TECHNICAL SPECIFICATION

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Environmental management — Life cycle assessment — Critical review processes and reviewer competencies: Additional requirements and guidelines to ISO 14044:2006

Management environnemental — Analyse du cycle de vie — Processus de revue critique et compétences des vérificateurs: Exigences et lignes directrices supplémentaires à l'ISO 14044:2006

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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.

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 207, *Environmental management*, Subcommittee SC 5, *Life cycle assessment*.

Introduction

For life cycle assessment, critical review is the conformity assessment approach according to ISO 14040 and ISO 14044. These standards contain the overarching requirements for critical review in concise form.

Based on these requirements, a common critical review practice emerged that satisfied stakeholders. For the mandatory case of life cycle assessment (LCA) studies intended to be used in comparative assertions intended to be disclosed to the public, the performance of a critical review is established as key feature for the acceptance of the study by stakeholders. However, even in the broad range of applications of LCA, for which a critical review is not mandatory, the commissioners of the LCA study often decide today to perform a voluntary critical review to improve the robustness of their studies and to increase credibility.

It is one of the key features of critical review that it does not relate to an accreditation scheme, but ensures quality by making the individual reviewer personally responsible for the work and by giving priority to the content rather than the form.

Because of the increasing use of LCA itself, as well as the broader application in tools like carbon footprinting or upcoming labelling initiatives, it is the intention of this Technical Specification to document the established critical review practice in a more comprehensive way by providing additional requirements and guidelines for conducting a critical review and the competencies required.

This Technical Specification might be applicable to other standards that require independent review of LCA-based procedures and information (e.g. ISO 14045, ISO 14025, ISO/TS 14067), but might need to be adapted to the specific fields of application. Other reference standards can be included in the critical review process.

This Technical Specification does not apply to critical reviews performed prior to its publication.

Environmental management — Life cycle assessment — Critical review processes and reviewer competencies: Additional requirements and guidelines to ISO 14044:2006

1 Scope

This Technical Specification provides additional specifications to ISO 14040:2006 and ISO 14044:2006. It provides requirements and guidelines for conducting a critical review of any type of LCA study and the competencies required for the review.

This Technical Specification provides:

— details of a critical review process, including clarification with regard to ISO 14044:2006;

— guidelines to deliver the required critical review process, linked to the goal of the life cycle assessment (LCA) and its intended use;

— content and deliverables of the critical review process;

— guidelines to improve the consistency, transparency, efficiency and credibility of the critical review process;

— the required competencies for the reviewer(s) (internal, external and panel member);

— the required competencies to be represented by the panel as a whole.

This Technical Specification does not cover the applications of LCA (as illustrated in ISO 14040:2006, Figure 1).

2 Normative references

The following documents, in whole or in part, are normatively referenced in this document and are indispensable for its application. 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*

3 Terms and definitions

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

3.1
independent internal expert
competent person, employed in a full-time or part-time role the *commissioner of the LCA study* (3.4) or by the *practitioner of the LCA study* (3.6), but not involved in defining the scope or conducting the LCA study

Note 1 to entry: An expert is considered to be involved if he/she is part of the commissioner's or practitioner's project team.

3.2
independent external expert
competent person, not employed in a full-time or part-time role by the *commissioner of the LCA study* (3.4) or the *practitioner of the LCA study* (3.6), and not involved in defining the scope or conducting the LCA study

Note 1 to entry: An expert is considered to be involved if he/she is part of the commissioner's or practitioner's project team or has vested financial, political or other interests in the outcome of the study.

3.3
panel member
reviewer (3.10) taking part in a critical review panel

3.4
commissioner of the LCA study
organization (or group of organizations) that finances the LCA study according to ISO 14040 and ISO 14044

3.5
commissioner of the critical review
organization (or group of organizations) that finances the critical review of the LCA study according to ISO 14040 and ISO 14044

Note 1 to entry: Financing the review is not restricted to contracting the *reviewers* (3.10). The contract may be carried out by a third party, e.g. the *practitioner of the LCA study* (3.6) or the *commissioner of the LCA study* (3.4).

3.6
practitioner of the LCA study
organization (or group of organizations) that performs the LCA study according to ISO 14040 and ISO 14044

Note 1 to entry: An organization can act as the *commissioner of the LCA study* (3.4), the *commissioner of the critical review* (3.5) and/or the practitioner of the LCA study at the same time.

3.7
critical review report
documentation of the critical review process and findings, including detailed comments from the *reviewer(s)* (3.10) or the critical review panel, as well as corresponding responses from the *practitioner of the LCA study* (3.6)

3.8
critical review statement
conclusive document aggregating the conclusions from the *reviewer(s)* (3.10) regarding the LCA study, and stating unambiguously whether the LCA study is in conformance with ISO 14040 and ISO 14044

3.9
interested party
individual or group concerned with or affected by the environmental performance of a product system, or by the results of the life cycle assessment

[SOURCE: ISO 14040:2006, definition 3.46]

3.10
reviewer
independent internal expert (3.1) or *independent external expert* (3.2) performing a critical review, or *interested party* (3.9) taking part in a critical review panel

4 Critical review process and tasks

4.1 Defining the scope of the critical review

As stated in ISO 14044:2006, 6.1, the critical review process shall ensure that:

— the methods used to carry out the LCA are consistent with this International Standard;

— the methods used to carry out the LCA are scientifically and technically valid;

— the data used are appropriate and reasonable in relation to the goal of the study;

— the interpretations reflect the limitations identified and the goal of the study; and

— the study report is transparent and consistent.

NOTE "LCA report" and "study report" are used as synonyms and can contain confidential information which can be excluded from the third-party report, according to ISO 14044:2006, 5.2.

There are several options as to how to perform a critical review for a given study, including the following:

a) the review is performed based on expert review (see ISO 14044:2006, 6.2) or panel review (see ISO 14044:2006, 6.3);

b) the review is performed concurrently or at the end of the study;

c) the review includes or excludes an assessment of the life cycle inventory (LCI) model;

d) the review includes or excludes an assessment of individual data sets.

The critical review process shall clearly define and document which options have been covered.

The critical review should cover all aspects of an LCA, including data appropriateness and reasonability, calculation procedures, life cycle inventory, impact assessment methodologies, characterization factors, calculated LCI and life cycle inventory analysis (LCIA) results, and interpretation.

As explained in ISO 14040:2006, 7.1, a critical review can neither verify nor validate the goals that are chosen for an LCA by the commissioner of the LCA study, nor the ways in which the LCA results are used.

Whether a critical review is conducted concurrently with or at the end of the LCA study does not change the deliverables of the critical review process.

Concurrent reviews may help to avoid major revisions of the LCA study at the end of the process, which can cause extra work and delays. Therefore, when the critical review is done concurrently with the study, the workload tends to be typically higher for the reviewer(s), but often lower for the practitioner of the LCA study.

Independent experts conducting a concurrent critical review shall maintain their independency throughout the entire review process and limit their role to the review tasks.

If the independence of an expert (see 3.1 and 3.2) is compromised before the critical review process has been finalized, the reviewer shall be replaced following the guidelines given in 4.2.2.

4.2 Selecting, contracting and replacing external reviewer(s)

4.2.1 Selecting reviewer(s)

In the case of an expert review (see ISO 14044:2006, 6.2), the commissioner or practitioner of the original LCA study may select the internal or external independent expert to perform the review. Based on the goal and scope of the study, additional experts may be included in the review process.