engage with the national laboratories immediately. National laboratory staff will contact the technical and executive point of contact with responsibility for coordinating and authority to manage this technical assistance to ensure that the applicant has all of the required building data available prior to the start of the technical assistance activity. The maximum amount for each request is $50,000, and the request must pertain to low-energy commercial building construction or retrofits.

Applications - Topic 2 cont'd

- **Programmatic Technical Assistance**, which can include, but is not limited to, the development of program level guidance documents, market assessments, technical resources or technical analysis of new or existing energy efficiency programs. Program development assistance is available in the areas of: auditing and benchmarking analysis, monitoring for loads and energy use, retrocommissioning, resource planning and scheduling, designing policies to improve opportunities for energy efficiency, and energy reduction campaigns.
- Some additional examples of Technical Assistance topics include:
  - Strategic planning - Providing input on activities based on best practices and lessons learned from working with Commercial Buildings Partnership (CBP) Program partners with particular building types
  - Policies to improve opportunities for energy efficiency
  - Energy reduction campaigns

Applications - Topic 2 –Programmatic TA cont'd

- Best practices for integrated design
- Best practice energy management guidance
- Webinars or other training for local trades on energy efficiency best practices, case studies, or tools. May be tailored for certain market segments (e.g. hospitality) and audiences (e.g. contractors, owners, vendors etc.)
- Strategic planning - Providing input on activities based on best practices and lessons learned from working with CBP partners with particular building types
- Case studies from CBP, including technical and non-technical commercial office and higher education campus improvement projects
- Best practices about getting your organization engaged to find and deliver energy savings
- Arrangement and conduct of training related to building energy efficiency and commercial building operations (including commissioning and retrocommissioning)

Applications - Topic 2 Building Specific TA:

Building(s) Specific Technical Assistance to identify, estimate, and select appropriate energy-efficiency measures, deploy the correct technology and improve operations to achieve deep energy savings in new and retrofitted buildings. Project- or Portfolio-specific technical assistance is available for public buildings. This scope is contingent upon the applicant providing information on the targeted buildings and/or campuses of buildings within two weeks of notification of Selection in order for the technical assistance to be feasible within the timeframe. Each building and/or campus identified shall include collected energy data for each fuel source at the campus and building level on a monthly basis, or more frequently, for no less than a year. Building data are also required, such as square footage and building descriptions including use type, occupancy, etc. A complete list will be provided upon Selection Notificatioin based on the technical assistance requested.

Some additional examples of Technical Assistance topics include:

Applications - Topic 2 Building Specific TA cont'd:

- Short-term monitoring to understand the loads and breakdown of energy usage in particular buildings, to be conducted in March-June 2015 timeframe.
- Portfolio assessment and benchmarking – guidance on how to pick out the buildings most in need of help to get the biggest return on your investment
- Identifying opportunities for energy savings that could be applied in new and existing buildings – Energy Efficiency Measures (EEMs) and specific technologies
- Part load efficiency analysis
- Best practice energy management guidance
- Developing baseline building energy models to estimate the savings potential of various EEMs. (single-building only)
- Auditing
- Benchmarking analysis
- Construction document design review for energy efficiency goals
- Prepare specifications for recommended improvements
- Organize and conduct design charrettes

Criterion Topic 2:

- Applications will be evaluated on a rolling and first come, first served basis starting on March 9, 2015 and will be assigned a rating of Qualified or Not Qualified.
- The application must meet all requirements below to be determined Qualified under Topic 2.
- If several applications are submitted simultaneously and determined to be Qualified then funding priority will be given to designees that (1) have received lesser technical assistance to date under this NOTA OR (2) are determined to be most innovative or have the highest potential for replicability.

Criterion Topic 2 cont:

Determination of Qualified or Not Qualified Applications:

- Applicant identifies the appropriate type(s) of technical assistance requested, from the list under "Type of Technical Assistance Requested under Topic 2" starting on page 10 (example "1j" or "2d.") Each narrative must:
  - Identify whether the assistance will target a whole sector (i.e. hospitals), or specific building(s) (i.e. a campus or portfolio of buildings); and
  - Describe the project scope and goal in one paragraph.
  - Describe the Applicant goals for low-energy buildings are appropriate, including any targets or milestones;
  - Provide tangible impacts from the program/project (energy savings, GHG mitigation, etc.);
  - Describe how the Technical Assistance helps designee achieve goal(s) consistent with this NOTA;
  - Describe the potential for replicability of the technical assistance in future projects;
  - Propose a project for which the requested Technical Assistance is scheduled to completed prior to June 30, 2015.

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Applications - Topic 2

Topic 2 Applications are limited to Two Pages and must include:

A Project Summary file with the following information for each project:

- Type(s) of technical assistance requested, from the list below (example "1j. - Arrangement and conduct of training related to building energy efficiency and commercial building operations (including commissioning and retrocommissioning)"). For each type of technical assistance requested, identify whether the assistance will target a whole sector (i.e. hospitals), or specific building(s) (i.e. a campus or portfolio of buildings), and describe the project scope and goal in one paragraph.
- Provide the following information for each project:
  - Project name, Champion's name, organization, PI name, email, and phone number;
  - Applicant goals for low-energy buildings, including any targets or milestones;
  - Expected impacts from the program/project (energy savings, GHG mitigation, etc.);
  - Explanation of how this technical assistance is expected to help you achieve your goal(s);
  - Explanation of how this technical assistance could be replicated in future projects;
- Specify the date by which the requested Technical Assistance should be completed (must be prior to June 30, 2015).

Technical Assistance-NOT Financial Assistance

There is no direct funding to the applicant under this Notice of Technical Assistance. Selected Applicants will receive Technical Assistance, not funding.

Climate Action Champions selected under this Notice will receive Technical Assistance provided through DOE by DOE National Laboratories and/or other entities organized as Technical Assistance teams by DOE. It is anticipated that technical assistance under this NOTA will be provided via Technical Assistance agreements between (1) a DOE National Laboratory providing the Technical Assistance and (2) a selected Champion. DOE will provide the funding for the selected Technical Assistance project directly to the Technical Assistance Provider.

Significant participants of these teams will be selected at DOE's discretion and could include the DOE Laboratory System, such as the National Renewable Energy Laboratory (NREL), Sandia National Laboratories (SNL), Lawrence Berkeley National Laboratory (LBL), Pacific Northwest National Laboratory (PNNL), and Oak Ridge National Laboratory (ORNL), among others. Other entities may be added to the teams by DOE as necessary.

Working the LBNL & PNNL

Agreements and Necessary Authorizations Needed

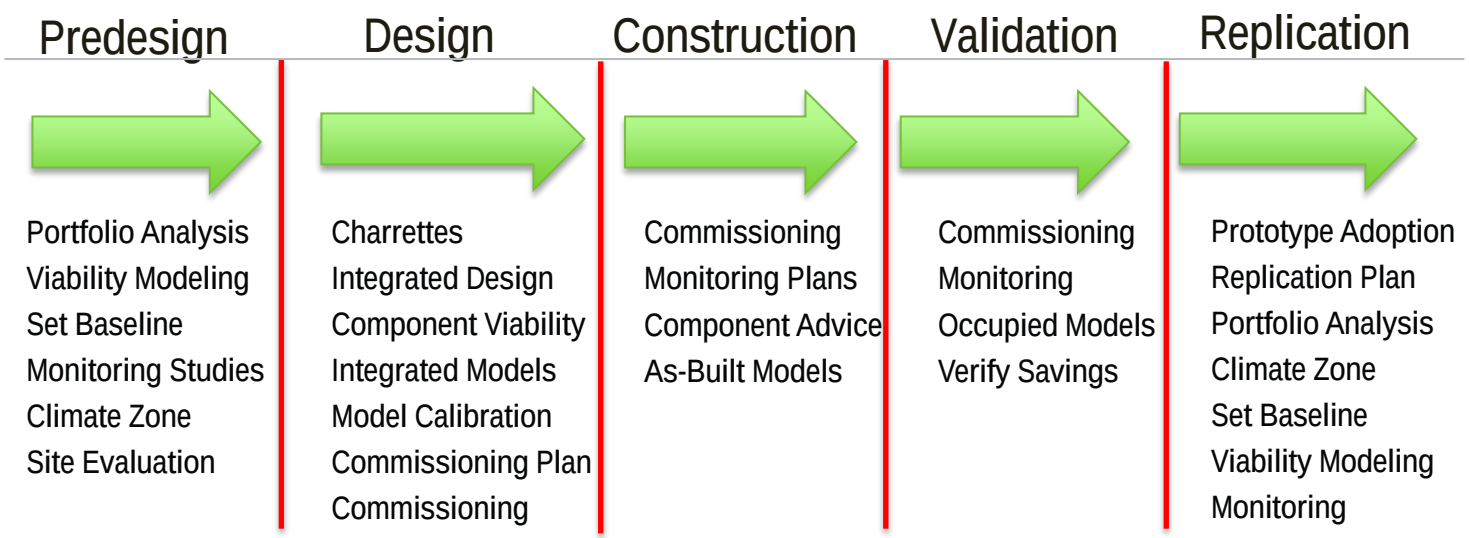
- Memorandums of Agreement (MOA) for this NOTA -limited circumstances.
  - more complex projects or
  - provider is other than a DOE National Laboratory
- Selected Champions will work with LBNL or PNNL to put the appropriate agreements in place.
- Labs would work under their standard processes to get the necessary authorizations to begin work.
  - Technical Assistance Agreement
  - Letter of Commitment

Commercial Building Partnership (CBP) Objective

The DOE CBP addresses challenges, barriers, and knowledge gaps building owners face…

in all phases of new construction and retrofit energy saving projects,

from portfolio analysis and conceptual design through building operation and replication of successful pilot projects.



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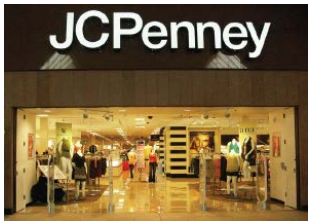
Activities for Existing Buildings

- Compiling and Reconciling Records
- Assessing Previous Analyses
- Analyzing Utility Records
- Documenting Uses and Schedules
- Determining Appropriate Models
- Establishing Baseline and Calibrating Models
- Scheduling and Conducting Work to Avoid Disruption to Operations and Security
- Site Evaluation for Code Compliance and Health and Safety
- Site Evaluation for Energy Analysis

Projects – PNNL CBP-1



PNC Bank Branch (office)

- Fort Lauderdale, FL, new construction, complete (59%)
- Singer Island, FL, renovation, complete (47%)

Bank of America Bank Branch (office)

- Punta Gorda, FL, new construction, complete (47%)

jcpenney Department Store (mercantile-retail)

- Dallas, TX, new construction, complete (52%)
- Colonial Heights, VA, renovation, complete (36%)

Regency Centers (mercantile – strip mall)

- Granada Hills, CA, renovation, complete (20%)

Intercontinental Hotel Group (IHG) (lodging)

- Crowne Plaza, Arlington, VA, renovation, complete (24%)

Hines (property management – agent for Morgan Stanley) (large office)

- New York City, NY, renovation, complete (39%)

Projects – PNNL CBP-2 (ARRA)

The Home Depot (mercantile-retail)

- Lodi, CA, new construction, complete (42%)

Grand Valley State University (higher education)

- Grand Rapids, MI, new construction, complete (38%)

- Allendale, MI, new construction, complete (51%)

Ft. Bragg (education)

- Ft. Bragg, NC, new construction, complete (52%)

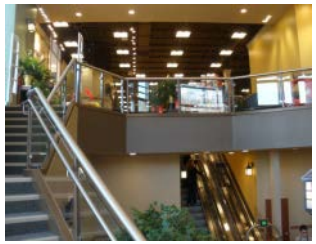
Department of Labor/Job Corps (cafeteria)

- Reno, NV, new construction, 100% CD *(May 2014) – Did not complete stage gates*

General Services Administration, Pease Federal Building (office)

- Portsmouth, NH, new construction, 100% CD *(December 2014) – Did not complete stage gates*

Projects – NREL Combined CBP



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Projects – LBNL CBP-2

Achieving a Net Zero Energy Retrofit —
in a humid, temperate climate — lessons from the University of Hawai'i at Mānoa

Keeping Energy Savings in the LOOP

A New Campus Built on Efficiency

The University of Califorinia, Merced

Lights, Cameras, Action… and Cooling – The case for centralized low carbon energy at Fox Studios

Massachusetts Institute of Technology

Long Beach Gas and Oil
New Municipal Office Building

CBP Case Studies Are Available For Each Project

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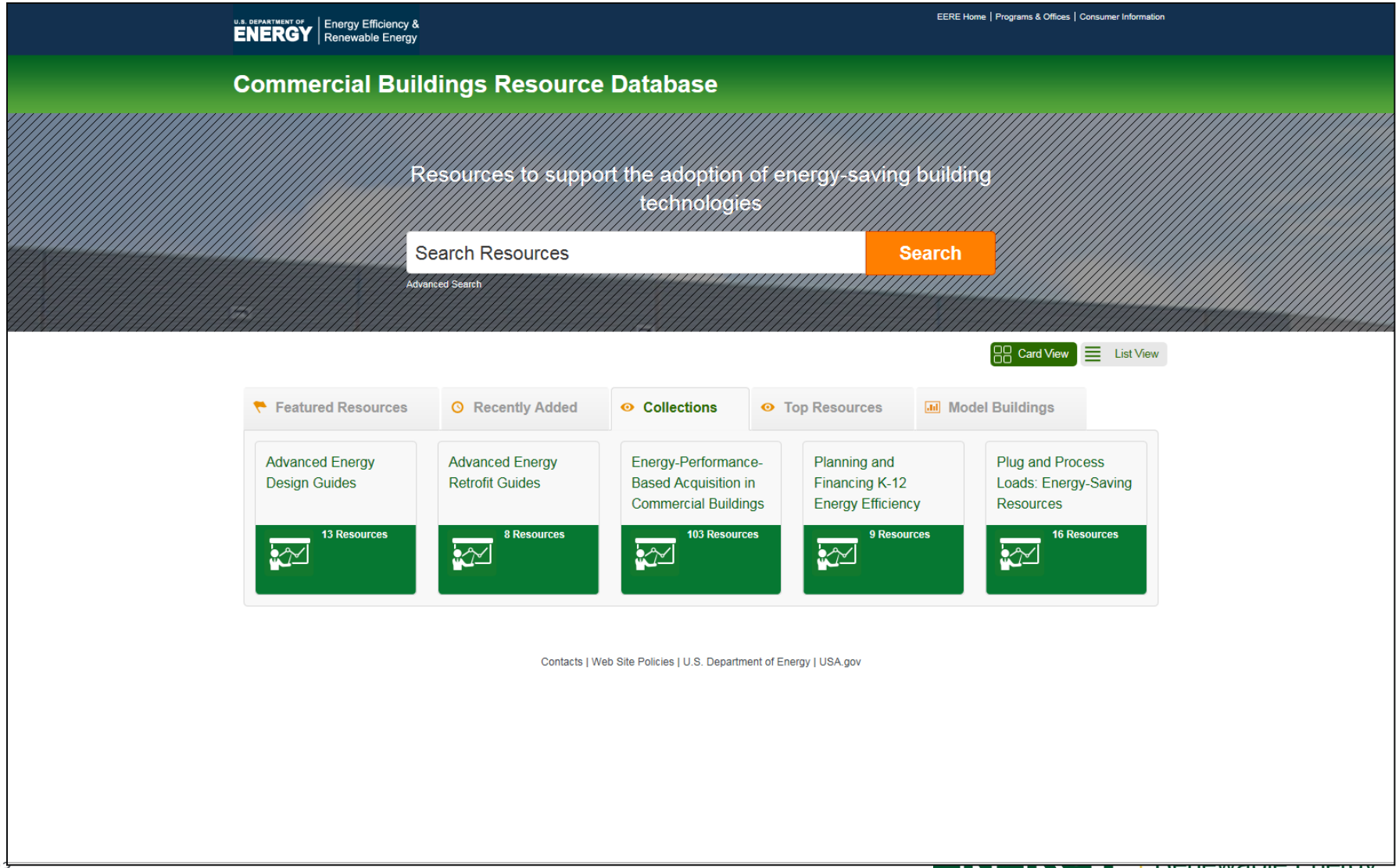
https://buildingdata.energy.gov/cbrd/

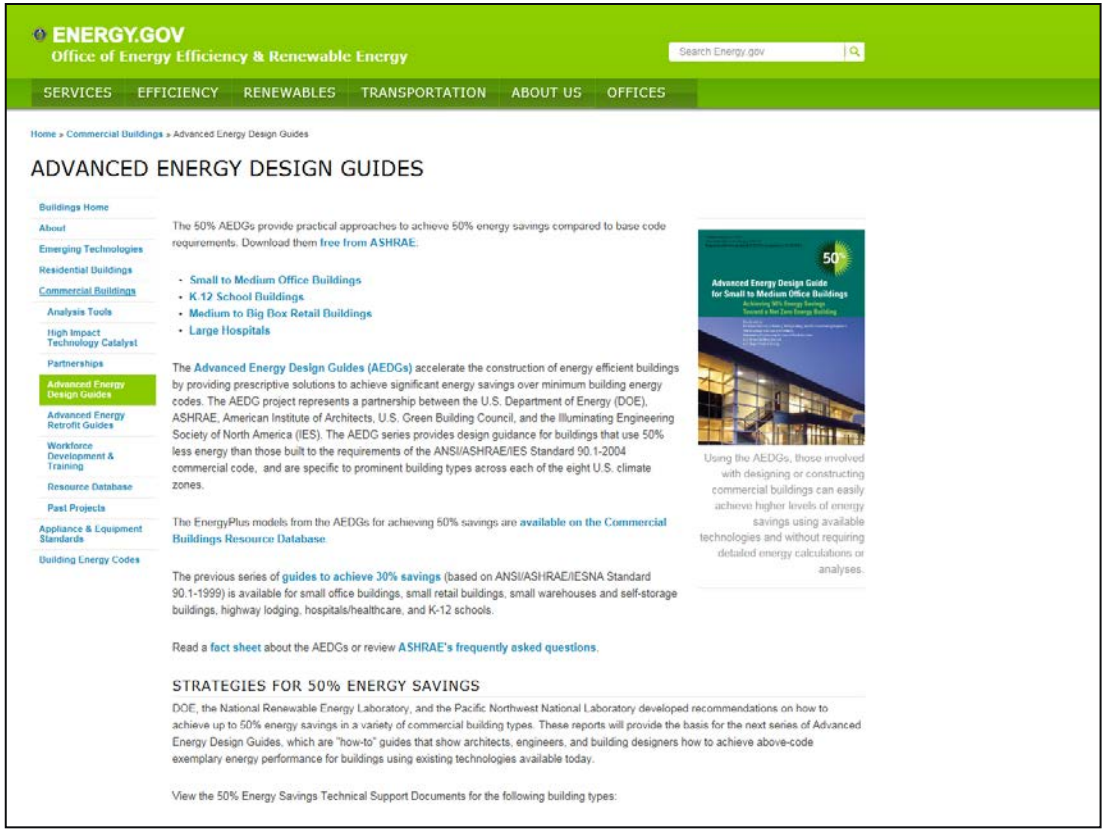


Advanced Energy Design Guides

Strategies for 50% energy savings and sustainable design.
http://energy.gov/eere/buildings/advanced-energy-design-guides

- Small to Medium Office Buildings
- K-12 School Buildings
- Medium to Big Box Retail
- Large Hospitals

Plus more



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Resource Database
Past Projects
Appliance & Equipment Standards
Building Energy Codes

The 50% AEDGs provide practical approaches to achieve 50% energy savings compared to base code requirements. Download them free from ASHRAE:

- Small to Medium Office Buildings
- K-12 School Buildings
- Medium to Big Box Retail Buildings
- Large Hospitals

The Advanced Energy Design Guides (AEDGs) accelerate the construction of energy efficient buildings by providing prescriptive solutions to achieve significant energy savings over minimum building energy codes. The AEDG project represents a partnership between the U.S. Department of Energy (DOE), ASHRAE, American Institute of Architects, U.S. Green Building Council, and the Illuminating Engineering Society of North America (IES). The AEDG series provides design guidance for buildings that use 50% less energy than those built to the requirements of the ANSI/ASHRAE/IES Standard 90.1-2004 commercial code, and are specific to prominent building types across each of the eight U.S. climate zones.

The EnergyPlus models from the AEDGs for achieving 50% savings are available on the Commercial Buildings Resource Database.

The previous series of guides to achieve 30% savings (based on ANSI/ASHRAE/IESNA Standard 90.1-1999) is available for small office buildings, small retail buildings, small warehouses and self-storage buildings, highway lodging, hospitals/healthcare, and K-12 schools.

Read a fact sheet about the AEDGs or review ASHRAE's frequently asked questions.

Using the AEDGs, those involved with designing or constructing commercial buildings can easily achieve higher levels of energy savings using available technologies and without requiring detailed energy calculations or analyses.

STRATEGIES FOR 50% ENERGY SAVINGS

DOE, the National Renewable Energy Laboratory, and the Pacific Northwest National Laboratory developed recommendations on how to achieve up to 50% energy savings in a variety of commercial building types. These reports will provide the basis for the next series of Advanced Energy Design Guides, which are "how-to" guides that show architects, engineers, and building designers how to achieve above-code exemplary energy performance for buildings using existing technologies available today.

View the 50% Energy Savings Technical Support Documents for the following building types:

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www.pnnl.gov/uac/

Opening page describes use and purposes

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Rooftop Air Conditioner

- Home
- RTU Comparison Calculator
- RTUCC Methods
- RTUCC Revision History

About the Comparison Calculator

The Rooftop Unit Comparison Calculator (RTUCC) compares high-efficiency rooftop air conditioners to standard equipment in terms of life cycle cost. This web application provides an alternative to complicated building simulation models, while offering more detail than simplified estimating tools that are commonly available. While simplified tools are typically based on full-load efficiencies and full-load equivalent operating hours, the RTUCC accounts for local climate and partial-load, as well as full-load efficiencies.

Contact Us

uac@pnl.gov

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Conclusion

- DOE and the National Labs have a lot of experience, tools, and resources to help you save energy in new and existing buildings and campuses.
- The real constraint on Topic 2 projects is time.
- Project scope can range from phone assistance, to planning, to field studies.
- If there is not enough time to do a complex study, break it into smaller pieces and choose one of those for the assistance.

Questions

Q & A

- Questions about this NOTA? Email T2M@ee.doe.gov
  - EERE will attempt to respond to a question within 3 business days,
  - Problems logging into EERE Exchange or uploading and submitting application documents with EERE Exchange? Email EERE-ExchangeSupport@hq.doe.gov.
  - Include NOTA name and number in subject line
- All questions asked during this presentation will be posted on EERE Exchange