



Connecticut Chapter



March 15, 2011

**4025 Pleasantdale Road, Suite 420
Atlanta, GA 30340**

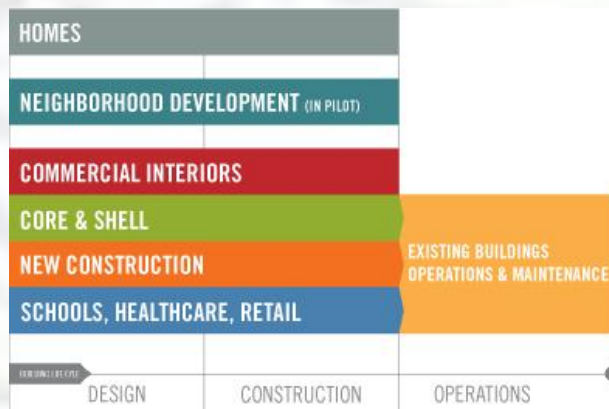
website: www.aeecenter.org

National Credentials

- Association of Energy Engineers
- Building Performance Institute (BPI)



- US Green Building Council



- Interstate Renewable Energy Council

North American Board of Certified Energy Practitioners





Who Is AEE?

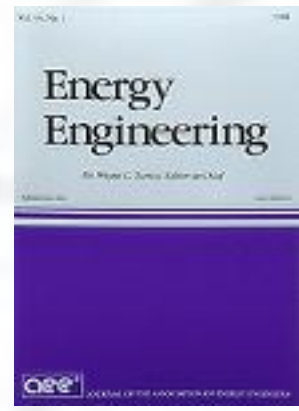
The Association of Energy Engineers (AEE), a nonprofit organization of **9,000 members** in 77 countries, is your source for information on the dynamic field of energy efficiency, utility deregulation, facility management, plant engineering, and environmental compliance. With a full array of information outreach programs **from technical seminars, conferences, books, job listings, and certification programs**, AEE offers a variety of information resource tools.

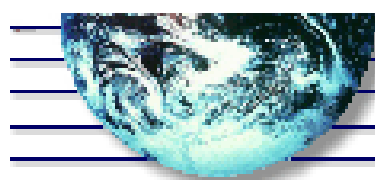
The overall strength of AEE is highlighted by a strong membership base **and recognized certification programs**. The Association's network of 60 local chapters meet to discuss regional issues. AEE's roster of corporate members is a veritable "Who's Who" from the commercial, industrial, institutional, governmental, energy services, and utility sectors.



Individual Membership

By joining AEE, you will have access to a variety of programs which includes discounts on training programs, subscriptions to leading-edge technical publications, including; *Energy Engineering Journal*, *Strategic Planning for Energy and the Environment*, *Cogeneration & Distributed Generation*, *AEE Energy Insight*), discounts on professional services, as well as industry networking opportunities.





Chapters

In addition to being an AEE member and receiving exclusive member benefits, you may also wish to join a local chapter near you. Activities and local chapter dues vary by chapters. The Association's network of 60 local chapters meet to discuss regional issues.

AEE has chapters in the following U.S. states:

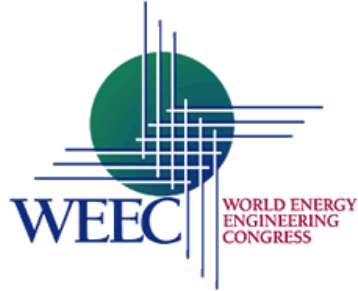
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|---------------------------|---------------|----------------|-----------------------------|
| Arizona | Illinois | New Jersey | Pennsylvania |
| California | Kansas | New Mexico | Tennessee |
| Colorado | Massachusetts | New York | Texas |
| <u>Connecticut</u> | Maryland | North Carolina | Utah |
| Florida | Michigan | Ohio | Washington |
| Georgia | Minnesota | Oklahoma | Wisconsin |
| | | | <i>and Washington, D.C.</i> |

And in these countries:

- | | | | |
|----------|-----------|---------|-----------------|
| Armenia | Egypt | India | Romania |
| Bulgaria | Georgia | Ireland | Southern Africa |
| Canada | Hong Kong | Mexico | Ukraine |
| Cyprus | Hungary | Poland | |



Conferences/Expos



World Energy Engineering Congress (WEEC)

October 12-14, 2011 / Navy Pier

Chicago, IL



GLOBALCON

March 30-31 2011 / Pennsylvania

Convention Center

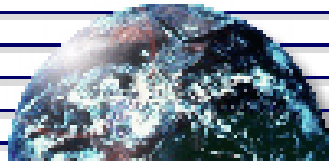
Philadelphia, PA



West Coast Energy Management Congress (WCEMC)

June 15-16, 2011 / Long Beach Convention Center Long

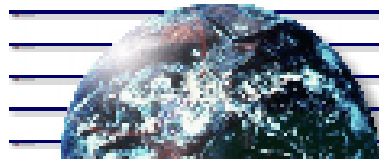
Beach, CA



Seminars

With all AEE seminars, you'll earn ***Continuing Education Units (CEU)*** and *Professional Development Hours (PDH)* credit which can be applied toward training requirements for P.E. license renewal in most states, as well as toward maintaining all AEE professional certifications. We are pleased to offer you the following ways to gain the professional training you need:

- Live Seminars
 - In-House Seminars
 - Realtime Online Seminars
 - “24/7” Online University
 - Self-Paced Seminars
-
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Seminars

Live Seminars: AEE holds a variety of professional seminars and certification training courses across the U.S. throughout the calendar year.

In-House Seminars: Most of AEE's seminars can also be presented by local chapters that identify a need.

Real-time Seminars: AEE offers real-time interactive online seminars on a variety of subjects. This format allows you to participate from your office, home, or anywhere you have access to the internet and a phone.



CERTIFICATIONS

- Certifications are a part of total quality management.
 - When an individual becomes certified in a designated field, professional achievement is recognized in the eyes of colleagues, government agencies, present and prospective employers, and clients.
 - A standard of professional competence is established and is recognized throughout the industry.
 - Certifications develop individuals capabilities through encouragement of long-term career goals.
 - Through continuing education, certifications assure a high level of competence in constantly changing fields.
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THE CERTIFICATION PROCESS

Along with completing an **application** you must also include the following:

- **Experience** in the field. Each program specifies the minimum experience levels required.
 - Employee or client **verification**
 - Documented **education**
 - Professional **registration**
 - Professional **references** to verify experience and qualifications
 - All individuals must also pass a **written examination.**
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CEM - Certified Energy Manager

- AEE's first and most widely recognized certification.
 - Used by many corporation and government agencies as a prerequisite for job positions related to energy management.
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Specific Requirements



| EDUCATION | JOB EXPERIENCE |
|---|---|
| <p>4-year degree in engineering or architecture;</p> <p style="text-align: center;">OR</p> <p>Professional Engineer (P.E.) or Registered Architect (R.A.)</p> | <p style="text-align: center;">AND</p> <p>3+ years of experience in energy engineering or energy management</p> |
| <p>4-year degree in environmental science, physics or earth science</p> | <p style="text-align: center;">AND</p> <p>4+ years of experience in energy engineering or energy management</p> |
| <p>4-year degree in business (or related field)</p> | <p style="text-align: center;">AND</p> <p>5+ years of experience in energy engineering or energy management</p> |
| <p>2-year energy management associate's degree</p> | <p style="text-align: center;">AND</p> <p>6+ years of experience in energy engineering or energy management</p> |
| <p>2-year technical associate's degree</p> | <p style="text-align: center;">AND</p> <p>8+ years of experience in energy engineering or energy management</p> |
| <p style="text-align: center;">NONE</p> | <p>10+ years of experience in energy engineering or energy management</p> |

If you don't yet meet the education or experience eligibility requirements for the CEM, you may be interested in pursuing our [Energy Manager in Training \(EMIT™\)](#) certification.



Examination

Examination and Training Requirement

- All CEM candidates must attend one of AEE's preparatory CEM training seminars
- Pass a four-hour written open-book exam proctored by an approved exam administrator.
- **Codes & Standards & Indoor Air Quality ***
- **Energy Accounting and Economics ***
- **Energy Audits and Instrumentation ***
- Electrical Systems
- HVAC Systems
- Motors and Drives
- Industrial Systems
- Building Envelope
- CHP Systems and Renewable Energy
- Energy Procurement
- Building Automation and Control Systems
- Green Buildings, LEED & Energy Star
- Thermal Energy Storage Systems
- Lighting Systems
- Boiler and Steam Systems
- Maintenance & Commissioning
- Alternative Financing

Of the following seventeen sections of the exam, candidates **must complete at a minimum of eleven**, including those indicated as **Required** (in red):



CERTIFICATION PROGRAMS



CEA - Certified Energy Auditor

- For professionals who have demonstrated knowledge and experience in the field of energy auditing. **New!**
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Process:

- Complete an application
- Meeting specific educational and experience requirements, candidates for CEA certification
- Must successfully complete AEE's CEA preparatory training seminar
- Pass a four-hour open book exam

Topics:

- Building Envelope
 - Lighting Systems
 - Air Conditioning Systems
 - Heating Systems
 - Motors and Drives
 - Heat Pumps
 - Ventilation Systems
 - Domestic Hot Water
 - Water Conservation
 - Utility Analysis
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Education and Work Experience

- **A four-year degree from an accredited university or college in engineering or architecture, or be a registered Professional Engineer (P.E.) or Registered Architect (R.A.) and *at least three years of verifiable experience* in energy auditing, energy management, facility management, or experience related to energy management; or**
 - **A four-year non-engineering degree with *at least four years of verifiable experience* in energy auditing, energy management, facility management, or experience related to energy management; or**
 - **A two-year technical degree with *at least five years of verifiable experience* in energy auditing, energy management, facility management, or experience related to energy management; or**
 - **Ten years of verifiable experience in energy auditing, energy management, facility management, or experience related to energy management; or**
 - The current status of **Certified Energy Manager (CEM®)**.
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CERTIFICATION PROGRAMS



- **CBCP - Certified Building Commissioning Professional**

Recognizes highly qualified professionals in the industry and commissioning field.



- **BEP - Certified Business Energy Professional**

Recognizes those individuals who are involved in the non-technical side of the energy management profession.

- **CMVP- Certified Measurement & Verification Professional**



Jointly developed by AEE and the International Performance Measurement & Verification Protocol (IPMVP)

Recognizes individuals in this growing area of the energy industry, as well as raises overall professionals standards within the measurement and verification field.



CERTIFICATION PROGRAMS

- **CEP- Certified Energy Procurement Professional**



Recognizes individuals who have developed specialized expertise on both the purchasing and selling sides of the energy marketplace.

This certification also requires that individuals complete a three-day training program.

- **DGCP- Distributed Generation Certified Professional**



Requires a comprehensive knowledge of the principles, practices, and laws which apply to the field distributed generation and on-site power generation.



CERTIFICATION PROGRAMS

- **Other Certification Programs:**

- BESA** – Certified Building Energy Simulation Analyst
 - CGD** – Certified Geo-Exchange Designer
 - CIAQP** – Certified Indoor Air Quality Professional
 - CLEP** – Certified Lighting Efficiency Professional
 - CPQ** – Certified Power Quality Professional
 - CRM** – Certified Carbon Reduction Manager *(New!)*
 - CSDP** – Certified Sustainable Development Professional
 - EBCP** – Certified Existing Building Commission Professional
 - GBE** – Certified Green Building Engineer
 - REA** – Certified Residential Energy Auditor
 - REP** – Certified Renewable Energy Professional
-



US GBC Credentials

- **LEED AP** is for professionals who work in the field of sustainability design and construction



LEED AP falls into the following specialty areas:

- Green Building Design and Construction (BD+C)
- Green Interior Design and Construction (ID+C)
- Green Building Operations and Maintenance (O+M)
- Green Homes
- Green Neighborhood Development (ND)



US GBC Credentials

- **LEED Green Associate** is a new credential for those who have experience on a LEED-registered project, employment in a sustainable field of work, or engagement in an education program that addresses green building principles
 - **LEED NC** is for New Construction and Major Renovations is designed to guide and distinguish high-performance commercial and institutional projects.
 - **LEED CI** is for Commercial Interiors is a benchmark for the tenant improvement market that gives the power to make sustainable choices to tenants and designers.
 - **LEED C&S** is for Core & Shell aids designers, builders, developers and new building owners in implementing sustainable design for new core and shell construction.
 - **LEED EB, O&M** is for Existing Buildings: Operations & Maintenance provides a benchmark for building owners and operators to measure operations, improvements and maintenance.
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LEED Green Associate

Application Requirements

Documentation of one of the following:

- LEED-registered project experience
- Working in the field of sustainable design or education
- Attending education program that addresses green building principles:

Sustainable Sites

Energy and Atmosphere

Indoor Environmental Quality

Water Efficiency

Materials and Resources

Innovation



Energy Star Partnership

Complete an Energy Star Partnership Agreement.

Available in the following areas:

- Builders
- Home Energy Raters
- Architect/Home Plan Designers
- Utilities and Other Sponsoring Program



Applicants must complete Energy Star Orientation Training to be eligible to build homes qualified under Version 3.

Take the training at:

<https://www.energystar.gov/index.cfm?fuseaction=mesa.showLogin>



TM

BUILDING PERFORMANCE INSTITUTE (BPI)



BPI Credentials

**Building Performance Institute, Inc.
Small Homes Certification Model
(1- 4 residential unit buildings)**

Small Homes Comprehensive Services Professional*

| | | | | |
|-------------------------------|-----------------------|-----------------------------------|-------------------------|-------------------------------|
| | | | Mechanical Professional | |
| Building Analyst Professional | Envelope Professional | Manufactured Housing Professional | Heating Professional | A/C or Heat Pump Professional |
| Evaluation Designation | Envelope Designations | | Mechanical Designations | |



BPI Credentials

**Building Performance Institute, Inc.
Multifamily Buildings Certification Model
(Typically 5+ unit buildings)**

Multifamily Comprehensive Services Professional*

**Multifamily
Building
Analyst
Professional**

**Energy Efficient
Multifamily
Building
Operations
Professional**

**Multifamily
Hydronic
Heating System
Design
Professional**

**Multifamily
Advanced Heating
Plant Technician**

Multifamily Building Designations

QEE® Steps for BPI Certification

Review:

- Polices & procedures for BPI Certification
- Primary Knowledge Areas Chart

Training is available through BPI

- BPI training is not required

Submit candidate application form to BPI

Examination:

- Written Examination
- Field Testing and Observation
- Need 70% or higher to pass

http://www.bpi.org/documents/BPI_Accreditation_Application.pdf



The SOAR Initiative

- Available through the Connecticut Community College System
 - Funded by a \$2 million USDOL Community-Based Job Training Grant
 - SOAR programs are
 - ✓ 1 year Certificate Programs.
 - ✓ College-level courses
 - ✓ For-credit towards a degree
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SOAR Certificate Programs

- **BEST (Building Efficiency & Sustainable Technologies) Certificate**

This two semester, 26-credit program focuses on residential energy efficiency, sustainable design and building, and renewable energies and helps prepare students for the BPI Building Analyst and the RESNET HERS Rater Certifications.

- **Certificate in Sustainable Energy**

Provides a broad overview of emerging theory and practical application in alternative energy systems; explores current trends in sustainable technologies and offers either an entrepreneurship or financial focus



SOAR Certificate Programs

➤ Alternative Energy Systems Technology Certificate

Offers the foundation for a broad range of careers in the renewable energy, energy efficiency, and utility sectors. Course work includes the study of fuel cell technology, alternative energy systems, welding technology alternative fuel vehicles, electronics and photovoltaics.

➤ Alternative Energy Transportation Technology Certificate

Teaches the entry-level mechanical skills needed to help operate, maintain, and repair alternative-fuel vehicle systems. Mechanical skills are taught in a laboratory in which students learn to work with tools, equipment, and materials commonly used to operate, maintain, repair, and analyze alternative energy systems.



SOAR Certificate Programs

➤ Solar Technology Certificate

Prepares students for entry-level positions at companies that manufacture, install and/or maintain solar technology systems. Students gain a basic understanding of and operational skills in photovoltaic (solar electric), solar thermal (water/air, heating/effects of wind), and passive solar equipment, including course work in electricity and electronics.

➤ Clean Water Management Certificate

Prepares students for the CT DEP Class I, II, III & IV Wastewater Treatment Plant Operator Certification Exams. Students may be new to the field, or already employed in the field and seeking higher levels of certification.



SOAR Certificate Programs

➤ Sustainable Landscape Ecology & Conservation Technician Certificate

Teaches entry-level skills needed by technicians in the sustainable landscape design, planning and conservation fields

➤ Sustainable Facilities Management Certificate

Students develop entry-level skills needed to fill technician jobs in the areas of sustainable design and planning, and sustainable facilities operations. Trains new and existing construction workers with new skill sets in sustainable environment areas, as defined by the U.S. Green Building Council and the BPI



For more information

Available through the **Connecticut Community College System**

SOAR Project Director - Shelly Jewell

rjewell@commnet.edu - 860-244-7746

Manchester CC - Aynsley Diamond

Adiamond@mcc.commnet.edu - 860-512-2720

Norwalk CC - Eric Gribin

EGribin@ncc.commnet.edu - 203-857-7345

Three Rivers CC - Tamara Shattuck

Tshattuck@trcc.commnet.edu - 860-885-2658

Naugatuck Valley CC - Krista Reichert

kreichert@nvcc.commnet.edu - 203-575-8014

Gateway CC - Carla Roehrich

croehrich@gwcc.commnet.edu - 203-285-2324

www.commnet.edu/SOAR



NABCEP Certifications

PV Technical Sales Certification

- Requires OSHA 10 Hour Card
- Examination, NABCEP PV- Entry Level
- Education, Training and Experience e.g. sales experience

PV Installer Certification

- Basic Electrical and roofing skills
- Examination

Solar Thermal Installer Certification

- Basic plumbing, electrical and roofing skills.
- Examination

Small Wind Installer Certification

- Examination

