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Energy management systems — Guidance for implementing a common energy management system in multiple organizations

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Foreword

ISO (the International Organization for Standardization) is a worldwide federation of national standards bodies (ISO member bodies). The work of preparing International Standards is normally carried out through ISO technical committees. Each member body interested in a subject for which a technical committee has been established has the right to be represented on that committee. International organizations, governmental and non-governmental, in liaison with ISO, also take part in the work. ISO collaborates closely with the International Electrotechnical Commission (IEC) on all matters of electrotechnical standardization.

The procedures used to develop this document and those intended for its further maintenance are described in the ISO/IEC Directives, Part 1. In particular, the different approval criteria needed for the different types of ISO documents should be noted. This document was drafted in accordance with the editorial rules of the ISO/IEC Directives, Part 2 (see www.iso.org/directives).

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For an explanation of the voluntary nature of standards, the meaning of ISO specific terms and expressions related to conformity assessment, as well as information about ISO's adherence to the World Trade Organization (WTO) principles in the Technical Barriers to Trade (TBT), see www.iso.org/iso/foreword.html.

This document was prepared by Technical Committee ISO/TC 301, *Energy management and energy savings*.

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Introduction

ISO 50001 has been developed to enable a single organization to establish the systems and processes necessary to continually improve energy performance. In some situations, better energy management results are accomplished when several organizations work together to manage their energy collectively by forming an energy management group (EnMG). These situations can be driven by changes in technology and the spread of distributed energy resources.

EnMGs can include organizations which:

- operate in a geographical region, such as a city, district or a single industrial park;
- are in a single sector, such as food processing, rail transportation or universities;
- share a common customer (supply chain members), such as a supermarket chain or car manufacturer;
- are served by a common service supplier, such as a building landlord in a shopping mall;
- share one utility system (steam, electricity, etc.);
- form part of a franchise group, which may or may not have a common supplier, such as a franchised fast food chain (with common supplier), or independent retail stores that operate under a cooperative banner;
- form part of a wider economic group, with financial links or common ownership;
- are different type of facilities owned by a municipal government (city office, library, hospital, etc.);
- share a common objective or energy target (either voluntarily set or mandated);
- have agreed to improve the same energy performance indicator (EnPI);
- are members of a trade association.

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The approach within this document may also be used by a multi-site organization covered by a single or common management system.

Groups of organizations can derive energy management benefits beyond those realizable by a single organization through a joint or common approach to energy management by several organizations. In addition, opportunities can be found by focusing on the energy that flows across the boundaries of each constituent organization. This type of opportunity cannot be found in a single organization. Generally, the wider the boundary becomes, the more opportunities there are to improve energy performance and the amount of improvement.

The establishment of the EnMG can be driven by common energy needs, with the aim of facilitating synergies or sharing expertise to improve energy performance.

EXAMPLE 1 Large energy investments can be more efficient (one large boiler rather than several small).

EXAMPLE 2 Waste heat or local renewable energy supplies can be shared.

It can be helpful for the implementation of an energy management system (EnMS) for a group of organizations if at least one constituent organization has experience in energy management.

This document presents guidance on establishing a common EnMS modelled on ISO 50001 but focusing on the issues that arise when multiple organizations coordinate energy management. The presence of multiple organizations requires guidance with respect to management aspects of a common EnMS, such as:

- leadership;
- planning;

- support for common or joint actions;
- operations or execution of common or joint actions;
- knowledge transfer;
- sharing of best practice;
- performance evaluation;
- ensuring continual improvement.

One additional benefit of a common EnMS is the ability to share expertise, equipment, etc. among constituent organizations to reduce costs and promote system improvements.

EXAMPLE 3 In an isolated mining or agricultural region it can be costly to bring in expertise (e.g. pumping experts to reduce energy consumption in irrigated agriculture) or to hire specialized machinery. An EnMG is often able to share experts' fees, travel and accommodation costs.

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Energy management systems — Guidance for implementing a common energy management system in multiple organizations

1 Scope

This document gives guidelines for establishing, implementing, maintaining and improving a common energy management system (EnMS) for multiple organizations.

This document follows the general structure used in ISO 50001:2018.

2 Normative references

There are no normative references in this document.

3 Terms, definitions and abbreviated terms

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

ISO and IEC maintain terminological databases for use in standardization at the following addresses:

- ISO Online browsing platform: available at <https://www.iso.org/obp>
- IEC Electropedia: available at <http://www.electropedia.org/>
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3.1 Terms related to organization

3.1.1 organization

person or group of people that has its own functions with responsibilities, authorities and relationships to achieve its *objectives* (3.4.11)

Note 1 to entry: The concept of organization includes, but is not limited to, sole-trader, company, corporation, firm, enterprise, authority, partnership, charity or institution, or part or combination thereof, whether incorporated or not, public or private.

Note 2 to entry: This document refers to “multiple organizations”. Multiple simply means “more than one” and these organizations need not all have the same form or legal structure.

[SOURCE: ISO 50001:2018, 3.1.1, modified — Note 2 to entry has been added.]

3.1.2 constituent organization

organization (3.1.1) within the *energy management group* (3.1.7) that implements a *common energy management system* (3.2.3)

3.1.3 top management

person or group of people who directs and controls a *constituent organization* (3.1.2) at the highest level

Note 1 to entry: Top management is empowered to delegate authority and provide resources within the constituent organization.

Note 2 to entry: If the scope of the *management system* (3.2.1) covers only part of a constituent organization, then top management refers to those who direct and control that part of the constituent organization.

Note 3 to entry: In an *energy management group* (3.1.7) there is usually no single top management covering the entire group.

[SOURCE: ISO 50001:2018, 3.1.2, modified — “constituent organization” has replaced “organization”. Note 3 to entry has been replaced.]

3.1.4 boundary

physical or site limits and/or organizational limits as defined by the *energy management group (EnMG)* (3.1.7) and the *constituent organizations* (3.1.2)

Note 1 to entry: The whole or any part of a constituent organization can be included in the boundary of an EnMG.

Note 2 to entry: The boundary may correspond to a geographic area, such as a city or metropolitan region or state or nation, or the franchise area of a utility or other energy service provider.

[SOURCE: ISO 50001:2018, 3.1.3, modified — “site limits and/or” has been added before “organizational” and “as defined by the energy management group (EnMG) and the constituent organizations” has been added after “limits”. The example has been deleted. Notes 1 and 2 to entry have been added.]

3.1.5 interested party (preferred term) stakeholder (admitted term)

person or *organization* (3.1.1) that can affect, be affected by, or perceive itself to be affected by a decision or activity

[SOURCE: ISO 50001:2018, 3.1.5]

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3.1.6 energy management committee EnMC

committee to coordinate the *common energy management system* (3.2.3) on behalf of an *energy management group* (3.1.7)

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3.1.7 energy management group EnMG

two or more *organizations* (3.1.1) implementing a *common energy management system* (3.2.3)

Note 1 to entry: *Constituent organizations* (3.1.2) within an EnMG may or may not have a financial connection.

3.2 Terms related to management system

3.2.1 management system

set of interrelated or interacting elements of an *organization* (3.1.1), *constituent organization* (3.1.2) or *energy management group* (3.1.7) to establish *policies* (3.2.5) and *objectives* (3.4.11) and *processes* (3.3.6) to achieve those objectives

Note 1 to entry: A management system can address a single discipline or several disciplines.

Note 2 to entry: The system elements include the entity’s structure, roles and responsibilities, planning and operation.

Note 3 to entry: The scope of a management system can include the whole of the organization, constituent organization or energy management group, specific and identified functions or sections of each organization or constituent organization, or one or more functions across the energy management group.

[SOURCE: ISO 50001:2018, 3.2.1, modified — “constituent organization or energy management group” has been added to the definition and to Note 3 to entry. “The EnMS scope includes all energy types within its boundaries” has been deleted from Note 3 to entry.]

3.2.2**energy management system****EnMS**

management system (3.2.1) to establish an *energy policy* (3.2.6), *objectives* (3.4.11), *energy targets* (3.4.13), action plans and *process(es)* (3.3.6) to achieve the objectives and energy targets

[SOURCE: ISO 50001:2018, 3.2.2]

3.2.3**common energy management system****common EnMS**

EnMS (3.2.2) implemented by two or more *organizations* (3.1.1) that is coordinated by an *energy management committee* (3.1.6)

3.2.4**common energy management system scope****common EnMS scope**

set of activities which the *energy management group* (3.1.7) addresses through a *common EnMS* (3.2.3)

Note 1 to entry: The common EnMS scope can include several *boundaries* (3.1.4).

Note 2 to entry: The common EnMS scope can include activities outside the boundaries of individual *constituent organizations* (3.1.2) and transport operations.

3.2.5**policy**

intentions and direction of an *organization* (3.1.1), as formally expressed by its *top management* (3.1.3)

[SOURCE: ISO 50001:2018, 3.2.3]

3.2.6**energy policy**

statement by the *energy management group* (3.1.7) of its overall intention(s), direction(s) and commitment(s) related to its *energy performance* (3.4.3)

[SOURCE: ISO 50001:2018, 3.2.4, modified — “energy management group” has replaced “organization” and “as formally expressed by top management” has been deleted.]

3.3 Terms related to requirement**3.3.1****requirement**

need or expectation that is stated, generally implied or obligatory

Note 1 to entry: “Generally implied” means that it is custom or common practice for the *organization* (3.1.1), *constituent organization* (3.1.2), *energy management group* (3.1.7) and *interested parties* (3.1.5) that the need or expectation under consideration is implied.

Note 2 to entry: A specified requirement is one that is stated, for example in *documented information* (3.3.5).

[SOURCE: ISO 50001:2018, 3.3.1, modified — “constituent organization, energy management group” has been added to Note 1 to entry.]

3.3.2**conformity**

fulfilment of a *requirement* (3.3.1)

[SOURCE: ISO 50001:2018, 3.3.2]

3.3.3

nonconformity

non-fulfilment of a *requirement* (3.3.1)

[SOURCE: ISO 50001:2018, 3.3.3]

3.3.4

corrective action

action to eliminate the cause of a *nonconformity* (3.3.3) and to prevent recurrence

[SOURCE: ISO 50001:2018, 3.3.4]

3.3.5

documented information

information required to be controlled and maintained by a *constituent organization* (3.1.2) or the *energy management committee* (3.1.6) and the medium on which it is contained

Note 1 to entry: Documented information can be in any format and media, and from any source.

Note 2 to entry: Documented information can refer to:

- the *management system* (3.2.1), including related *processes* (3.3.6);
- information created in order for the *organization* (3.1.1) to operate (documentation);
- evidence of results achieved (records).

[SOURCE: ISO 50001:2018, 3.3.5, modified — “a constituent organization or the energy management committee” has replaced “an organization”.]

3.3.6

process

set of interrelated or interacting activities which transform inputs into outputs

Note 1 to entry: A process related to an *organization's* (3.1.1) activities can be:

- physical (e.g. energy-using processes, such as combustion); or
- business or service (e.g. order fulfilment).

[SOURCE: ISO 50001:2018, 3.3.6]

3.3.7

monitoring

determining the status of a system, a *process* (3.3.6) or an activity

Note 1 to entry: To determine the status, there can be a need to check, supervise or critically observe.

Note 2 to entry: In an *energy management system* (3.2.2), monitoring can be a review of energy data.

[SOURCE: ISO 50001:2018, 3.3.7]

3.3.8

audit

systematic, independent and documented *process* (3.3.6) for obtaining audit evidence and evaluating it objectively to determine the extent to which the audit criteria are fulfilled

Note 1 to entry: An audit can be an internal audit (first party) or an external audit (second party or third party), and it can be a combined audit (combining two or more disciplines).

Note 2 to entry: An internal audit is conducted by the *organization* (3.1.1) itself, or by another *constituent organization* (3.1.2) within the *energy management group* (3.1.7), or by an external party on its behalf.

Note 3 to entry: “Audit evidence” and “audit criteria” are defined in ISO 19011.