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**Energy management systems—
Requirements with guidance for use**

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Foreword

This translation has been made based on the original Japanese Industrial Standard established by the Minister of Economy, Trade and Industry through deliberations at the Japanese Industrial Standards Committee in accordance with the Industrial Standardization Law.

This **JIS** document is protected by the Copyright Law.

Attention is drawn to the possibility that some parts of this Standard may conflict with a patent right, application for a patent after opening to the public, or utility model right. The relevant Minister and the Japanese Industrial Standards Committee are not responsible for identifying the patent right, application for a patent after opening to the public or utility model right.

Energy management systems— Requirements with guidance for use

Introduction

This Japanese Industrial Standard has been prepared based on the first edition of **ISO 50001** published in 2011 without modifying the technical contents.

The purpose of this Standard is to enable organizations to establish the systems and processes necessary to improve energy performance, including energy efficiency, use and consumption. Implementation of this Standard is intended to lead to reductions in greenhouse gas emissions and other related environmental impacts and energy cost through systematic management of energy. This Standard is applicable to all types and sizes of organizations, irrespective of geographical, cultural or social conditions. Successful implementation depends on commitment from all levels and functions of the organization, and especially from top management.

This Standard specifies energy management system (EnMS) requirements, upon which an organization can develop and implement an energy policy, and establish objectives, targets, and action plans which take into account legal requirements and information related to significant energy use. An EnMS enables an organization to achieve its policy commitments, take action as needed to improve its energy performance and demonstrate the conformity of the system to the requirements of this Standard. This Standard applies to the activities under the control of the organization, and application of this Standard can be tailored to fit the specific requirements of the organization, including the complexity of the system, degree of documentation, and resources.

This Standard is based on the Plan-Do-Check-Act (PDCA) continual improvement framework and incorporates energy management into everyday organizational practices, as illustrated in figure 1.

NOTE 1 In the context of energy management, the PDCA approach can be outlined as follows:

- Plan: conduct the energy review and establish the baseline, energy performance indicators (EnPIs), objectives, targets and action plans necessary to deliver results that will improve energy performance in accordance with the organization's energy policy;
- Do: implement the energy management action plans;
- Check: monitor and measure processes and the key characteristics of operations that determine energy performance against the energy policy and objectives, and report the results;
- Act: take actions to continually improve energy performance and the EnMS.

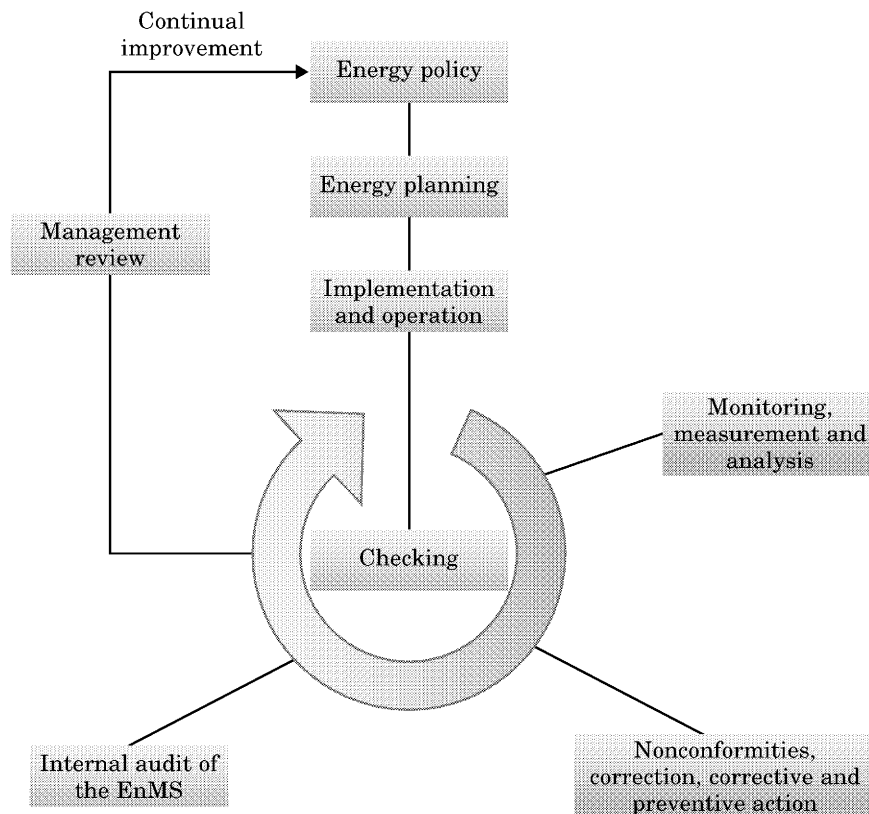


Figure 1 Energy management system model for this Standard

Worldwide application of this Standard contributes to more efficient use of available energy sources, to enhanced competitiveness and to reducing greenhouse gas emissions and other related environmental impacts. This Standard is applicable irrespective of the types of energy use.

This Standard can be used for certification, registration and self-declaration of an organization's EnMS. It does not establish absolute requirements for energy performance beyond the commitments in the energy policy of the organization and its obligation to comply with applicable legal requirements and other requirements. Thus, two organizations carrying out similar operations, but having different energy performance, can both conform to its requirements.

This Standard is based on the common elements of **ISO** management system standards, ensuring a high level of compatibility notably with **JIS Q 9001** and **JIS Q 14001**.

NOTE 2 Annex B shows the relationship between this Standard and **JIS Q 9001:2008**, **JIS Q 14001:2004** and **ISO 22000:2005**

An organization can choose to integrate this Standard with other management systems, including those related to quality, the environment and occupational health and safety.

The portions with dotted underlines are the matters not given in the corresponding International Standard.

1 Scope

This Standard specifies requirements for establishing, implementing, maintaining and improving an energy management system, whose purpose is to enable an organization to follow a systematic approach in achieving continual improvement of energy performance, including energy efficiency, energy use and consumption.

This Standard specifies requirements applicable to energy use and consumption, including measurement, documentation and reporting, design and procurement practices for equipment, systems, processes and personnel that contribute to energy performance.

This Standard applies to all variables affecting energy performance that can be monitored and influenced by the organization. This Standard does not prescribe specific performance criteria with respect to energy.

This Standard has been designed to be used independently, but it can be aligned or integrated with other management systems.

This Standard is applicable to any organization wishing to ensure that it conforms to its stated energy policy and wishing to demonstrate this to others, such conformity being confirmed either by means of self-evaluation and self-declaration of conformity, or by certification of the energy management system by an external organization.

This Standard also provides, in Annex A, informative guidance on its use.

NOTE : The International Standard corresponding to this Standard and the symbol of degree of correspondence are as follows.

ISO 50001:2011 *Energy management systems—Requirements with guidance for use* (IDT)

In addition, symbols which denote the degree of correspondence in the contents between the relevant International Standard and **JIS** are IDT (identical), MOD (modified), and NEQ (not equivalent) according to **ISO/IEC Guide 21-1**.

2 Normative references

No normative references are cited. This clause is included in order to retain clause numbering identical with other management system standards.

3 Terms and definitions

For the purposes of this Standard, the following terms and definitions apply.

3.1 boundaries

physical or site limits and/or organizational limits as defined by the organization

Example: A process; a group of processes; a site; an entire organization; multiple sites under the control of an organization.

3.2 continual improvement

recurring process which results in enhancement of energy performance and the energy management system

NOTE 1 The process of establishing objectives and finding opportunities for improvement is a continual process.

NOTE 2 Continual improvement achieves improvements in overall energy performance, consistent with the organization's energy policy.

3.3 correction

action to eliminate a detected nonconformity (3.21)

NOTE : Adapted from **JIS Q 9000:2006**, definition **3.6.6**.

3.4 corrective action

action to eliminate the cause of a detected nonconformity (3.21)

NOTE 1 There can be more than one cause for a nonconformity.

NOTE 2 Corrective action is taken to prevent recurrence whereas preventive action is taken to prevent occurrence.

NOTE 3 Adapted from **JIS Q 9000:2006**, definition **3.6.5**.

3.5 energy

electricity, fuels, steam, heat, compressed air, and other like media

NOTE 1 For the purposes of this Standard, energy refers to the various forms of energy, including renewable, which can be purchased, stored, treated, used in equipment or in a process, or recovered.

NOTE 2 Energy can be defined as the capacity of a system to produce external activity or perform work.

3.6 energy baseline

quantitative reference(s) providing a basis for comparison of energy performance

NOTE 1 An energy baseline reflects a specified period of time.

NOTE 2 An energy baseline can be normalized using variables which affect energy use and/or consumption, e.g. production level, degree days (outdoor temperature), etc.

NOTE 3 The energy baseline is also used for calculation of energy savings, as a reference before and after implementation of energy performance improvement actions.

3.7 energy consumption

quantity of energy applied

3.8 energy efficiency

ratio or other quantitative relationship between an output of performance, service, goods or energy, and an input of energy

Example: Conversion efficiency; energy required/energy used; output/input; theoretical energy used to operate/energy used to operate.

NOTE : Both input and output need to be clearly specified in quantity and quality, and be measurable.

3.9 energy management system EnMS

set of interrelated or interacting elements to establish an energy policy and energy objectives, and processes and procedures to achieve those objectives

3.10 energy management team

person(s) responsible for effective implementation of the energy management system activities and for delivering energy performance improvements

NOTE : The size and nature of the organization, and available resources, will determine the size of the team. The team may be one person, such as the management representative.

3.11 energy objective

specified outcome or achievement set to meet the organization's energy policy related to improved energy performance

3.12 energy performance

measurable results related to energy efficiency (3.8), energy use (3.18) and energy consumption (3.7)

NOTE 1 In the context of energy management systems, results can be measured against the organization's energy policy, objectives, targets and other energy performance requirements.

NOTE 2 Energy performance is one component of the performance of the energy management system.

3.13 energy performance indicator EnPI

quantitative value or measure of energy performance, as defined by the organization

NOTE : EnPIs could be expressed as a simple metric, ratio or a more complex model.

3.14 energy policy

statement by the organization of its overall intentions and direction of an organization related to its energy performance, as formally expressed by top management

NOTE : The energy policy provides a framework for action and for the setting of energy objectives and energy targets.

3.15 energy review

determination of the organization's energy performance based on data and other information, leading to identification of opportunities for improvement

3.16 energy services

activities and their results related to the provision and/or use of energy

3.17 energy target

detailed and quantifiable energy performance requirement, applicable to the organization or parts thereof, that arises from the energy objective and that needs to be set and met in order to achieve this objective

3.18 energy use

manner or kind of application of energy

Example: Ventilation; lighting; heating; cooling; transportation; processes; production lines.

3.19 interested party

person or group concerned with, or affected by, the energy performance of the organization

3.20 internal audit

systematic, independent and documented process for obtaining evidence and evaluating it objectively in order to determine the extent to which requirements are fulfilled

NOTE : See Annex A for more information.

3.21 nonconformity

non-fulfillment of a requirement

NOTE : Adapted from **JIS Q 9000:2006**, definition **3.6.2**.

3.22 organization

company, corporation, firm, enterprise, authority or institution, or part or combination thereof, whether incorporated or not, public or private, that has its own functions and administration and that has the authority to control its energy use and consumption

NOTE : An organization can be a person or a group of people.

3.23 preventive action

action to eliminate the cause of a potential nonconformity (**3.21**)

NOTE 1 There can be more than one cause for a potential nonconformity.

NOTE 2 Preventive action is taken to prevent occurrence, whereas corrective action is taken to prevent recurrence.

NOTE 3 Adapted from **JIS Q 9000:2006**, definition **3.6.4**.

3.24 procedure

specified way to carry out an activity or a process

NOTE 1 Procedures can be documented or not.

NOTE 2 When a procedure is documented, the term “written procedure” or “documented procedure” is frequently used.

NOTE 3 Adapted from **JIS Q 9000:2006**, definition **3.4.5**.

3.25 record

document stating results achieved or providing evidence of a activities performed

NOTE 1 Records can be used, for example, to document traceability and to provide evidence of verification, preventive action and corrective action.

NOTE 2 Adapted from **JIS Q 9000:2006**, definition **3.7.6**.