

---

---

**Energy management systems —  
Guidelines for a phased  
implementation**

*Systèmes de management de l'énergie — Lignes directrices pour une  
mise en œuvre par étapes*

**iTeh Standards**  
**(<https://standards.iteh.ai>)**  
**Document Preview**

[ISO 50005:2021](https://standards.iteh.ai/catalog/standards/iso/d8582562-c4c0-4ab2-9e1d-e323b5d6419e/iso-50005-2021)

<https://standards.iteh.ai/catalog/standards/iso/d8582562-c4c0-4ab2-9e1d-e323b5d6419e/iso-50005-2021>



**iTeh Standards**  
**(<https://standards.iteh.ai>)**  
**Document Preview**

[ISO 50005:2021](https://standards.iteh.ai/catalog/standards/iso/d8582562-c4c0-4ab2-9e1d-e323b5d6419e/iso-50005-2021)

<https://standards.iteh.ai/catalog/standards/iso/d8582562-c4c0-4ab2-9e1d-e323b5d6419e/iso-50005-2021>



**COPYRIGHT PROTECTED DOCUMENT**

© ISO 2021

All rights reserved. Unless otherwise specified, or required in the context of its implementation, no part of this publication may be reproduced or utilized otherwise in any form or by any means, electronic or mechanical, including photocopying, or posting on the internet or an intranet, without prior written permission. Permission can be requested from either ISO at the address below or ISO's member body in the country of the requester.

ISO copyright office  
CP 401 • Ch. de Blandonnet 8  
CH-1214 Vernier, Geneva  
Phone: +41 22 749 01 11  
Email: [copyright@iso.org](mailto:copyright@iso.org)  
Website: [www.iso.org](http://www.iso.org)

Published in Switzerland

# Contents

Page

<b>Foreword</b> .....	<b>iv</b>
<b>Introduction</b> .....	<b>v</b>
<b>1 Scope</b> .....	<b>1</b>
<b>2 Normative references</b> .....	<b>1</b>
<b>3 Terms and definitions</b> .....	<b>1</b>
<b>4 The maturity model approach to implementing an EnMS</b> .....	<b>1</b>
4.1 Explanation and structure of the maturity model.....	1
4.2 Phased implementation of an EnMS using the maturity model.....	3
4.2.1 General.....	3
4.2.2 Assess the organization's initial situation.....	3
4.2.3 Set and confirm a goal for the phased implementation.....	4
4.2.4 Set up a simple business case.....	5
4.2.5 Set up a project plan.....	5
4.2.6 Monitor the implementation of the project plan.....	5
4.2.7 Gap analysis versus ISO 50001:2018.....	5
<b>5 Description of elements and levels</b> .....	<b>5</b>
5.1 Element 1 — Context of the organization.....	5
5.2 Element 2 — Leadership.....	7
5.3 Element 3 — Resources.....	8
5.4 Element 4 — Energy review.....	9
5.5 Element 5 — Energy performance indicators and energy baselines.....	11
5.6 Element 6 — Objectives, energy targets and action plans.....	13
5.7 Element 7 — Competence and awareness.....	14
5.8 Element 8 — Operations and maintenance.....	15
5.9 Element 9 — Procurement and design.....	16
5.10 Element 10 — Process for communication and control of documented information.....	17
5.11 Element 11 — Monitoring, measurement, analysis and evaluation of energy performance.....	18
5.12 Element 12 — Management review and improvement.....	19
<b>Annex A (informative) Continual improvement and advancing of the EnMS</b> .....	<b>22</b>
<b>Annex B (informative) Level version of the maturity model</b> .....	<b>25</b>
<b>Bibliography</b> .....	<b>37</b>

## 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*.

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).

<https://standards.iteh.ai/catalog/standards/iso/d8582562-e4c0-4ab2-9e1d-e323b5d6419e/iso-50005-2021>

# Introduction

## 0.1 General

It is important to engage all types of organizations and, in particular, small and medium-sized organizations (SMOs) into the broad scale implementation of energy management because of the significant potential such organizations have for energy performance improvement, associated energy cost savings and reductions in greenhouse gas (GHG) emissions.

This document is intended to enable organizations to initiate and improve energy management practices by following a systematic approach with appropriate effort given their resources and context, resulting in continual energy performance improvement.

This document provides practical guidance to undertake a phased implementation of an energy management system (EnMS), e.g. by using in-house capacity. The functioning EnMS can subsequently be extended to meet the requirements of ISO 50001. A well-planned phased implementation of an EnMS can reduce costs and the use of other resources while providing near-term success on which to build. This can help in overcoming barriers for implementation in organizations with limited resources, such as SMOs.

This document explains a phased implementation approach using twelve core elements based on ISO 50001:2018. It outlines the content of the elements and describes four different levels of maturity for each element. [Annex A](#) includes best practices for continual improvement of an EnMS by using a phased approach. An organization can select appropriate tools to find an effective and efficient approach to achieve the desired maturity of its EnMS. The element(s) and the corresponding maturity level(s) targeted depend on the organization's objectives and strategic direction. The EnMS can be integrated with other management systems to benefit from common structures.

In this document, both terms "energy performance improvement" (as defined in ISO 50001:2018) and "energy savings" are used. Energy savings is considered as a subset of energy performance improvement in this document.

## 0.2 Advantages of a phased implementation

Implementing an EnMS in an organization can be a challenge. Organizations can have limited resources (e.g. knowledge and availability of personnel) in order to successfully implement an EnMS. A phased implementation results in several benefits to the organization. The phased implementation described in this document offers flexibility that allows an organization to:

- decide the scope and pace of its EnMS implementation to suit available resources and organizational needs;
- decide on the elements to target and the desired maturity level(s);
- start with areas that indicate the greatest potential for energy performance improvement, return on investment or align with current operational practices;
- stimulate a positive culture towards energy management;
- deliver simple and/or low-cost energy performance improvements and associated energy cost savings, emission reductions and other benefits;
- build initial successes to increase credibility and thus secure commitment and support for further development of the EnMS;
- build a strong foundation to expand an existing EnMS towards meeting the requirements of ISO 50001.

