

Certified Energy Manager

Awarded by the Association of Energy Engineers

Since its inception in 1981, the Certified Energy Manager (CEM®) credential has become widely accepted and used as a measure of professional accomplishment within the energy management field. Simply put, the designation CEM, which stands for Certified Energy Manager, recognises individuals who have demonstrated high levels of experience, competence, proficiency and ethical fitness in the energy management profession. Certification as a CEM approves individuals to act as Lead Assessors for the purposes of ESOS in the UK.

2 sessions of 3 days duration including examination on the last day.

What's covered?



This course is presented in a lecture and discussion style format and includes the following areas:

- Need for Energy management
- Conducting an energy audit
- Energy audit instrumentation
- Energy accounting & benchmarking
- HVAC systems and improvements
- Boilers & Thermal systems
- Motors & drive applications and compressed air systems
- Maintenance
- Commissioning
- Economical analysis and life cycle costing
- Alternative Energy
- Energy Efficient Buildings
- Energy Codes & Standards
- Energy Purchasing

- Energy rate structures
- Thermal energy storage
- Electrical systems
- Energy management systems and effective planning
- Industrial systems, co-operation and CHP
- Building Automation systems
- Lighting Systems and system improvements

Who should participate?



Engineering Managers, Energy Managers, Design Engineers, Facility Managers, Energy Team Leaders, Commissioning Personnel, Energy Team members, Energy Consultants and Senior Technicians. Members of Engineers Ireland who attend this course may claim for CPD hours from Engineers Ireland.

What will I learn?



Participants achieve the following learning outcomes from the programme:

- Assess the energy consumption of an organisation and identify the areas of significant energy use.
- Understand the principles behind energy purchasing and tariff mechanisms and to analyse energy bills within an organisation.
- Understand the common terminology and units used in energy engineering
- Properly understand the issues related to operation and maintenance of key electrical and mechanical plant and properly understand the principles of operation of this equipment.

- Identify the relevant instruments and tools required to carry out an energy audit within an organisation
- Plan an energy audit of an organisation to ensure the areas of significant energy use are addressed and ordered to identify end use in advance of supply.
- Apply the principles of benchmarking the organisation against other similar organisations and utilise key metrics to assess energy performance in area of significant energy use.
- Identify the key requirements for a monitoring, targeting and reporting system within an organisation.
- Identify the key opportunities for energy improvements related to the areas of significant energy use within an organisation using sound audit principles.
- Assess the potential energy savings related to the energy savings identified in terms of energy and monetary values.
- Apply sound financial principles to energy management projects including life cycle costing and savings to investment analysis to allow rational prioritisation of energy projects towards implementation.
- Apply the appropriate approach towards the verification of savings from energy savings projects including the international performance measurement & verification protocol (IPMVP).
- Identify the key issues related to energy in a range of related activities such as building management and control systems, commissioning and maintenance and how to ensure that energy management becomes integrated into the activities
- Engage and interact in a structured energy management environment with a full understanding of the ISO 50001 energy management standard approach.
- Undertake the role as an ESOS Lead Assessor under UK ESOS Legislation

Who is the tutor?

Ian Boylan

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Ian was initially a time served electrician who then completed a raft of qualifications including electrical and electronic technician's examinations and graduated from UCC with a degree in Electrical & Electronic Engineering in 1996 before completing a Masters Degree in Sustainable Energy. He is a former Senior Electrical Engineer with the Irish Naval Service and worked as Energy Services Manager for an Irish Energy Management Consultancy. He is a Chartered Engineer and a member of the Institute of Engineers of Ireland, founder president of the Association of Energy Engineers (Irish Chapter) and an approved AEE CEM Trainer

What are the entry requirements?



A delegate wishing to achieve CEM certification must have:

- Four years engineering degree coupled with three years energy related experience **or**
- Four years business related degree coupled with five years energy related experience **or**
- Two years technical degree (Level 6 on the National Framework Qualification) coupled with eight years energy related experience

(Engineering related Certificate qualification or time served electrician/fitter) **or**

- Ten or more year's documented and verifiable energy related experience - backed up with letters from employers.

It is possible for a person with the correct academic qualification but not having the relevant energy related experience, to undertake the course and the examination. On passing the exam they will be awarded the "Energy Manager in Training" certification. Once the relevant experience has been acquired, the person will receive the CEM certification without having to retake the examination. Individuals competencies will be assessed in line with the BSI published PAS 51215 to ensure that they have the relevant experience to meet the requirements.

How will I be assessed?



Course learning will be assessed in a comprehensive open book examination