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**Energy management systems —  
Guidance for the implementation,  
maintenance and improvement of an  
ISO 50001 energy management system**

*Systèmes de management de l'énergie — Lignes directrices pour la  
mise en oeuvre, la maintenance et l'amélioration d'un système de  
management de l'énergie de l'ISO 50001*



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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](http://www.iso.org/directives)).

Attention is drawn to the possibility that some of the elements of this document may be the subject of patent rights. ISO shall not be held responsible for identifying any or all such patent rights. Details of any patent rights identified during the development of the document will be in the Introduction and/or on the ISO list of patent declarations received (see [www.iso.org/patents](http://www.iso.org/patents)).

Any trade name used in this document is information given for the convenience of users and does not constitute an endorsement.

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](http://www.iso.org/iso/foreword.html).

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

This second edition cancels and replaces the first edition (ISO 50004:2014), which has been technically revised. The main changes compared with the previous edition are as follows:

- the document has been restructured as per the high level structure (HLS) for management system standards (MSS), which helps to ensure a high level of compatibility with other MSS, including the addition of context of the organization and risk<sup>[12]</sup>;
- stronger emphasis has been placed on the role of top management;
- exclusions of energy types have been clarified;
- the energy review has been clarified;
- details on the energy data collection plan and related requirements have been added (previously the energy measurement plan);
- the EnPI and EnB text has been clarified to provide a better understanding of these concepts;
- the examples based on the experience of implementation have been included;
- the format has been modified to remove the practical help boxes and integrate the information within the text;
- the annexes have been removed.

Any feedback or questions on this document should be directed to the user's national standards body. A complete listing of these bodies can be found at [www.iso.org/members.html](http://www.iso.org/members.html).

## Introduction

This document provides practical guidance when implementing the requirements of an energy management system (EnMS) based on ISO 50001. It shows the organization how to take a systematic approach to achieve continual improvement in the EnMS and energy performance. This document is not prescriptive. Each organization can determine the best approach to adopt the requirements of ISO 50001. The user is advised to use this document with ISO 50001 and its annexes.

This document provides guidance to users with different levels of energy management, energy consumption and EnMS experience. Each clause explains how an organization can approach a part of an EnMS. Practical tools, methods, strategies and examples are provided to help organizations implement an EnMS and to continually improve energy performance. The examples and approaches presented in this document are for illustrative purposes only. They are not intended to represent the only possibilities, nor are they necessarily suitable for every organization. In implementing, maintaining or improving an EnMS, it is important that organizations select approaches appropriate to their needs.

Energy management is sustainable and most effective when it is integrated with an organization's overall business processes (e.g. operations, finance, quality, maintenance, human resources, procurement, health and safety, and environmental policy).

ISO 50001 can be integrated with other management system standards (MSS), such as ISO 9001, ISO 14001, ISO 45001 and ISO 55001. Integration can have a positive effect on business culture and business practice, embedding energy management into daily practice, improving operational efficiency and reducing the operational costs related to the management system. The common HLS of MSS supports this integration<sup>[12]</sup>.

Ongoing commitment and engagement by top management is essential for the effective implementation, maintenance and improvement of the EnMS, and for achieving continual energy performance improvement. Top management ensures the EnMS is aligned with the strategic direction of the organization and demonstrates its commitment through leadership actions that ensure the ongoing allocation of resources, including the people to implement, maintain and improve the EnMS over time.

# Energy management systems — Guidance for the implementation, maintenance and improvement of an ISO 50001 energy management system

## 1 Scope

This document gives practical guidelines and examples for establishing, implementing, maintaining and improving an energy management system (EnMS) in accordance with the systematic approach of ISO 50001:2018. The guidance in this document is applicable to any organization.

This document does not provide guidance on how to develop an integrated management system.

While the guidance in this document is consistent with the requirements of ISO 50001:2018, it does not provide interpretations of those requirements.

## 2 Normative references

The following documents are referred to in the text in such a way that some or all of their content constitutes requirements of this document. For dated references, only the edition cited applies. For undated references, the latest edition of the referenced document (including any amendments) applies.

ISO 50001:2018, *Energy management systems — Requirements with guidance for use*

## 3 Terms, definitions and abbreviated terms

### 3.1 Terms and definitions

For the purposes of this document, the terms and definitions given in ISO 50001:2018 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/>

### 3.2 Abbreviated terms

|      |   |
|------|---|
| EnB  | energy baseline                           |
| EnMS | energy management system                  |
| EnPI | energy performance indicator              |
| GHG  | greenhouse gas                            |
| HLS  | high level structure                      |
| HVAC | heating, ventilation and air conditioning |
| MSS  | management system standard                |
| PDCA | Plan-Do-Check-Act                         |