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Environmental management — Life cycle assessment — Life cycle impact assessment

Management environnemental — Analyse du cycle de vie — Évaluation de l'impact du cycle de vie

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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 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.

Attention is drawn to the possibility that some of the elements of this International Standard may be the subject of patent rights. ISO shall not be held responsible for identifying any or all such patent rights.

International Standard ISO 14042 was prepared by Technical Committee ISO/TC 207, *Environmental management*, Subcommittee SC 5, *Life cycle assessment*.

Annex A forms a normative part of this International Standard.

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Introduction

Life cycle impact assessment, LCIA, is the third phase of life cycle assessment described in ISO 14040. The purpose of LCIA is to assess a product system's[1)] life cycle inventory analysis (LCI) results to better understand their environmental significance. The LCIA phase models selected environmental issues, called impact categories, and uses category indicators[2)] to condense and explain the LCI results. Category indicators are intended to reflect the aggregate emissions or resource use for each impact category. These category indicators represent the "potential environmental impacts"[3)] discussed in ISO 14040. In addition, LCIA prepares for the life cycle interpretation phase.

LCIA as part of an overall LCA can, for example, be used to

— identify product system improvement opportunities and assist the prioritization of them,

— characterize or benchmark a product system and its unit processes over time,

— make relative comparisons among product systems based on selected category indicators, or

— indicate environmental issues for which other techniques can provide complementary environmental data and information useful to decision-makers.

While LCIA can assist in these applications, parties should recognize that an extensive assessment of a product system is difficult and may require the use of several different environmental assessment techniques.

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1) In this International Standard, the term "product system" also includes service systems.

2) The full expression for this term is "life cycle impact category indicator".

3) The "potential environmental impacts" referred to in ISO 14040 are a subset of the "environmental impacts" referred to in ISO 14001 resulting from the use of the functional unit calculation. The "potential environmental impacts" are relative expressions, as they are related to the functional unit of a product system.

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1 Scope

This International Standard describes and gives guidance on a general framework for the life cycle impact assessment (LCIA) phase of life cycle assessment (LCA), and the key features and inherent limitations of LCIA. It specifies requirements for conducting the LCIA phase and the relationship of LCIA to the other LCA phases.

2 Normative references

The following normative documents contain provisions which, through reference in this text, constitute provisions of this International Standard. For dated references, subsequent amendments to, or revisions of, any of these publications do not apply. However, parties to agreements based on this International Standard are encouraged to investigate the possibility of applying the most recent editions of the normative documents 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 14001:1996, *Environmental management systems — Specification with guidance for use*.

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

ISO 14041:1998, *Environmental management — Life cycle assessment — Goal and scope definition and life cycle inventory analysis.*

ISO 14043:2000, *Environmental management — Life cycle assessment — Life cycle interpretation.*

ISO 14050:1998, *Environmental management – Vocabulary.*

3 Terms, definitions and abbreviated terms

3.1 Terms and definitions

For the purposes of this International Standard, the following terms and definitions given in ISO 14001, ISO 14040, ISO 14041, ISO 14050 and the following apply.

3.1.1
life cycle inventory analysis result
LCI result
outcome of a life cycle inventory analysis that includes the flows crossing the system boundary and provides the starting point for life cycle impact assessment

3.1.2
impact category
class representing environmental issues of concern to which LCI results may be assigned

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