

AMERICAN NATIONAL STANDARD

***Environmental management —
Life cycle assessment —
Goal and scope definition and inventory analysis***



**AMERICAN SOCIETY FOR QUALITY
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Environmental management— Life cycle assessment — Goal and scope definition and inventory analysis

Approved as an American National Standard by:
NSF International (NSF)
American Society for Testing & Materials (ASTM)
American Society for Quality (ASQ)

An American National Standard Approved on August 3, 2001

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Published by:



Quality Press
P.O. Box 3005
Milwaukee, Wisconsin 53201-3005
800-248-1946
Fax 414-272-1734
www.asq.org
<http://qualitypress.asq.org>
<http://standardsgroup.asq.org>

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Full document details: ASQ ISO 14041 2012

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 3.

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.

International Standard ISO 14041 was prepared by Technical Committee ISO/TC 207, *Environmental management*, Subcommittee SC 5, *Life cycle assessment*.

Annexes A and B of this International Standard are for information only.

Introduction

This International Standard deals with two phases of Life Cycle Assessment (LCA), goal and scope definition and Life Cycle Inventory analysis (LCI), as defined in ISO 14040.

The goal and scope definition phase is important because it determines why an LCA is being conducted (including the intended use of the results) and describes the system to be studied and the data categories to be studied. The purpose, scope and intended use of the study will influence the direction and depth of the study, addressing issues such as the geographic extent and time horizon of the study and the quality of data which will be necessary.

The LCI involves the collection of the data necessary to meet the goals of the defined study. It is essentially an inventory of input/output data with respect to the system being studied.

In the interpretation phase of LCI (see clause 7 of this International Standard), the data are evaluated in light of the goal and scope, the collection of additional data, or both. The interpretation phase also typically results in an improved understanding of the data for reporting purposes. Since LCI is a collection and analysis of input/output data and not an assessment of the environmental impacts associated with those data, the interpretation of LCI results alone cannot be the basis for reaching conclusions about relative environmental impacts.

This International Standard may be used to:

- assist organizations in obtaining a systematic view of interconnected product systems;
- formulate the goal and scope of the study, define and model the systems to be analysed, collect the data and report the results of an LCI;
- establish a baseline of environmental performance for a given product¹⁾ system by quantifying the use of energy flows and raw materials and emissions to air, water and land (environmental input and output data) associated with that system both for the whole system but also broken down by unit process;
- identify those unit processes within a product system where the greatest use of energy flows, raw materials and emissions occur with a view to making targeted improvements;
- provide data for subsequent use to help define ecolabelling criteria;
- help to set policy options, e.g. concerning procurement.

This list is not exclusive, although it does summarize the primary reasons why LCI studies are carried out.

Complementary International Standards ISO 14042 and ISO 14043 concerning further phases of LCA are under preparation (see Bibliography). A Technical Report providing examples of practice in carrying out an LCI as a means of satisfying certain provisions of ISO 14041 is also under preparation.

1) In this International Standard, the term "product" used alone is synonymous to "product or service".

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Environmental management — Life cycle assessment — Goal and scope definition and inventory analysis

1 Scope

This International Standard in addition to ISO 14040 specifies the requirements and the procedures necessary for the compilation and preparation of the definition of goal and scope for a Life Cycle Assessment (LCA), and for performing, interpreting and reporting a Life Cycle Inventory analysis (LCI).

2 Normative reference

The following normative document contains provisions which, through reference in this text, constitute provisions of this International Standard. For dated references, subsequent amendments to, or revisions of, this publication do not apply. However, parties to agreements based on this International Standard are encouraged to investigate the possibility of applying the most recent edition of the normative document indicated below. For undated references, the latest edition of the normative document referred to applies. Members of ISO and IEC maintain registers of currently valid International Standards.

ISO 14040:1997, *Environmental management — Life cycle assessment — Principles and framework*.

3 Terms and definitions

For the purposes of this International Standard, the terms and definitions given in ISO 14040 and the following apply.

3.1

ancillary input

material input that is used by the unit process producing the product, but does not constitute a part of the product

EXAMPLE A catalyst.

3.2

coproduct

any of two or more products from the same unit process

3.3

data quality

characteristic of data that bears on their ability to satisfy stated requirements

3.4

energy flow

input to or output from a unit process or product system, quantified in energy units

NOTE Energy flow that is input may be called energy input; energy flow that is output may be called energy output.