



Training and Certification of Energy Professionals in Sub-Saharan Africa

AEE is global,
we bring it local.



ECSA CPD
6 credits

AEE CPC
7.2 credits

CEM



Certified Energy Manager (CEM®)

The Certified Energy Manager (CEM®) program recognises individuals who have demonstrated high levels of experience, competence, proficiency, and ethical fitness in the energy management profession. CEM® comprises an elite group of professionals serving industry, business and government throughout the world.

An international certification for professionals who require a detailed program of instruction that covers the technical, economic and regulatory aspects of effective energy management. The program offers a comprehensive learning and problem-solving forum for those who want a broader understanding of the latest cost reduction techniques and strategies followed by a voluntary examination which could lead to international certification with the US-based Association of Energy Engineers (AEE). The exam is not compulsory.

TRAINING PROGRAMME OUTLINE

- The need for energy management
- Conducting an energy audit, audit reports and energy audit instrumentation
- Energy codes, standards and protocols
- Energy purchasing, accounting and benchmarking
- Energy and electricity rate structures
- Electrical systems and electric energy management
- Economic analysis and life cycle costing
- Lighting basics and lighting system improvements
- Electric motors and industrial systems
- Thermal energy storage
- Boilers and thermal systems improvement
- Waste heat, co-generation, CHP systems
- Renewable energy sources
- Maintenance programs and building commissioning
- Building automation and control systems
- M&V and alternative financing
- Green buildings and LEED
- Units and conversions

COURSE OUTCOMES

On completion of the CEM® course you will be able to immediately implement solutions to enable energy efficiency. On obtaining certification with the AEE you will be one of thousands of distinguished professionals in the international energy engineering fraternity.

DELEGATE PROFILE

- Persons that need to find ways of saving energy through reduced fuel costs, electrical use, transport requirements, improved supply chain, water savings, etc.
- Persons who have been working in the energy management industry for a number of years and would like to obtain a recognised qualification within the energy engineering career path.
- For architects, built environment graduates, engineering graduates, environmental graduates the CEM® will open new doors to the fastest growing industry in the world.
- Persons that need to implement an energy management strategy at an organisation and be able to determine a baseline from where to implement a variety of energy saving activities from understanding electricity rate structures and economic analysis of alternative investments, to considering insulation, boilers, codes and standards, waste heat, motors, to name but a few.
- Persons that need recognition as a professional who stays up to date on the latest developments in the energy industry by participating in continued energy education that is internationally recognised.
- Those who are responsible for obtaining ISO50001 accreditation and implement SABS50010 standards to qualify for financial energy saving incentives.

BASIC SKILLS REQUIRED

The CEM® training course is at a level which assumes the delegate has basic problem-solving skills, including quick and accurate use of a scientific hand calculator, the ability to use basic algebra and to set up problem solution expressions and calculations from a written problem statement.

EXAMINATION

The examination and certification process is optional and you may take the course without it as well. The examination is typically held on the morning of day 6, or any other AEE examination day. Examination questions are based on concepts and experiences contained within this program material. The exam, which must be completed within 4-hours, is open book, with a mixture of multiple choice and true/false questions.

This is a voluntary exam and delegates must book for the examination and submit a certification application form before taking the exam and the course. The examination may only be taken after completion of the prescribed AEE CEM® training at a licensed AEE training provider.

Note that exam results will only be issued once candidate is in full standing with EnTF.

ELIGIBILITY FOR CERTIFICATION

The prerequisites to qualify for the certification process have been designed to take into account the possible diversity of education and practical experience an individual may have. However, each CEM® candidate must attend the full CEM® training program, pass the written CEM® 4-hour open book examination with 70%, and meet one of the following criteria:

Education and Experience

- 4-year engineering/architectural degree OR Professional Engineer (PE) OR Registered Architect (RA) AND 3+ years related* experience
- 4-year degree in technology, environmental science, physics, or earth science AND 4+ years related* experience
- 4-year degree in business (or related field), BTech AND 5+ years related* experience
- 2-year energy management associate degree; Diploma AND 6+ years related* experience
- 2-year associate degree AND 8+ years related* experience
- No qualification AND 10+ years related* experience
- Re-certification is required every 3 years subject to participation in the AEE continuing education program (CEP).

**Related experience in energy engineering or energy management.*

***Please Note: Verification of employment must be submitted.*

If you do not meet one of the eligibility criteria above, you can still apply for the Energy Manager In-Training certification, EMIT. In order to gain the in-training certification, you must attend a CEM preparatory training seminar or obtain a degree from an approved training provider, submit the EMIT certification application, and pass the CEM certification examination. The EMIT certification is valid for six years, which allows you time to meet the full CEM certification eligibility requirements.

STEPS TO CERTIFICATION

1. Register to attend the AEE training course with a licensed training

* Terms and conditions

1. First paid first served policy applies for booking security
2. Booking security requires one of the following to be received six (6) working days prior to the commencement of the course:
 - a. Full payment cleared in bank with proof of payment supplied.
 - b. A deposit of 25% with proof of payment supplied.
 - c. A purchase order for the full amount of the invoice.
3. Fees include coffee/tea/juice on arrival, mid-morning coffee/tea with pastries, mid-afternoon coffee/tea with biscuits, and lunch. For training the fee includes the black and white text books, course fee and one year membership of the SAEEC. For examinations the fee includes the examination fee, marking fee, certification application fee, and 1 year membership of AEE for first certifications.
4. It is the responsibility of the candidate attending the course to arrange their own travel, accommodation, breakfast and dinner.
5. Policy on international candidates
 - a. Invoices exclude withholding and country-specific taxes. Should these be leveraged by your country government, we reserve the right to invoice the responsible entity/person to recoup the costs.
 - b. VAT is payable for candidates attending training in South African borders, this may be claimed on departure from South Africa using the tax invoice.
6. Policy on cancellations

provider of the AEE.

2. Register to sit the AEE examination for your certification, complete the certification application and return it to the Certification Coordinator at the EnTF.
3. Attend 85% or more in-class training.
4. Pass the examination with 70% or more.
5. Your examination mark and certification application will be reviewed by the AEE African Certification Board for your applied certification.
6. Your application with African Board recommendations will be submitted to AEE's International Certification Board for approval.
7. Should you receive feedback that you may only receive 'in-training' status, you may upgrade to full certification status once you have achieved sufficient levels of experience, and as long as this is within 6 years.
8. You will receive notification for renewal on a 3 yearly basis.

RECOGNITION

Engineering Council of South Africa (ECSA)

5 Continuing Professional Development (CPD) credits for ECSA registration for attending the training course.

1 additional CPD credit for ECSA registration for passing the international AEE examination.

Association of Energy Engineers (AEE)

7.2 credits for Continuing Professional Competency (CPC) demonstration to re-certify on another AEE certification program.

International certification with the AEE

International AEE certification will be listed in the AEE Professionals Directory on-line, once approved by AEE.

Attendance certificate

Attendance certificate will be issued to all delegates that attend the full duration of the training course. (85% or higher attendance required.)

COSTS*

Course only fee:

R16 700.00 (excl VAT)

Examination and Certification application fee:

R3 200.00 (excl VAT)

Examination rewrite fee: R2 700.00 (excl VAT)

Optional full colour manual: R2 600.00 (excl VAT)

Optional pre-course reading material on aeecenter.org or enquire from training@entf.co.za for any special offers available.

Course fee includes: 5 day training course, attendance certificate, black and white manual, one year SAEEC membership, lunch, teas and coffees.

Examination and Certification application fee includes: Four hour examination sitting, tea/coffee and snack, marking and proctoring fee, peer reviewed certification application, AEE certificate, certification ceremony in SA, one year AEE membership for first certification.

BOOKINGS

Book online at www.energytrainingfoundation.co.za for your training and examination. You will receive confirmation from the Training Administrator with all the necessary arrangements and information.

- a. Cancellations received within five (5) working days prior to the first day of training will carry a 25% cancellation fee. No course material will be supplied. For examinations a rescheduling fee of R650.00 will be leveraged.
- b. Cancellations received six (6) working days prior to the first day of training will receive a full refund.
7. Policy on accounts not in good standing
 - a. The candidate in attendance at the course ultimately remains responsible for payment of the outstanding account and providing the proof of payment thereof.
 - b. In the event that a candidate, or the candidate's organisation is not in good standing with us we reserve the right to withhold:
 - Certificates of Attendance
- Course Attendance Registers
- Issuing of ECSA CPD credits
- Examination Results
- AEE Certification Application and/or Renewal Submissions
- AEE Certification Certificates
- Listing on the AEE website
8. The Energy Training Foundation (EnTF) is a division of Energy Cybernetics (Pty) Ltd, an EOH company, and the invoice will be made out by Energy Cybernetics.
9. Proforma invoices will be supplied, Tax Invoices will be raised on request but these are payable within 30 days of issue.
10. Right of Admission Reserved.

About the Energy Training Foundation

The EnTF offers tailor-made training courses to fulfil the energy training needs of the industrial, commercial, mining, government, utility, building sector of Africa. EnTF is the sole approved training partner of the AEE for the Southern African region and Indian Ocean Islands, the training partner of the SAEEC and the AEPEA, is an EWSETA accredited training provider, with course accreditation for CPD registration requirements with ECSA.

Programs offered by EnTF include customised training programs, mentorship and stipend management programs, locally developed training and internationally accredited certification programs. The most popular: Certified Energy Manager (CEM), Certified Energy Auditor (CEA), Certified Measurement and Verification Professional (CMVP), Certified Water Efficiency Professional (CWEP), Certified Renewable Energy Professional (REP), Certified Business Energy Professional (BEP), Certified Carbon Reduction Manager (CRM), Fundamentals of Energy Management (FEMT), Basic Principles of Energy (BPO), Measurement and Verification Standard Training (MVST), Nelson Mandela University PV Technologies short learning program (PVTECH).

Energy Training Foundation is a division of Energy Cybernetics (Pty) Ltd, an EOH company.

For more information: • info@entf.co.za • 084 622 4770/084 011 5500 • www.entf.co.za