

TECHNICAL REFERENCE**Environmental management – Life cycle
assessment – Critical review processes and
reviewer competencies: Additional
requirements and guidelines to ISO 14044:2006**

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

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	Name	Capacity
Chairman	: Prof Reginald Tan	<i>Individual Capacity</i>
Deputy Chairmen	: Mr Dalson Chung	<i>National Environment Agency</i>
	Mr Norman Lee	<i>Individual Capacity</i>
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	Mr Toh Eng Shyan	<i>Building and Construction Authority</i>
	Er. Alfred Wong	<i>The Institution of Engineers, Singapore</i>
	Mr Yap Ong Heng	<i>Ministry of Transport</i>
	Mr Yeo Lai Hin	<i>Energy Market Authority</i>
	Er. Yeow Mei Leng	<i>Association of Consulting Engineers, Singapore</i>

The Technical Committee on Environmental Management, appointed by the Environment & Resources Standards Committee and responsible for the preparation of this standard, consists of representatives from the following organisations:

	Name	Capacity
Chairman	: Dr Song Bin	<i>Individual Capacity</i>
Secretary	: Ms Aruna Charukesi Palaninathan	<i>SPRING Singapore</i>
Members	: Mr Heng Hoon Jee	<i>Individual Capacity</i>
	Dr Khoo Hsien Hui	<i>Institute of Chemical and Engineering Sciences</i>
	Mr Eddy Lau	<i>Singapore Green Building Council</i>
	Ms Amanda Lin	<i>Singapore Manufacturing Federation</i>
	Mr Suresh. K	<i>National Environment Agency</i>
	Prof Reginald Tan	<i>National University of Singapore</i>
	Mr Toh Eng Shyan	<i>Building and Construction Authority</i>
	Dr Zhou Yi	<i>The Institution of Engineers, Singapore</i>

The Working Group on Greenhouse Gas Management and Product Lifecycle Assessment, appointed by the Technical Committee, to assist in the preparation of this standard, comprises the following experts who contribute in their *individual capacity*:

	Name
Convenor	: Dr Song Bin
Secretary	: Ms Aruna Charukesi Palaninathan
Members	: Mr Krishna Sadashiv
	Ms Diane Peng
	Mr Praveen Tekchandani
	Mr Rahul Kar
	Mr Tan Boon Chong
	Mr Jansen Toh
	Mr Louis Wong

The organisations in which the experts of the Working Group are involved are:

E2C Consulting Pte Ltd

Ernst & Young LLP

National Climate Change Secretariat

National Environment Agency

Ramboll Environ

Singapore Institute of Manufacturing Technology

TUV SUD PSB Pte Ltd

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National Foreword

This Technical Reference (TR) was prepared by the Working Group on Greenhouse Gas Management and Product Lifecycle Assessment appointed by the Technical Committee on Environmental Management under the direction of the Environment and Resources Standards Committee.

This TR is identical with ISO/TS 14071:2014 published by the International Organization for Standardization.

This TR is a provisional standard made available for application over a period of three years. The aim is to use the experience gained to update the TR so that it can be adopted as a Singapore Standard. Users of the TR are invited to provide feedback on its technical content, clarity and ease of use. Feedback can be submitted using the form provided in the TR. At the end of the three years, the TR will be reviewed, taking into account any feedback or other considerations, to further its development into a Singapore Standard if found suitable.

Where appropriate, the words “Technical Specification” shall be read as “Technical Reference”. The reference to International Standards shall be replaced by the following Singapore Standards:

International Standard	Corresponding Singapore Standard
ISO 14025	SS ISO 14025
ISO 14040	SS ISO 14040

Attention is drawn to the possibility that some of the elements of this Technical Reference may be the subject of patent rights. Enterprise Singapore shall not be held responsible for identifying any or all of such patent rights.

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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).

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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.

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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*