

Document subject to ISO 50001 Requirements

4.1 General requirements

ISO 50001 Requirements		Specific Document covering the requirement
The organization shall:		
	a) establish, document, implement, maintain and improve an EnMS in accordance with the requirements of this International Standard;	EnMS Charter
	b) define and document the scope and boundaries of its EnMS;	EnMS Charter : Scope and boundary
	d) determine how it will meet the requirements of this International Standard in order to achieve continual improvement of its energy performance and of its EnMS.	EnMS Charter
		EnMS Document Management Guideline
		Energy Policy
		EnMS Energy Review Report
		EnMS Action Plan
		EnMS Monitoring & Action Guideline
		EnMS Audit Plan
		EnMS Training Plan
		EnMS Continual Improvement Guideline
		EnMS Communication Guideline
		EnMS Lean Energy Procurement Guideline
		EnMS Legal & Requirements Compliance Status Report

4.2 Management responsibility

ISO 50001 Requirements		Specific Document covering the requirement
4.2.1 Management responsibility		
Top management shall demonstrate its commitment to support the EnMS and to continually improve its effectiveness by:		
a) defining, establishing, implementing and maintaining an energy policy;		Energy Policy
b) appointing a management representative and approving the formation of an		EnMS Charter : Role and responsibility
c) providing the resources needed to establish, implement, maintain and improve the EnMS and the resulting energy performance; NOTE Resources include human resources, specialized skills, technology and financial resources.		EnMS Charter
d) identifying the scope and boundaries to be addressed by the EnMS;		EnMS Charter : Scope and boundary
e) communicating the importance of energy management to those in the		EnMS Communication Guideline
f) ensuring that energy objectives and targets are established;		EnMS Energy Review Report and EnMS Action Plan
g) ensuring that EnPIs are appropriate to the organization;		EnMS Energy Review Report : Identification of EnPI
h) including energy considerations in long-term planning, if applicable;		EnMS Charter and Action Plan
i) ensuring that results are measured and reported at determined intervals;		EnMS Action Plan
j) conducting management reviews.		Manegement review records, such as minutes of meeting

4.2 Management responsibility

ISO 50001 Requirements		Specific Document covering the requirement
4.2.2 Management representative		
Top management shall appoint a management representative(s) with appropriate skills and competence, who, irrespective of other responsibilities, has the responsibility and authority		EnMS Charter: EnMS organisation / Role and responsibility
	a) ensure the EnMS is established, implemented, maintained, and continually improved in accordance with	EnMS Charter
		EnMS Continual Improvement Guideline
	b) identify person(s), authorized by an appropriate level of management, to work with the management representative in support of energy	EnMS Charter: EnMS organisation / Role and responsibility
	c) report to top management on energy performance; (report to top management on changes in energy performance:)	EnMS Charter: Top management responsibility
		Management review records, such as minutes of meeting
	d) report to top management on the performance of the EnMS; (identify person(s), authorized by an appropriate level of management, to work with him or her in support of energy management activities:)	EnMS Action Plan
	e) ensure that the planning of energy management activities is designed to support the organization's energy policy;	EnMS Action Plan
		Energy Policy
	f) define and communicate responsibilities and authorities in order to facilitate effective energy management; and	EnMS Charter: EnMS organisation / Role and responsibility
	g) determine criteria and methods needed to ensure that both the operation and control of the energy management system are effective	EnMS Charter: Operation Control
		EnMS Action Plan
	h) promote awareness of the energy policy and objectives at all levels of the organization.	EnMS Communication Guideline

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4.3 Energy Policy

ISO 50001 Requirements		Specific Document covering the requirement
4.3 Energy Policy The energy policy shall state the organization's commitment to achieving energy performance improvement. Top management shall define the energy policy and ensure that it:		
	a) is appropriate to the nature and scale of the organization's energy use and b) includes a commitment to continual improvement in energy performance; c) includes a commitment to ensure the availability of information and of necessary resources to achieve objectives and targets; d) includes a commitment to comply with applicable legal requirements and other requirements to which the organization subscribes related to its energy use, consumption and efficiency; e) provides the framework for setting and reviewing energy objectives and targets; f) supports the purchase of energy-efficient products and services, and design for energy performance improvement;	Energy Policy
	g) is documented, communicated, and understood within the organization; and	
	h) is regularly reviewed, and updated as necessary.	EnMS Document Management Guideline EnMS Communication Guideline EnMS Charter: Energy Policy EnMS Charter: Top management responsibility on energy policy

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4.4 Energy Planning

ISO 50001 Requirements		Specific Document covering the requirement
4.4.1 General		
The organization shall conduct and document an energy planning process. Energy planning shall be consistent with the energy policy and shall lead to activities that continually improve energy performance.	EnMS Action Plan	
	EnMS Energy Review Report	
4.4.2 Legal and other requirements		
Identify applicable legal and other requirements to which organization subscribes	EnMS Legal & Requirements Compliance Status Report	
	EnMS Charter	
	EnMS Audit Guideline	
4.4.3 Energy Review		
Development of energy review	EnMS Energy Review Report	
a) Analyze energy use based on measurement and other data		
– identify current energy sources		
– evaluate past and present energy use and consumption		
– estimate future energy use and consumption		
b) Based on energy use analysis, identify the areas of significant energy use and consumption	EnMS Energy Review Report: Significant energy use items	
– identify the facilities, equipment, systems, processes and personnel working for or on behalf of the organization that significantly affect energy use and consumption;	EnMS Scoped Facility-Equipment List	
c) Identify, prioritize, and record opportunities for improving energy performance, including, where applicable, potential energy sources, use of renewables, or alternative energy sources,	EnMS Energy Review Report: Summary of ECO	
4.4.4 Energy baseline		
– The energy baseline shall be established using the information in the initial energy review	EnMS Energy Review Report: EnPI and baseline	
– a data period suitable to the organization's energy use.		
– Changes in energy performance shall be measured against the energy baseline.	EnMS Monitoring & Action Guideline	
– Adjustments to the baseline shall be made when Energy Performance Indicators (EnPIs) no longer reflect organizational energy use		

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4.4 Energy Planning

ISO 50001 Requirements	Specific Document covering the requirement
4.4.5 Energy performance indicators	
<ul style="list-style-type: none">– The organization shall identify EnPIs appropriate for monitoring and measuring energy performance.	EnMS Energy Review Report: EnPI and baseline
<ul style="list-style-type: none">– The methodology for determining and updating the EnPIs shall be recorded and regularly reviewed.	EnMS Monitoring & Action Guideline
<ul style="list-style-type: none">– EnPIs shall be reviewed and compared to the energy baseline on a regular basis.	
4.4.6 Energy objectives, energy targets and energy management action plans (1)	
<ul style="list-style-type: none">– The organization shall establish, implement and maintain documented energy objectives and targets at the relevant functions, levels, processes or facilities within the organization.	EnMS Action Plan
<ul style="list-style-type: none">– The energy objectives and targets shall be specific measurable. Time frames shall be established for achievement of the objectives and targets.	
<ul style="list-style-type: none">– The objectives and targets shall be consistent with the energy policy. Targets shall be consistent with the objectives.	Energy Policy
<ul style="list-style-type: none">– When establishing and reviewing objectives and targets, an organization shall take into account legal and other requirements, significant energy uses, and opportunities to improve energy performance as identified in the energy	EnMS Legal & Requirements Compliance Status Report
	EnMS Charter
	EnMS Energy Review Report: Significant energy use items
<ul style="list-style-type: none">– It shall also consider it's financial, operational and business conditions, technological options, and the views of interested parties.	EnMS Energy Review Report: Summary of ECO
subtotal	
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4.4 Energy Planning

ISO 50001 Requirements		Specific Document covering the requirement
4.4.6 Action plans		
(2)		
– The organization shall establish, implement, and maintain energy management action plans for achieving its objectives and targets.		EnMS Action Plan
– The energy management action plans shall include:		
a) designation of responsibility;		
b) the means and time frame by which individual targets are to be achieved;		
c) a statement of the method by which an improvement in energy performance shall be verified; and		
d) a statement of the method of verifying the results of the action plan.		
– The energy management action plans shall be documented, and updated at defined intervals.		EnMS Document Management Guideline
– Action Plan shall include:		
a) Competence, training and awareness		EnMS Training Plan
b) Communication (Two way communication)		EnMS Communication Guideline
c) Documentation		EnMS Document Management Guideline
d) Operational control		EnMS Charter: Operation control
e) design		EnMS Action Plan: Design
f) Procurement of energy services, products, equipment and energy		EnMS Lean Energy Procurement Guideline

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4.5 Implementation and operation

ISO 50001 Requirements		Specific Document covering the requirement
4.5.1 General		
The organization shall use the energy management action plans resulting from the planning process for implementation and operations	EnMS Action Plan	
	Management Review minutes or EnMS Action Progress Report	
4.5.2 Competence, training and awareness		
The organization shall ensure any person or persons working for, or on its behalf related to significant energy uses are competent on the basis of appropriate education, training, skills or experience.	EnMS Training Plan	
	EnMS Charter: Role & responsibility / Competence, training and awareness	
– Identify members subject to "Competence, training and awareness"	EnMS Training Plan	
a) Management level		
b) Energy management team		
c) Energy SEP team		
d) all member working in the boundaries		
e) all member working for the		
f) all member working on its behalf related to significant energy users		
g) etc.		
– Identify appropriate education, training, skills or experience that provide the basis of competence		
– The organization shall identify training needs associated with the control of its significant energy uses and the operation of its energy management system. It shall provide training or take other actions to meet these needs. Associated records shall be maintained.		

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4.5 Implementation and operation

ISO 50001 Requirements		Specific Document covering the requirement
	– The organization shall ensure that persons working for or on its behalf are and remain aware of:	
	a) the importance of conformity with the energy policy, procedures and with the requirements of the EnMS;	
	b) their roles, responsibilities and authorities in achieving the requirements of the EnMS;	
	c) the benefits of improved energy performance; and	
	d) the impact, actual or potential, with respect to energy consumption, of their activities and how their activities and behaviour contribute to the achievement of energy objectives and targets, and the potential consequences of departure from specified procedures.	
4.5.3 Communication (Two way communication)		
	The organization shall communicate internally with regard to its energy performance and EnMS as appropriate to the size of the organization.	EnMS Communication Guideline
	The organization shall ensure commitment, awareness and understanding of personnel, as appropriate to their level and role. This shall include a process by which any person working in or on behalf of the organization can make comments or suggest improvements to the EnMS.	EnMS Charter: Scope and boundary
	The organization shall decide whether to communicate externally about its energy management system and energy performance, and shall record its decision. If the decision is to communicate externally, the organization shall establish and implement a plan for this external communication.	EnMS Communication Guideline: External Communication

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4.5 Implementation and operation

ISO 50001 Requirements		Specific Document covering the requirement
4.5.4 Documentation		
4.5.4. Documentation requirements		
The organization shall establish, implement and maintain information, in paper or electronic form, to describe the core elements of the EnMS and their interaction. The EnMS documentation shall include: a) The scope and boundaries of the EnMS; b) the energy policy; c) energy objectives, targets, and action plans; d) the documents, including records, required by this International Standard; e) other documents determined by the organization to be necessary.	EnMS Charter: Document Management	
	EnMS Document Management Guideline	
4.5.4. Control of documents		
Documents required by ISO50001 and the EnMS shall be controlled. This includes technical documentation where appropriate.	EnMS Document Management Guideline	
The organization shall establish, implement and maintain procedures to:	EnMS Document Management Procedure	
a) approve documents for adequacy prior to issue;		
b) periodically review and update as necessary;		
c) ensure that changes and current revision status of documents are identified;		
d) ensure that relevant versions of applicable documents are available at points of use;		
e) ensure that documents remain legible and readily identifiable;		
f) ensure documents of external origin determined by the organization to be necessary for the planning and operation of the EnMS are identified and their distribution controlled; and		
g) prevent the unintended use of obsolete documents, and suitably identify those to be retained for any purpose.		

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4.5 Implementation and operation

ISO 50001 Requirements		Specific Document covering the requirement
4.5.5 Operational control		
<p>The organization shall identify and plan those operations which are associated with its significant energy uses and that are consistent with its energy policy, objectives, targets and action plans in order to ensure that they are resourced and carried out under specified conditions, by:</p> <p>a) establishing and setting criteria for the effective operation and maintenance of significant energy uses or where the absence could lead to a significant deviation from effective energy performance;</p> <p>b) operating and maintaining facilities, processes, systems and equipment, in accordance with operational criteria; and</p> <p>c) appropriate communication of the operational controls to personnel working for and personnel working on behalf of the organization.</p>		Corporate Business Objectives
		EnMS Action Plan
		Available procedural documents
		Maintenance procedural documents
		EnMS Action Plan
		EnMS Monitoring & Action Guideline
		EnMS Communication Guideline
4.5.6 Design		
<p>The organization shall consider energy performance improvement opportunities in the design of new, modified and renovated facilities, equipment, systems and processes that can have a significant impact on energy performance.</p> <p>The results of the energy performance evaluation shall be incorporated into the specification, design and procurement activities of the relevant project.</p> <p>The results of the design activity shall be recorded.</p>		EnMS Energy Review Report
		EnMS Action Plan
		EnMS Action Plan: Design of Facilities/systems/equipments
		EnMS Action Plan: Design of Manufactured product
		Relative records

Documents subject to the ISO 50001 Requirements

4.5 Implementation and operation

ISO 50001 Requirements		Specific Document covering the requirement
4.5.7	Procurement of energy services, products, equipment and energy	
	When procuring energy services, products and equipment that have or may have an impact on significant energy use, the organization shall inform suppliers that procurement is partly evaluated on the basis of energy performance.	EnMS Lean Energy Procurement Guideline
	The organization shall define the criteria for assessing energy use over the planned or expected operating lifetime of energy using products, equipment and services which are expected to have a significant effect on the organization's energy performance.	EnMS Action Plan
	NOTE The organization should include contingency and emergency situations and potential disasters relating to equipment with significant energy use and determine how the organization will react to these situations.	EnMS Lean Energy Procurement Guideline: at the time contingency
		EnMS Charter: Operation Control
	For procurement of energy supply	
	The organization shall define energy purchasing specifications as applicable for effective energy performance.	EnMS Charter: Operation Control
		Relative Procedural Documents

4.6 Checking performance

ISO 50001 Requirements		Specific Document covering the requirement
4.6.1 Monitoring, measurement and analysis		
The organization shall ensure that the key characteristics of its operations that determine energy performance are monitored, measured and analysed at planned intervals.		EnMS Monitoring & Action Guideline
Key characteristics shall include at a		
a) significant energy uses and other outputs of the energy review;		EnMS Energy Review Report
b) the relevant variables related to significant energy uses;		
c) EnPIs;		EnMS Action Plan
d) the effectiveness of the action plans in achieving objectives and targets;		
e) evaluation of actual versus expected energy consumption. An energy measurement plan, appropriate to the size and complexity of the organization and its monitoring and measurement equipment, shall be defined and implemented. NOTE Measurement can range from only utility meters for small organizations up to complete monitoring and measurement systems connected to a software application capable of consolidating data and delivering automatic analysis. It is up to the organization to determine the means and methods of measurement.		EnMS Monitoring & Action Guideline
The results from monitoring and measurement of the key characteristics shall be recorded.		EnMS Document Management Guideline
The organization shall define and periodically review its measurement needs. The organization shall ensure that the equipment used in monitoring and measuring of key characteristics provides data which is accurate and repeatable. Records of calibration shall be maintained.		EnMS Charter: Operation Control
The organization shall investigate and respond to significant deviations in energy performance.		EnMS Continual Improvement Guideline
Results of these activities shall be maintained.		EnMS Document Management Guideline

4.6 Checking performance

ISO 50001 Requirements		Specific Document covering the requirement
4.6.2	Evaluation of legal/other compliance	
	At planned intervals, the organization shall evaluate compliance with legal and other requirements to which it subscribes that are relevant to its energy uses.	EnMS Legal & Requirements Compliance Status Report
	Records of the results of the evaluations of compliance shall be maintained.	Related records
4.6.3	Internal audit of the EnMS	
	The organization shall conduct internal audits at planned intervals to ensure that the EnMS:	EnMS Audit Guideline
	– conforms to planned arrangements for energy management including the requirements of this International Standard.	EnMS Audit Plan
	– conforms with the energy objectives and targets established;	
	– is effectively implemented and maintained, and improves energy performance.	EnMS Audit Report related documents
		EnMS Audit Plan
	An audit plan and schedule shall be developed taking into consideration the status and importance of the processes and areas to be audited as well as the results of previous audits.	EnMS Audit Plan
	The selection of auditors and conduct of audits shall ensure objectivity and the impartiality of the audit process.	EnMS Audit Guideline
	Records of the audit results shall be maintained and reported to top management.	Related records

4.6 Checking performance

ISO 50001 Requirements		Specific Document covering the requirement
4.6.4	Nonconformities, correction, corrective, and preventive action	
	The organization shall address actual and potential nonconformities by making corrections, and by taking corrective action and preventive action, including the following:	EnMS Continual Improvement Guideline
	a) reviewing nonconformities or potential nonconformities;	Related improvement procedure records
	b) determining the causes of nonconformities or potential nonconformities;	
	c) evaluating the need for action to ensure that nonconformities do not occur or reoccur ;	
	d) determining and implementing the appropriate action needed;	
	e) maintaining records of corrective and preventive actions; and	
	f) reviewing the effectiveness of the corrective or preventive action taken.	
	Corrective actions and preventive actions shall be appropriate to the magnitude of the actual or potential problems and the energy performance consequences encountered.	EnMS Continual Improvement Guideline
	The organization shall ensure that any necessary changes are made to the energy management system documentation.	EnMS Document Management Guideline
4.6.5	Control of records (of conformity and achievements)	
	The organization shall establish and maintain records, as necessary, to demonstrate conformity to the requirements of its EnMS and of this International Standard, and the energy performance <u>results achieved</u> .	EnMS Document Management Guideline
	The organization shall define and implement controls for the identification, retrieval and retention of records.	
	Records shall be and shall remain legible, identifiable and traceable to the relevant activity	

4.7 Management review

ISO 50001 Requirements	Specific Document covering the requirement
4.7.1 General	
At planned intervals, top management shall review the organization's EnMS to ensure its continuing suitability, adequacy and effectiveness.	EnMS Charter: Management review/Operation Control
Records of management review shall be maintained.	
4.7.2 Inputs to management review	
Inputs to the management review shall include:	Records related to calling for Management Review session
a) follow-up actions from previous management reviews;	
b) review of the energy policy;	
c) review of energy performance and related EnPIs;	
d) results of the evaluation of compliance with legal requirements and changes in legal requirements and other requirements to which the organization subscribes;	
e) the extent to which the energy objectives and targets have been met;	
f) EnMS audit results;	
g) the status of corrective actions and preventive actions;	
h) projected energy performance for the following period; and	
i) recommendations for improvement.	
4.7.3 Output from management review	
Outputs from the management review shall include any decisions or actions related to:	Records related to Management Review minutes
a) changes in the energy performance of the organization;	
b) changes to the energy policy;	
c) changes to the EnPIs;	
d) changes to objectives, targets or other elements of the EnMS, consistent with the organization's commitment to continual improvement;	
e) changes to allocation of resources.	