

ISO 50001:2018 Test of Understanding Level 2 – Professional

Test Syllabus

The main purpose of the ISTO Test of Understanding (the “Test”) is to offer an evidence-based qualification to professionals who have demonstrated an appreciation of the intent and an accurate understanding of the requirements (and the non-requirements) of the standard, including its applicability and underlying management principles. Such knowledge and skills are crucial in providing a value-adding service related to the standard, be it implementation, advisory or auditing.

The Test of Understanding is not an auditor qualification. There are no questions directly related to auditing.

The topics set out in 1.1 to 1.3 are not intended to limit the subject matter or be all inclusive of what might be covered in the Test. Candidates will be expected to apply their knowledge to organizations with different sizes and complexity.

1.1. **Applicability (A)**

- ISO 50001 purpose
- ISO 50001 intended outcomes
- Scope and boundaries of an energy management system
- ISO 50001 Applicability (Clause 4.3)

1.2. **Concepts, principles and Terminologies (Co, T)**

Energy

- Types of energy, energy uses, energy consumption, energy efficiency
(*E.g. Emissions to air; releases to water; releases to land; use of raw materials*)
- Commonly known legal requirements relevant to a sector
(*E.g. Building codes and standards; Energy efficiency regulations; Energy audits and reporting; Energy efficiency labelling*)
- Typical measurement of energy performance.
(*E.g. Energy consumption; Coefficient of Performance (COP); Energy performance indicators (EnPI); Energy Star Rating*)

ISO 50001:2018 Clause 3 Terms and definitions

- Terms related to organization
(*E.g. top management, boundary, EnMS scope, interested party*)
- Terms related to management system
(*E.g. energy management system, policy*)
- Terms related to requirement

(E.g. requirement, corrective action, documented information, outsource)

- Terms related to performance
(E.g. energy performance, energy performance indicator, energy baseline, normalization)
- Terms related to energy
(E.g. energy consumption, energy efficiency, energy review, significant energy use)

Management Systems

- Risk-based thinking
- The hierarchy and interrelationship of documented information within the management system, as well as the associated risks
- Root cause analysis and simple analytical tools such as Pareto chart
- The application of the Plan-Do-Check-Act cycle within the management system
- Typical measurements of management system performance.
(E.g. Training hours; achievement of objectives; improvements achieved; number of nonconformities)

ISO 50001:2018 EnMS requirements structure

- Interrelationship between leadership and commitment, policy, objectives, planning, resources, operations, monitoring and measurement, analysis and evaluation and continual improvement
- Sequence of activities in the requirements of the standard

1.3. Clause reference, Requirements and Unspecified requirements (C, U, R, Ac, E)

Clause Reference (C)

- Identify the clause reference of a particular ISO 50001 requirement.
(E.g. The requirement to determine competence is given in clause 7.2a.)

Requirements versus Unspecified requirements (R, U)

- Requirements specified in the ISO 50001 standard
(E.g. Conduct management review)
- Differentiate from non-requirements
(E.g. Clause 5.1 does not require a strategic plan; Clause 6.1 does not require a formal method for risk management.)

Key requirements of the ISO 50001 EnMS standard: **Management System related**

Planning

- Context, interested parties' requirements, risks/opportunities and actions to address

- Leadership and commitment
- Energy policy, objectives and actions to achieve
- Roles, responsibilities and authorities

Performance evaluation and improvement

- Monitoring and measurement
- Monitoring and measuring equipment control
- Evaluation of compliance
- Analysis and evaluation
- Internal audit
- Management review
- Corrective action
- Improvement
- Management system non-requirements

Key requirements of the ISO 50001 EnMS standard: **Operations related**

Planning

- Energy review
- Applicable legal requirements and other requirements
- Actions to achieve objectives and energy targets
- Planning for collection of energy data

Support

- Resources
- Competence and awareness
- Communication
- Documented information creation and control, and to maintain and retain

Operation

- Operational planning & control
- Design
- Procurement
- Support and operational non-requirements

Actual documented information requirements versus Erroneous Requirements (Ac, E)

In order to provide flexibility to organizations of different sizes and background, ISO 50001 is written with minimal documentation requirements. Based on their contextual factors, organization shall determine the complexity of their documented information required to support their energy management system.

- Requirements specified in the ISO 50001 standard
(*E.g. competence documented information*)
- Differentiate from non-documentation requirements
(*E.g. management system manual; documented procedure; approved supplier list; signatures.*)

Reference sources

The reference sources and sites detailed in this section contain information that will support your learning and better position you to pass your ISTO Test.

ISO 50001:2018

Energy management systems — Requirements

ISO 50002:2014

Energy audits — Requirements with guidance for use

ISO 50004:2020

Energy management systems — Guidance for the implementation, maintenance and improvement of an energy management system

ISO 50005:2021

Energy management systems — Guidelines for a phased implementation

ISO 50006:2023

Energy management systems — Measuring energy performance using energy baselines (EnB) and energy performance indicators (EnPI) – General principles and guidance

ISO 50015:2014

Energy management systems — Measurement and verification of energy performance of organizations – General principles and guidance

ISO 50047:2016

Energy savings — Determination of energy savings in organizations

Reference sites *(free of charge)*

ISO Annex SL Appendix 2 (Blue text, 2021)	https://www.iso.org/home.isoDocumentsDownload.do?t=3DUB2BXLDJOrhAXiWjrf7rRSaysnMtxTvmhHEIP2Dma5e3OjysOzdUgY0H0YFQit&CSRFTOKEN=AZBD-906N-J6XN-QZCN-JNEV-60CV-FD0D-E7GV <i>(There are minor changes introduced in the 2021 edition which were not included in the ISO 50001:2018)</i>
ISO Annex SL (IAF News)	https://iaf.news/2021/07/02/new-2021-edition-of-annex-sl-for-management-system-standards/
ISO 50001 – Energy management systems	https://www.iso.org/publication/PUB100400.html

Other ISO References

Glossary – Guidance on selected words used in the ISO 9000 family of standards	https://www.iso.org/files/live/sites/isoorg/files/standards/docs/en/terminology-ISO9000-family.pdf
Guidance on the requirements for Documented Information of ISO 9001:2015	https://committee.iso.org/files/live/sites/tc176sc2/files/documents/ISO%209001%202015%20-%20Implementation%20guidance%20docs/ISO9001_2015_Guidance_on_Documented_Information.docx

J22.50001L2f/240126