
**Energy management systems —
Measurement and verification of
energy performance of organizations
— General principles and guidance**

*Systèmes de management de l'énergie — Mesure et Vérification de la
performance énergétique des organismes — Principes généraux et
recommandations*



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Contents

Page

Foreword	iv
Introduction	v
1 Scope	1
2 Normative references	1
3 Terms and definitions	1
4 Measurement and verification principles	4
4.1 General principles	4
4.2 Appropriate accuracy and management of uncertainty	4
4.3 Transparency and reproducibility of M&V process(es)	4
4.4 Data management and measurement planning	5
4.5 Competence of the M&V practitioner	5
4.6 Impartiality	5
4.7 Confidentiality	5
4.8 Use of appropriate methods	5
5 Measurement and verification plan	5
5.1 General	5
5.2 Scope and purpose	6
5.3 Energy performance improvement actions	7
5.4 M&V boundaries	7
5.5 Preliminary M&V plan assessment	8
5.6 Characterization and selection of energy performance metrics including EnPIs	8
5.7 Characterization and selection of relevant variables and static factors	9
5.8 Selection of the M&V method and calculation method	9
5.9 Data	10
gathering plan	10
5.10 Energy baseline establishment and adjustments	11
5.11 Resources required	12
5.12 Roles and responsibilities	12
5.13 Documentation of the M&V plan	12
6 Implementation of M&V plan	12
6.1 Data	12
gathering	12
6.2 Verification of the implementation of the EPIA(s)	13
6.3 Observation anticipated or unforeseen changes	13
6.4 M&V analysis	13
6.5 M&V reporting	14
6.6 Review the need to repeat the process	14
7 Uncertainty	14
8 Measurement and verification documentation	15
Annex A (informative) Overview of the measurement and verification flow	16
Annex B (informative) Measurement uncertainty examples	17
Bibliography	18

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).

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).

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

For an explanation on the meaning of ISO specific terms and expressions related to conformity assessment, as well as information about ISO's adherence to the WTO principles in the Technical Barriers to Trade (TBT) see the following URL: [Foreword - Supplementary information](#)

The committee responsible for this document is Technical Committee ISO/TC 242, *Energy management*.

Introduction

The purpose of this International Standard is to establish a common set of principles and guidelines to be used for measurement and verification (M&V) of energy performance and energy performance improvement of the organization. M&V adds value by increasing the credibility of energy performance and energy performance improvement results. Credible results can contribute to the pursuit of energy performance improvement.

This International Standard can be used irrespective of the type of energy used.

This International Standard can be used in several organizational contexts:

- by organizations with or without existing energy management systems, such as ISO 50001;
- for the M&V of energy performance or energy performance improvement;
- for all or part of an organization.

This International Standard can be used by organizations of any size, M&V practitioners, or any interested parties, in order to apply M&V to the reporting of energy performance results. The principles and guidance in this International Standard can be used independently or in conjunction with other standards and protocols. The principles and guidance in this International Standard are not required by ISO 50001, but can be applied by organizations using ISO 50001.

This International Standard does not specify calculation methods; rather, it establishes a common understanding of M&V and how M&V could be applied to different calculation methods. These principles and guidelines are applicable irrespective of the M&V method used.

[Annex A](#) provides an overview of the M&V flow that is used throughout this International Standard.

This International Standard is one of a family of International Standards developed by ISO/TC 242 and ISO/TC 257, on energy management and on the evaluation of energy savings related to regions and projects. Both ISO/TC 242 and ISO/TC 257 address organizational energy management and energy savings.

Energy management systems — Measurement and verification of energy performance of organizations — General principles and guidance

1 Scope

This International Standard establishes general principles and guidelines for the process of measurement and verification (M&V) of energy performance of an organization or its components. This International Standard can be used independently, or in conjunction with other standards or protocols, and can be applied to all types of energy.

2 Normative references

There are no normative references.

3 Terms and definitions

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

3.1

baseline period

specific period of time used as the reference for comparing with the *reporting period* (3.19)

Note 1 to entry: Use for comparing energy performance and the calculation of the *energy performance* (3.9) and of the *energy performance improvement action* (3.5).

3.2

consequential effect

indirect energy effect (3.3) or *non-energy effect* (3.4)

3.3

indirect energy effect

effect on organizational *energy performance* (3.9) beyond the direct effect of the *energy performance improvement action* (3.5)

EXAMPLE The reduced load on the cooling system due to the improved efficiency of the lighting system resulting in an indirect energy effect.

3.4

non-energy effect

effect of implementing *energy performance improvement actions* (3.5) that is additional to the energy impact

EXAMPLE As a result of the installation of a more efficient washer, less water is needed resulting in a water non-energy effect.

Note 1 to entry: The M&V objective defines to what extent non-energy items that result from energy performance improvement actions are considered.

3.5

energy performance improvement action

EPIA

action or measure or group of action or measures implemented or planned within an *organization* (3.17) intended to achieve *energy performance improvement* (3.10) through technological, managerial or operational, behavioural, economical, or other changes