



CERTIFICATION CRITERIA FOR THE

**ENERGY MANAGEMENT SYSTEMS (ENMS)
FOUNDATION
TRAINING COURSE**

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INTRODUCTION

- 1.1 We, the International Register of Certificated Auditors (IRCA), have prepared these criteria to help you, the approved training organization, to achieve certification of an **Energy Management Systems (EnMS) Foundation** training course.
- 1.2 Before designing an EnMS Foundation training course to meet the requirements of this document you should consider the following:
- 1.2.1 **Aim of this course.** This course provides students (who have prior knowledge of or experience in energy management – see 1.2.3) with an understanding of the management systems approach and the requirements of ISO 50001, and to provide a basis for students who wish to go on to complete other IRCA certified EnMS auditor training courses.
- 1.2.2 **Auditor certification.** Students who successfully complete this EnMS Foundation course will satisfy the part of the training requirement for initial certification as an IRCA Internal Auditor: to meet the full training requirement students must also successfully complete an IRCA EnMS Internal Auditor training course.
- 1.2.3 **Prior knowledge.** Before starting this course, you must inform students that they are advised to have the following prior knowledge before attending this course:
- Management systems**
- Plan-Do-Check-Act framework
 - The core elements of a management system and the interrelationship between management responsibility, policy, planning, implementation, measurement, review and continual improvement
- Energy management**
- the principles of fuel combustion, heat transfer and energy flow
 - the relevant sources of energy regulation, guidelines and standards
 - the typical methods and technologies for increasing efficiency
 - energy measurement units, sources, costs, tariffs and scheduling
 - energy use data analysis methods
 - energy performance indicators, monitoring and performance measurement
 - the impact of organisational processes and equipment on energy efficiency
 - electricity use: motors, drives, lighting, computers
- 1.2.4 **Flexibility in course design.** These criteria specify the requirements for training courses including the knowledge and skills to be covered during the course. Your training course must be designed and delivered in accordance with these criteria, although you may exercise flexibility in the inclusion of additional material, and in the structure and selection of specific training methods used during the course. Many of the certification requirements common to the management and control of courses are detailed in IRCA/2000, *Requirements for Training Organization approval*. These requirements are in addition to the requirements of this document and are mandatory. It is essential, therefore, that you are familiar with the requirements of IRCA/2000.
- 1.2.5 **Training methods.** This course may be designed to be presented in a variety of ways:
- a) Classroom-based
 - b) Classroom-based as a series of part-time modules over a longer period.
 - c) Blended as a combination of self-study (i.e. e-learning course, correspondence course etc) and classroom-based learning.
 - d) Self study
- However it is designed, students must complete the whole course of study with your organization.

2. LEARNING OBJECTIVES

- 2.1 Learning objectives describe in outline what successful students will know and be able to do by the end of the course:
- 2.1.1 Explain the purpose and benefits of an energy management system (see 3.1).
 - 2.1.2 Explain the specific energy management related requirements of ISO 50001 (see 3.2).

3. ENABLING OBJECTIVES

In order for students to achieve the overall learning objectives, they will need to acquire and develop specific knowledge. These are specified below as “enabling objectives” and can be considered as steps to the achievement of learning objectives above.

- 3.1 **Explain the purpose and benefits of an energy management system**
- 3.1.1 Explain the purpose of an energy management system and the business and environmental benefits of improving energy performance.
 - 3.1.2 Explain the core elements in context of ISO 50001 interrelationship between Management Responsibility, Energy Policy, Energy Planning, Implementation of Policy, Checking Performance, Management Review and Continual Improvement.
 - 3.1.3 Summarise relevant energy legislation and sources of legislation.
 - 3.1.4 Explain the terminology defined in the standard.
 - 3.1.5 Explain the difference between legal compliance and conformance with the standard.
- 3.2 **Explain the specific energy management related requirements of ISO 50001.**
- 3.2.1 Describe what an **Energy Policy** should contain.
 - 3.2.2 Describe the purpose and key features of an **Energy Review** including:
 - o The current energy sources; past and present energy use and consumption; estimate of future energy use and consumption;
 - o The identification of all significant energy use and consumption, including methods to identify and address variables and to identify current performance.
 - o Methods for both the identification and prioritisation of performance improvement opportunities.
 - o Methods for addressing currency of Energy Review in response to organisational change.
 - o Identification of personnel who significantly impact on energy use.
 - 3.2.3 Describe the purpose and methodology for developing an **Energy Baseline**.
 - 3.2.4 Describe typical **Energy Performance Indicators** for monitoring and measuring energy performance.
 - 3.2.5 Describe how **Objectives and Targets** should link to Energy Policy; Legal and Other Requirements; the priorities established in the Energy Review.
 - 3.2.6 Describe typical **Operational Controls** that can be applied to operations associated with significant energy uses and how these relate to energy performance.
 - 3.2.7 Describe typical arrangements for **monitoring and measuring** significant energy use performance against policy and objectives, including the use of internal audit.
 - 3.2.8 Explain the important of planning for energy performance in the **Procurement** of energy services, products equipment and energy, and in the **Design** of new, modified and renovated facilities, equipment, systems and processes.

4. TRAINING METHODS

- 4.1 Your course may be presented as a wholly classroom-based course; as a blended course (in other words part self-study and part classroom-based); as a series of separate modules, either as full-time or part-time study; or as self-study.
- 4.2 **Classroom-based training**
- 4.2.1 You must provide for students **an environment conducive to effective learning**. At the beginning of the course you must provide the students with a description of the learning objectives, course structure, format and programme, student responsibilities and the assessment processes and assessment criteria, and you must deal with any concerns or worries that students may have.
- 4.2.2 Your course must be based on the **learning cycle** (see guidance in Appendix 1) and include opportunities for students to:
- i. Experience new ideas and skills. (Note that tutor-led slide presentations as a sole method to help students learn new knowledge is not acceptable).
 - ii. Reflect on their learning and identify strengths and weaknesses. (Note that your course must include methods for monitoring and providing time for tutors and students to review tasks and activities and each student's achievement of the learning objectives).
 - iii. Address and improve on areas of weakness. (Note that your course must include provision for review and remedial work, and individual coaching, where necessary.)
- 4.2.3 Your course must include a **variety of learning methods** to suit the range of learning styles (see guidance in Appendix 1).
- 4.2.4 Your course must not rely on tutor presentations and tutor-led discussions to achieve **knowledge-based learning objectives**. We expect to see students learning these elements mostly through a process that requires them to complete a task or activities, often in teams, and to produce a defined output.
- 4.2.5 Timekeeping, planning and programme management are essential elements in the performance of an audit and, although we recognise that effective training is responsive to students' needs, deviations from the timetable must be managed so that all learning objectives are adequately covered and students are kept informed of significant changes to the programme.
- 4.2.6 You must submit **session plans** or tutor notes for each individual training session. Session plans must specify:
- learning objectives and duration for the session
 - nature of the activity and training method to be used
 - organizational arrangements, tutor and student briefing details
 - deliverables required from students for practical sessions
 - materials, exercises and equipment required to run the session
 - where training methods or use of exercises etc. are optional, this must be clearly indicated in session plans.

4.3 Self-study courses

4.3.1 Training methods selected should seek to involve and engage students throughout the duration of the course. Simply providing students with a set of reading materials will not be acceptable. Your self-study materials must be designed around a clearly structured learning process with:

- Theory.
- Examples (scenarios, case studies etc).
- Practice (activities, case studies, progress tests etc).
- Feedback/self-assessment on activities and tests where relevant, to ensure students can self-assess their understanding and achievement of the learning objectives and identify any areas requiring further work.

4.3.2 Self-study course materials must be clearly presented and structured for ease of use, with appropriate navigational aids. You must make the following clear to students to help them manage their learning:

- The learning objectives for the overall self-study element of the course.
- The learning objectives for each section within the course.
- How the self-study element of the course links with the classroom component.
- The structure and suggested or intended sequence of the materials.
- Instructions for the students' use of the materials, including realistic timescales.
- Examples of typical documents, reports, forms etc.
- How, when and how often students may contact tutors for help, guidance and feedback.
- Methods for students to assess their learning and to seek timely feedback and coaching from the tutor(s).

4.3.3 You must ensure that each student has timely access to a course tutor to answer questions and queries.

Note: as a guide, a response to communications from students within 24 hours would be acceptable.

5. COURSE CONTENT

5.1 At the beginning of the course presentation you must provide the students with a description of the learning objectives, course format and programme, student responsibilities and student evaluation processes and criteria.

5.2 You must ensure students secure a copy of ISO 50001 or you must provide them with a copy for self-study (if relevant) and for classroom-based elements of the course.

5.3 The course must cover all aspects defined in clause 2 learning objectives and amplified in clause 3 enabling objectives.

5.4 The course must cover the benefits of certification as an IRCA EnMS Auditor, including brief details of the IRCA EnMS auditor certification scheme, and provide students with details of how to contact IRCA and apply for certification. You must use IRCA/190 and IRCA/167 (or equivalents) for this purpose.

6. COURSE DURATION

6.1 Classroom-based learning

6.1.1 The total course must be at least 7 hours net, calculated as detailed in IRCA/2000.

6.2 Self Study learning

6.2.1 Elements of the courses that are delivered through self-study will allow students three times longer than classroom training.

6.2.2 Each student must complete self-study in no more than 90 days.

6.3 Translators

6.3.1 If the course is given through translators, the time must be increased as necessary to satisfy the learning objectives.

7. TUTORS & STUDENTS

7.1 Classroom-based learning

7.1.1 The number of students per course shall not exceed 20, or be less than 4.

7.1.2 The course shall be run with at least one designated tutor who shall satisfy the requirements for a tutor as stated in IRCA/2000. Additional resources or trainee tutors may be used for specific activities, however the designated tutor remains responsible for the entire presentation.

7.2 Self-study based learning

7.2.1 Tutors who provide educational support on self-study elements of blended learning must be competent to operate any media required.

7.3 Tutor competence - Tutors for this course must demonstrate competence in key attributes:

7.3.1 Competence in training; by satisfying the tutor or lead tutor requirements as appropriate (see IRCA/2000).

7.3.2 Competence in ISO 50001; either through IRCA certification as an EnMS auditor or through the approved training provider's own assessment.

7.3.3 Competence to deliver training **and** student assessment on your specific course.

8. VARIATIONS

8.1 Requests for variations to any of these criteria, or in respect of any special circumstances, will be considered for approval on written submission by the approved training organization to IRCA. Any such request shall be made immediately upon the reason for the variation request becoming apparent.

8.2 We will consider the following when evaluating any request for variation:

8.2.1 Reasons for the requested variation.

8.2.2 Proposed modifications to the training.

8.2.3 The impact on the learning and assessment processes and how this will be managed.

9. STUDENT ASSESSMENT & EXAMINATION

9.1 **Successful completion:** in order to satisfactorily complete the course each student must:

9.1.1 Complete/attend all elements of the course.

10. COURSE PUBLICITY & ADVERTISING

- 10.1 Course advertising and promotional literature shall not state or imply that this course satisfies more than part of the training requirements for certification as an IRCA EnMS auditor.
- 10.2 Prior to the commencement of the course, you must inform potential students that IRCA recommends all students have the prior knowledge defined in clause 1.2.3.

APPENDIX 1: NOTES FOR GUIDANCE

1. Coverage of ISO 50001

This course is designed for students who have an existing knowledge of energy issues and of the management system approach, but not of ISO 50001. This course will help these students apply their prior knowledge to understand the key energy management related requirements of ISO 50001.

2. Meeting the learning and enabling objectives

We do not expect courses to be designed in the chronological order of the learning and enabling objectives in this document. We recognise that individual sessions within a training course can cover more than one learning or enabling objective at the same time.

3. Helping students learn new knowledge & skills

We promote the use of participative learning approaches because they are more efficient, in terms of speed and depth of comprehension, and more effective, in terms of long term retention of new knowledge. Therefore, you should employ practical tasks and activities to help students to understand new concepts and ideas. You should not rely on tutor-focused lecture/presentation to transfer new ideas and concepts.

We promote a variety of training methods in your course design. Different people learn in different ways so your sessions should follow the learning cycle and your course should include a variety of different learning activities to cater for all needs as far as possible. Honey and Mumford (*Learning Style Questionnaire*, Peter Honey Publications, ISBN 1 902899 07 5) provide one model for describing different learning styles that you may find useful as a basis.

Developing session plans is a natural part of designing learning and training processes. Session plans should be simple and easy to use working documents to help your tutors manage effective learning. For organizations with only a few tutors, outline session plans are acceptable. For larger organizations with a number of branches or subcontractors, and the consequent number and turnover of tutors, we will require more comprehensive session plans. A sample session plan is provided below.

Continuous assessment should have a clear link between: session plans (for tutors), clear task/activity instructions with defined and measurable outputs (for students and tutors), activity marking schemes / model answers (for tutors), model answers (for students), individual student continuous assessment record (for recording student performance).

4. Self-Study

We recommend that you consider the following documents when developing training based on information technology solutions:

BS 7988:2002 A Code of Practice for the use of information technology for the delivery of assessments

BS 8426:2003 A code of practice for e-support in e-learning systems