









**KESKKONNAKORRALDUS. OLELUSRINGI HINDAMINE.  
NÕUDED JA KASUTUSJUHISED**

**Environmental management - Life cycle assessment -  
Requirements and guidelines (ISO 14044:2006 +  
ISO 14044:2006/Amd 1:2017 +  
ISO 14044:2006/Amd 2:2020)**

## EESTI STANDARDI EESSÕNA

## NATIONAL FOREWORD

See Eesti standard EVS-EN ISO 14044:2006 +A1+A2:2020 sisaldab Euroopa standardi EN ISO 14044:2006 ja selle muudatuste A1:2018 ja A2:2020 ingliskeelset teksti.	This Estonian standard EVS-EN ISO 14044:2006 +A1+A2:2020 consists of the English text of the European standard EN ISO 14044:2006 and its amendments A1:2018 and A2:2020.
Standard on jõustunud sellekohase teate avaldamisega EVS Teatajas.  Euroopa standardimisorganisatsioonid on teinud Euroopa standardi rahvuslikele liikmetele kättesaadavaks 01.07.2006, muudatused A1 07.02.2018 ja A2 07.10.2020.	This standard has been endorsed with a notification published in the official bulletin of the Estonian Centre for Standardisation.  Date of Availability of the European standard is 01.07.2006, for A1 07.02.2018 and A2 07.10.2020.
Muudatusega A1 lisatud või muudetud teksti algus ja lõpp on tekstis tähistatud sümbolitega   .  Muudatusega A2 lisatud või muudetud teksti algus ja lõpp on tekstis tähistatud sümbolitega   .	The start and finish of text introduced or altered by amendment A1 is indicated in the text by tags   .  The start and finish of text introduced or altered by amendment A2 is indicated in the text by tags   .
Standard on kättesaadav Eesti Standardi-keskusest.	The standard is available from the Estonian Centre for Standardisation.

Tagasisidet standardi sisu kohta on võimalik edastada, kasutades EVS-i veebilehel asuvat tagasiside vormi või saates e-kirja meiliaadressile [standardiosakond@evs.ee](mailto:standardiosakond@evs.ee).

ICS 13.020.60; 13.020.10

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English Version

**Environmental management - Life cycle assessment -  
Requirements and guidelines (ISO 14044:2006 + ISO  
14044:2006/Amd 1:2017 + ISO 14044:2006/Amd 2:2020)**

Management environnemental - Analyse du cycle de  
vie - Exigences et lignes directrices (ISO 14044:2006 +  
ISO 14044:2006/Amd 1:2017 + ISO 14044:2006/Amd  
2:2020)

Umweltmanagement - Ökobilanz - Anforderungen und  
Anleitungen (ISO 14044:2006 + ISO 14044:2006/Amd  
1:2017 + ISO 14044:2006/Amd 2:2020)

This European Standard was approved by CEN on 19 June 2006. Amendment A1 was approved by CEN on 24 December 2017. Amendment A2 was approved by CEN on 21 September 2020.

CEN members are bound to comply with the CEN/CENELEC Internal Regulations which stipulate the conditions for inclusion of this European Standard and its amendments into the relevant national standard without any alteration. Up-to-date lists and bibliographical references concerning such national standards may be obtained on application to the CEN-CENELEC Management Centre or to any CEN member.

This European Standard and its amendments A1 and A2 exist in three official versions (English, French, German). A version in any other language made by translation under the responsibility of a CEN member into its own language and notified to the CEN-CENELEC Management Centre has the same status as the official versions.

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EUROPEAN COMMITTEE FOR STANDARDIZATION  
COMITÉ EUROPÉEN DE NORMALISATION  
EUROPÄISCHES KOMITEE FÜR NORMUNG

**CEN-CENELEC Management Centre: Rue de la Science 23, B-1040 Brussels**

## Foreword

This document (EN ISO 14044:2006) has been prepared by Technical Committee ISO/TC 207 "Environmental management" in collaboration with CMC.

This European Standard shall be given the status of a national standard, either by publication of an identical text or by endorsement, at the latest by January 2007, and conflicting national standards shall be withdrawn at the latest by January 2007.

This document supersedes EN ISO 14040:1997, EN ISO 14041:1998, EN ISO 14042:2000, EN ISO 14043:2000.

According to the CEN/CENELEC Internal Regulations, the national standards organizations of the following countries are bound to implement this European Standard: Austria, Belgium, Cyprus, Czech Republic, Denmark, Estonia, Finland, France, Germany, Greece, Hungary, Iceland, Ireland, Italy, Latvia, Lithuania, Luxembourg, Malta, Netherlands, Norway, Poland, Portugal, Romania, Slovakia, Slovenia, Spain, Sweden, Switzerland and United Kingdom.

### Endorsement notice

The text of ISO 14044:2006 has been approved by CEN as EN ISO 14044:2006 without any modifications.

## **A1** Amendment 1 European Foreword

This document (EN ISO 14044:2006/A1:2018) has been prepared by Technical Committee ISO/TC 207 "Environmental management" in collaboration with Technical Committee CEN/TC SS26 "Environmental management" the secretariat of which is held by CEN.

This Amendment to the European Standard EN ISO 14044:2006 shall be given the status of a national standard, either by publication of an identical text or by endorsement, at the latest by August 2018, and conflicting national standards shall be withdrawn at the latest by August 2018.

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### **Endorsement notice**

The text of ISO 14044:2006/Amd 1:2017 has been approved by CEN as EN ISO 14044:2006/A1:2018 without any modification. **A1**

## **A<sub>2</sub> Amendment 2 European foreword**

This document (EN ISO 14044:2006/A2:2020) has been prepared by Technical Committee ISO/TC 207 "Environmental management" in collaboration with CCMC.

This Amendment to the European Standard EN ISO 14044:2006 shall be given the status of a national standard, either by publication of an identical text or by endorsement, at the latest by April 2021, and conflicting national standards shall be withdrawn at the latest by April 2021.

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This document has been prepared under a mandate given to CEN by the European Commission and the European Free Trade Association.

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### **Endorsement notice**

The text of ISO 14044:2006/Amd 2:2020 has been approved by CEN as EN ISO 14044:2006/A2:2020 without any modification. A<sub>2</sub>

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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.

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ISO 14044 was prepared by Technical Committee ISO/TC 207, *Environmental management*, Subcommittee SC 5, *Life cycle assessment*.

This first edition of ISO 14044, together with ISO 14040:2006, cancels and replaces ISO 14040:1997, ISO 14041:1998, ISO 14042:2000 and ISO 14043:2000, which have been technically revised.



## **A1** Amendment 1 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)).

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For an explanation on 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 the following URL: [www.iso.org/iso/foreword.html](http://www.iso.org/iso/foreword.html).

This document was prepared by Technical Committee ISO/TC 207, *Environmental management*, Subcommittee SC 5, *Life cycle assessment*. **A1**

## **A<sub>2</sub>** Amendment 2 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)).

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This document was prepared by Technical Committee ISO/TC 207, *Environmental management*, Subcommittee SC 5, *Life cycle assessment*, in collaboration with the European Committee for Standardization (CEN) Technical Committee CEN/SS S26, *Environmental management*, in accordance with the Agreement on technical cooperation between ISO and CEN (Vienna Agreement).

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). **A<sub>2</sub>**

## Introduction

The increased awareness of the importance of environmental protection, and the possible impacts associated with products<sup>1)</sup>, both manufactured and consumed, has increased interest in the development of methods to better understand and address these impacts. One of the techniques being developed for this purpose is life cycle assessment (LCA).

LCA can assist in

- identifying opportunities to improve the environmental performance of products at various points in their life cycle,
- informing decision-makers in industry, government or non-government organizations (e.g. for the purpose of strategic planning, priority setting, product or process design or redesign),
- the selection of relevant indicators of environmental performance, including measurement techniques, and
- marketing (e.g. implementing an ecolabelling scheme, making an environmental claim, or producing an environmental product declaration).

LCA addresses the environmental aspects and potential environmental impacts<sup>2)</sup> (e.g. use of resources and environmental consequences of releases) throughout a product's life cycle from raw material acquisition through production, use, end-of-life treatment, recycling and final disposal (i.e. cradle-to-grave).

There are four phases in an LCA study:

- a) the goal and scope definition phase,
- b) the inventory analysis phase,
- c) the impact assessment phase, and
- d) the interpretation phase.

The scope, including system boundary and level of detail, of an LCA depends on the subject and the intended use of the study. The depth and the breadth of LCA can differ considerably depending on the goal of a particular LCA.

The life cycle inventory analysis phase (LCI phase) is the second phase of LCA. It is an inventory of input/output data with regard to the system being studied. It involves the collection of the data necessary to meet the goals of the defined study.

The life cycle impact assessment phase (LCIA) is the third phase of the LCA. The purpose of LCIA is to provide additional information to help assess a product system's LCI results so as to better understand their environmental significance.

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1) In this International Standard, the term “product” includes services.

2) The “potential environmental impacts” are relative expressions, as they are related to the functional unit of a product system.

Life cycle interpretation is the final phase of the LCA procedure, in which the results of an LCI or an LCIA, or both, are summarized and discussed as a basis for conclusions, recommendations and decision-making in accordance with the goal and scope definition.

There are cases where the goal of an LCA may be satisfied by performing only an inventory analysis and an interpretation. This is usually referred to as an LCI study.

This International Standard covers two types of studies: life cycle assessment studies (LCA studies) and life cycle inventory studies (LCI studies). LCI studies are similar to LCA studies but exclude the LCIA phase. LCI are not to be confused with the LCI phase of an LCA study.

Generally, the information developed in an LCA or LCI study can be used as part of a much more comprehensive decision process. Comparing the results of different LCA or LCI studies is only possible if the assumptions and context of each study are equivalent. Therefore this International Standard contains several requirements and recommendations to ensure transparency on these issues.

LCA is one of several environmental management techniques (e.g. risk assessment, environmental performance evaluation, environmental auditing, and environmental impact assessment) and might not be the most appropriate technique to use in all situations. LCA typically does not address the economic or social aspects of a product, but the life cycle approach and methodologies described in this International Standard may be applied to these other aspects.

This International Standard, like other International Standards, is not intended to be used to create non-tariff trade barriers or to increase or change an organization's legal obligations.

# Environmental management — Life cycle assessment — Requirements and guidelines

## 1 Scope

This International Standard specifies requirements and provides guidelines for life cycle assessment (LCA) including

- a) the goal and scope definition of the LCA,
- b) the life cycle inventory analysis (LCI) phase,
- c) the life cycle impact assessment (LCIA) phase,
- d) the life cycle interpretation phase,
- e) reporting and critical review of the LCA,
- f) limitations of the LCA,
- g) relationship between the LCA phases, and
- h) conditions for use of value choices and optional elements.

This International Standard covers life cycle assessment (LCA) studies and life cycle inventory (LCI) studies.

The intended application of LCA or LCI results is considered during the goal and scope definition, but the application itself is outside the scope of this International Standard.

This International Standard is not intended for contractual or regulatory purposes or registration and certification.

## 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/TS 14071, *Environmental management — Life cycle assessment — Critical review processes and reviewer competencies: Additional requirements and guidelines to ISO 14044:2006*

## 3 Terms and definitions

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

NOTE These terms and definitions are taken from ISO 14040:2006 and are repeated for the convenience of users of this International Standard.