

Commercial Real Estate Energy Alliance (CREEA) Frequently Asked Questions

Commercial real estate leaders interested in dramatically reducing the energy consumption and greenhouse gas emissions of the commercial real estate sector are joining the Commercial Real Estate Energy Alliance (CREEA)—a Department of Energy-coordinated initiative aimed at achieving deep energy savings while preserving or enhancing marketability, profitability, and tenant satisfaction.

What is CREEA?

The Commercial Real Estate Energy Alliance (CREEA) is an informal, industry-led association of commercial property owners and operators coordinated by the Department of Energy (DOE) as part of the Net-Zero Energy Commercial Building Initiative (CBI). CREEA works with DOE and DOE's national laboratories to advance efficient building technologies, promote the construction of high-performance buildings, and reduce the energy consumption and carbon footprint of the commercial real estate market.

Why create CREEA?

- Concerns about energy reliability, price volatility, and the potential impact of greenhouse gas reduction policies on profitability are driving commercial real estate market demand for innovative, high-performance, energy-efficient solutions.
- Commercial real estate leaders are in the best position to define what is needed, what works, and what doesn't in order to improve the energy efficiency of commercial properties.
- Technology, market, and policy barriers impede widespread adoption of high-performance building practices and technologies. For example, some developing technologies are unproven or pose significant operational integration challenges, while others are too costly at current prices to meet developers' and tenants' expectations. CREEA is a vehicle for evaluating, testing, and ultimately implementing replicable approaches to achieving energy-efficient buildings and systems for the commercial real estate sector.
- CREEA is an integral component of DOE's CBI, authorized by the Energy Independence and Security Act of 2007 (EISA 2007) to speed the development and adoption of energy-efficient green building technologies in the commercial building market. See page 4 for more information about CBI.

What does CREEA do?

CREEA is a forum for commercial real estate owners and operators, where peers can share vital experiences and insights, where best practices in efficiency are continually documented and publicized, and where members define and address the challenges that must be overcome to accelerate progress. Specifically, CREEA works with its members to:

- Provide real-time access to advanced technologies and analytical tools emerging from DOE and the national laboratories.
- Create and share successful, evidence-based strategies for integrating advanced, high-performance technologies or processes in their facilities.
- Serve as a consistent, compelling voice calling on national manufacturers and distributors for highly efficient products and services in the commercial real estate sector.
- Provide greater consistency in energy efficiency program design and delivery.
- Help DOE shape the future of technology research and development by clarifying the commercial real estate sector's specific business needs.
- Validate the commercial real estate sector's energy and carbon reduction efforts to internal and external audiences, including prospective tenants and buyers and the financial community.
- Increase significantly commercial real estate's energy efficiency, which will also reduce greenhouse gases.
- Lower the cost of technologies and overcome regulatory barriers.

What are the benefits of joining CREEA?

- CREEA offers the opportunity to collaborate with the nation's premier building scientists and most prestigious commercial real estate companies on strategies to advance energy efficiency in commercial real estate buildings.
- CREEA members have access to cutting-edge technologies and analytical tools emerging from DOE and the national laboratories that are not widely available in the marketplace.
- CREEA members help define best practices and technology solutions which will revolutionize the way commercial properties are designed, built, and operated. Members will be pioneers in the effort to accelerate commercialization and market adoption of a broad range of successful, cost-effective, energy-saving strategies.
- For commercial property developers, owners, and operators, CREEA membership cultivates a "green" corporate image, providing a way to stand out in the highly competitive marketplace and attract employees interested in productive, cost-effective, and sustainable work places.
- CREEA members shape a more energy-efficient, environmentally sustainable future for the commercial real estate industry and the nation.

How is CREEA organized?

The goals and priorities of CREEA are driven by a steering committee consisting of representatives who can influence the energy footprints of their companies. The steering committee is currently developing first-year objectives and exploring how to structure the alliance to attract membership and support specific goals.

A potential model for CREEA is the Retailer Energy Alliance (REA), launched in February 2008.¹ The REA Steering Committee has targeted five areas in retail buildings and operations that require best practices toolkits as well as further research into innovative, cost-effective technologies. These five areas—which include lighting, HVAC, and whole building systems—are the basis for the REA subcommittees. REA members serve on subcommittees of interest to their companies. Each subcommittee develops consensus around their building area and provides leadership and task guidance to the working groups.

Who are the members of CREEA?

Current CREEA Steering Committee members include:

CB Richard Ellis, Cushman & Wakefield, Grubb & Ellis, Hilton Hotels Corporation, Jones Lang LaSalle, MGM Mirage, Transwestern, U.S. General Services Administration, USAA Real Estate Company, The Walt Disney Company, Wyndham Hotel and Resorts, American Hotel and Lodging Association, American Society of Heating, Refrigerating and Air-Conditioning Engineers (ASHRAE), Building Owners and Managers Association (BOMA), Illuminating Engineering Society of North America (IES), International Council of Shopping Centers, NAIOP, and Real Estate Roundtable.

Current members include:

Forest City Enterprises, Hines, InterContinental Hotels Group, Opus, Regency Centers, Ryan Companies US Inc., Simon, Tishman Speyer, Westfield, Liberty Property Trust, PNC, and Dacra Development.

What are members' responsibilities?

CREEA members are asked to:

- Participate in two CREEA meetings per year to establish objectives and direction, as well as one subcommittee call per month.
- Help establish commercial real estate building performance benchmarks by gathering and sharing energy, equipment, and building data.²
- Share best energy efficiency practices in building design, operation, and maintenance.
- Offer input on future equipment purchases for new construction and retrofits, giving manufacturers incentive to develop higher-efficiency equipment based on potential market scale.
- Participate in scheduled equipment tests to determine real-world performance.
- Explore recommended variations to system designs based on geographical locations.

Why is the Federal Government involved?

Because net-zero energy buildings will mean:

¹ <http://www1.eere.energy.gov/buildings/retailer/index.html> , accessed March 18, 2009.

² No proprietary information will be shared without permission.

- Dramatic reductions in the nation’s carbon footprint, in ways that support a healthy economy.
- Lower operating expenses for building owners and tenants, leading to more competitive U.S. businesses.
- More sustainable communities, less strain on power grids, and a delayed need for new power generation infrastructure.
- Plentiful domestic energy from a clean new source: buildings that generate power back to the grid.

What is DOE’s role in CREEA?

To meet the charge of EISA 2007 to advance high-performance commercial buildings, DOE is sponsoring CREEA and other sector-organized commercial building energy alliances to help DOE shape research, development, and deployment of technologies and strategies needed to propel a quantum leap in the energy performance of commercial buildings. DOE facilitates the work of the CREEA Steering Committee and provides technical support to help meet the alliance’s goals.

DOE offers CREEA members access to advanced technologies and analytical tools emerging from DOE and the national laboratories. Through its National Laboratory Collaborative on Building Technologies, DOE is able to coordinate application of the labs’ strengths to serve the goals and priorities of CREEA members and other partners. DOE also makes available to CREEA the results of cost-shared RD&D conducted with its Commercial Building National Accounts—23 companies and organizations selected from the same target markets as the energy alliances.

ADDITIONAL BACKGROUND INFORMATION

What is the Commercial Building Initiative?

- The scale and scope of energy consumption and greenhouse gas emissions in the building sector demand a correspondingly large response.
- EISA 2007 directed DOE to collaborate with the private sector, national laboratories, other federal agencies, and non-governmental organizations to advance high-performance commercial green buildings.
- DOE launched the Net-Zero Energy Commercial Building Initiative (CBI) to meet the charge of EISA 2007. The Building Technologies Program, within DOE’s Office of Energy Efficiency and Renewable Energy, is responsible for CBI.
- CBI is the umbrella initiative that will guide and coordinate public and private partners in developing marketable, net-zero energy commercial buildings. It will address all barriers—technological, policy, and market—to the introduction of net-zero energy buildings.
- CBI’s goal is to develop technologies and practices that will allow construction and operation of **net-zero energy commercial buildings in all climate zones by**

- 2025³**—buildings that generate as much energy as they consume through cutting-edge efficiency and renewable energy sources such as solar, wind, and geothermal energy.
- To achieve CBI’s goal, DOE sponsors a system of interrelated partnerships and industry-led alliances organized by sector. These **Commercial Building Energy Alliances (CBEA)** are the vehicles for evaluating, testing, and ultimately implementing replicable approaches to achieving energy-efficient commercial buildings of varying types in different climate zones. The Retailer Energy Alliance was launched in February 2008. CREEA and the Hospital Energy Alliance launch in April 2009. Alliances are also planned for the institutional and commercial building industry sectors.

Why focus on energy efficiency?

Energy efficiency:

- Saves money and yields substantial returns on investment.
- Mitigates risks of future energy price increases.
- Reduces operating costs, which is an attractive benefit for tenants.
- Is an expeditious, cost-effective strategy for cutting carbon emissions.
- Slows energy demand growth, delaying the need for new power plants.

What is the difference between energy efficiency and energy conservation?

Conservation is doing less with less (like tolerating a slightly cooler house in the winter or a slightly warmer house in the summer). Efficiency is doing more with less (like getting the same light output from a more efficient light bulb).

Why focus on commercial buildings?

- The U.S has approximately 5 million commercial buildings, comprising more than 75 billion square feet of floor space.
- The value of new commercial construction in 2006 was over \$300 billion and \$190 billion was spent on building renovations and repairs.⁴
- Today, the commercial sector consumes an estimated about 18 quadrillion Btu of energy (quads) and associated emissions of carbon dioxide are an estimated 1.05 billion metric tons.⁵
- The Energy Information Administration projects that the commercial sector will add another 0.22 billion tons through 2030, under “Business as Usual” projections – more than any other sector in the United States.⁶

³ <http://www1.eere.energy.gov/buildings/alliances.html>. Accessed September 8, 2008.

⁴ Buildings Energy Data Book 2008, Tables 3.51 and 3.5.2.
<http://buildingsdatabook.eren.doe.gov/ChapterView.aspx?chap=3#5>

⁵ Buildings Energy Data Book 2008, Tables 3.1.1, and 3.4.1 <http://buildingsdatabook.eren.doe.gov/>

⁶ Energy Information Administration, DOE, Annual Energy Outlook 2009, Appendix Table A.18,
http://www.eia.doe.gov/oiaf/aeo/aeoref_tab.html

- In 2004, total commercial energy consumption was 57 percent higher than in 1985.⁷
- Studies have shown that existing commercial buildings can save 15 percent of energy use through commissioning, with a payback of less than one year. Commissioning corrects design flaws, construction defects, and malfunctioning equipment, and addresses deferred maintenance. If the overall commercial buildings sector experienced this level of savings, that would translate into almost 3.0 quads of energy annually.⁸ DOE's Commercial Buildings Initiative seeks to define best practices that will double this level of energy savings in existing buildings to 30 percent or 5.5 quads. The initiative's goal for new buildings is to reduce energy use by 50 percent versus code, cutting projected annual energy consumption for these buildings from approximately 5.0 to 2.5 quads.

What is a net-zero energy building?

Net-zero energy buildings are grid-integrated buildings capable of generating as much energy as they consume, on an annual basis, through advanced efficiency technologies and on-site generation systems such as solar and wind.

The legal definition from Sec. 422 of EISA 2007 is:

The term "net-zero energy commercial building" means a high-performance commercial building that is designed, constructed, and operated—

- (a) To require a greatly reduced quantity of energy to operate;
- (b) To meet the balance of energy needs from energy sources that do not produce greenhouse gases;
- (c) In a manner that will result in no net emissions of greenhouse gases; and
- (d) To be economically viable.

What does a net-zero energy building cost today?

Today, the first cost of true net-zero energy buildings can be expensive—as much as 20 to 30 percent more than conventional buildings, not counting utility savings. The life-cycle cost of these buildings can approach cost-competitive (depending on utility rates). One goal of DOE's Commercial Building Initiative, which includes CREEA, is to decrease life-cycle costs to zero or below zero in all climate zones, and to reduce the upfront investment cost to a three- to five-year payback period.

What is the National Laboratory Collaborative on Building Technologies (NLCBT)?

This group of five national laboratories is working with DOE to research and accelerate the use of clean, efficient building technologies critical to the CBI goal. The collaborative enables DOE to coordinate application of its national laboratories' strengths to serve the

7 Buildings Energy Data Book 2008, Table 3.1.1 <http://buildingsdatabook.eren.doe.gov/>

8 The Cost-Effectiveness of Commercial Buildings Commissioning, November 2004, Lawrence Berkeley National Laboratory, Portland Energy Conservation, and Texas A&M University

goals and priorities of DOE and its partners, including the CBEAs. NLCBT laboratories include: Argonne National Laboratory, Lawrence Berkeley National Laboratory, National Renewable Energy Laboratory, Oak Ridge National Laboratory, and Pacific Northwest National Laboratory.

What are Commercial Building National Accounts?

DOE has selected 23 companies and organizations that will conduct cost-shared RD&D and construct buildings that achieve savings of 50 percent above ASHRAE/IES Standard 90.1-2004 and retrofit buildings for 30 percent savings. The National Accounts companies and organizations were selected from the same target markets as the CBEAs and will share all results with CBEA members to speed market adoption of energy-saving technologies and building solutions.