

**SS ISO 14045:2022**  
**ISO 14045:2012, IDT**  
(ICS 13.020.10; 13.020.60)

**SINGAPORE STANDARD**

**Environmental management – Eco-efficiency  
assessment of product systems – Principles,  
requirements and guidelines**

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## **National Foreword**

This Singapore Standard was prepared by the Working Group on GHG and Product Life Cycle set up by the Technical Committee on Environmental Management under the purview of the Environment and Resources Standards Committee.

This standard is an identical adoption of ISO 14045:2012, “Environmental management – Eco-efficiency assessment of product systems – Principles, requirements and guidelines”, published by the International Organization for Standardization.

NOTE 1 – Where appropriate, the words “International Standard” are read as “Singapore Standard”.

NOTE 2 – Reference to International/Overseas Standards are replaced by applicable Singapore Standards or Technical References.

NOTE 3 – Where numerical values are expressed as decimals, the comma is read as a full point.

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# INTERNATIONAL STANDARD

# ISO 14045

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2012-05-15

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## **Environmental management — Eco- efficiency assessment of product systems — Principles, requirements and guidelines**

*Management environnemental — Évaluation de l'écocoefficacité des  
systèmes de produits — Principes, exigences et lignes directrices*



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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.

International Standards are drafted in accordance with the rules given in the ISO/IEC Directives, Part 2.

The main task of technical committees is to prepare International Standards. Draft International Standards adopted by the technical committees are circulated to the member bodies for voting. Publication as an International Standard requires approval by at least 75 % of the member bodies casting a vote.

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.

ISO 14045 was prepared by Technical Committee ISO/TC 207, *Environmental management*, Subcommittee SC 5, *Life cycle assessment*.

This corrected version of ISO 14045:2012 incorporates the following corrections:

- (page 20) correction of “LCIA” to “LCI” in B.3.2.2, item 5, first bullet, first sentence;
- (page 37) correction of “Another advantage of A and B...” to “Another advantage of A and C...” in B.5.5.2, first bullet, third sentence.

## Introduction

Eco-efficiency assessment is a quantitative management tool which enables the study of life-cycle environmental impacts of a product system along with its product system value for a stakeholder.

Within eco-efficiency assessment, environmental impacts are evaluated using Life Cycle Assessment (LCA) as prescribed by other International Standards (ISO 14040, ISO 14044). Consequently, eco-efficiency assessment shares with LCA many important principles such as life cycle perspective, comprehensiveness, functional unit approach, iterative nature, transparency and priority of a scientific approach.

The value of the product system may be chosen to reflect, for example, its resource, production, delivery or use efficiency, or a combination of these. The value may be expressed in monetary terms or other value aspects.

The key objectives of this International Standard are to:

- establish clear terminology and a common methodological framework for eco-efficiency assessment;
- enable the practical use of eco-efficiency assessment for a wide range of product (including service) systems;
- provide clear guidance on the interpretation of eco-efficiency assessment results;
- encourage the transparent, accurate and informative reporting of eco-efficiency assessment results.



# Environmental management — Eco-efficiency assessment of product systems — Principles, requirements and guidelines

## 1 Scope

This International Standard describes the principles, requirements and guidelines for eco-efficiency assessment for product systems, including:

- a) the goal and scope definition of the eco-efficiency assessment;
- b) the environmental assessment;
- c) the product system value assessment;
- d) the quantification of eco-efficiency;
- e) interpretation (including quality assurance);
- f) reporting;
- g) critical review of the eco-efficiency assessment.

Requirements, recommendations and guidelines for specific choices of categories of environmental impact and values are not included. The intended application of the eco-efficiency assessment is considered during the goal and scope definition phase, but the actual use of the results is outside the scope of this International Standard.

## 2 Normative references

The following referenced documents are indispensable for the application 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 14040:2006, *Environmental management — Life cycle assessment — Principles and framework*

ISO 14044:2006, *Environmental management — Life cycle assessment — Requirements and guidelines*

ISO 14050:2009, *Environmental management — Vocabulary*