

ICS 13.020.10
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**NATIONAL STANDARD OF THE
PEOPLE'S REPUBLIC OF CHINA**

GB/T 24040-2008

Replacing GB/T 24040-1999; GB/T 24041-2000; GB/T 24042-2002; GB/T 24043-2002

**Environmental management -- Life cycle assessment --
Principles and frameworks**

环境管理 生命周期评价 原则与框架

(English Translation)

Issued on: May 26, 2008

Implemented on: November 1, 2008

Issued by: Standardization Administration of China

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Foreword

This standard is equivalent to international standard ISO 14040:2006 "Environmental management - Life cycle assessment - Principles and Framework" (in English).

This standard is one of the life cycle assessment series of standards. LCA series of standards for a total two criteria, another criteria.

--- GB/T 24044 Environmental management - Life cycle assessment - Requirements and guidelines for ease of use, this standard made the following editorial changes.

- a) "ISO 14040" to replace the word "GB/T 24040";
- b) use the "standard" instead of "this International Standard";
- c) use a decimal point instead of a decimal comma ",", ". ", ";
- d) Remove ISO 14040:2006 Foreword, an increase of Chinese Preface;
- e) For the ISO 14040:2006 and other international standards have been cited as identical with our standard, our adoption of this standard these national standards or industry standards corresponding to international standards in place, the rest is not tantamount to the adoption of a standard for the international standards in this Standards are directly referenced.

This standard and GB/T 24044 together instead of GB/T 24040-1999 "Environmental management - Life cycle assessment - Principles and framework" GB/T 24041-2000 "Environmental management - Life cycle assessment purpose and scope definition and inventory analysis", GB/T 24042-2002 "Environmental management - Life cycle assessment Life Cycle Impact Assessment" and GB/T 24043-2002 "Environmental management - Life cycle assessment Life cycle interpretation. " this standard and GB/T 24040-1999 main differences are as follows.

a) The term of the following modifications.

- Remove the GB/T 24040-1999 defined in terms of practitioners;
- Increasing the GB/T 24041-2000 for the auxiliary input, co-products, data quality, energy flow, energy raw materials, intermediate 10 definitions of terms product, process energy, the reference flow, sensitivity analysis and uncertainty analysis;
- Increasing the GB/T 24042-2002 results of analysis of the life cycle inventory, the impact of the type of life cycle impact type parameter 6 definition of the term number, type of endpoint characterization factors and environmental mechanisms;
- Increasing the GB/T 24043-2002 in integrity checking, consistency checking, evaluation and sensitivity inspection four terms Definition;
- New products, processes, choice criteria, the definition of intermediate flow, product flow, emissions, identification of assessment and other seven terms;
- Of energy flow, intermediate products, life cycle inventory analysis, output, process energy, product flow, product system, the system side 13 definitions of terms sector, uncertainty analysis, unit processes, waste, type the end, and so the consistency check modify.

b) the content of the following modifications.

- In "4 LCA general description" chapter added to the overall "4.1 LCA principles" and "System 4.4 product overview Read "and so on;
- Increased describes the reference stream in 5.2.2;
- Increased the contents of the system boundaries need to consider the introduction in 5.2.3;
- 5.3 in GB/T 24041-2000 relevant content incorporated into this standard;
- In 5.4 in GB/T 24042-2002 content incorporated into this standard;
- In 5.5 in GB/T 24043-2002 content incorporated into this standard;
- Changes in the informative Appendix About LCA applications;
- Of reference were revised lists all relevant standards referenced in this standard.

GB/T 24040-2008/ISO 14040:2006 Appendix A of this standard is an informative annex.

This standard is managed by the National Standardization Technical Committee on Environment and centralized.

This standard drafting units. China National Institute of Standardization, Tsinghua University, Research Center for Eco-Environmental Sciences, China National Conformity Assessment Accreditation center, People's University.

Introduction

With the improvement of environmental awareness and further understanding of 1) the impact of production and consumption may be associated with the product right, people want to build Some methods to better understand and explain these effects. Life cycle assessment (LCA) is based on this purpose developed technology one.

LCA can be used to help.

--- Identification improve all phases of the product life cycle environmental performance of opportunity;

--- To industrial, governmental or non-governmental organizations in the decision-makers to provide information (for example, strategic planning, to determine the priorities for the product or process Design or re-design purposes);

--- Select parameters related to environmental performance, including measurement techniques;

--- Marketing (such as the implementation of eco-labeling system, issued a statement or environmental release product declaration).

GB/T 24044 standard LCA practitioners details the requirements to carry out the LCA.

LCA stressed throughout from the acquisition of raw materials, production, use and end of life treatment, recycling and final disposal (ie, from cradle to grave) Environmental aspects of the product lifecycle and potential environmental impacts 2) (for example, resource use and waste environmental outcomes emissions).

There are four phases in the LCA study.

a) to determine the purpose and scope;

b) inventory analysis;

c) impact assessment;

d) explanation.

1) this standard, the term "product" includes services.

2) "potential environmental impacts" is a relative expression, because it functional unit associated with the production system.

Range LCA study (including system boundary and level of detail) depends on the object and the intended application research. Different purposes LCA, its depth and breadth can be very different.

Life Cycle Inventory (LCI) phase is the second phase of the LCA. It is the study of the system input and output data to establish Inventory process, including the process to meet

the purpose of data collection.

Life Cycle Impact Assessment (LCIA) phase is the third phase of the LCA. LCIA aims to provide further information to help LCI results of the evaluation system of the product, in order to better understand the importance of their impact on the environment.

LCA Life cycle interpretation is the last stage. According to the present stage of the purpose and scope as defined for LCI, or LCIA, or both summary and discussion of the results, provide a basis for conclusions, recommendations, and decision making.

In some cases, only be able to achieve a good purpose by LCA inventory analysis and interpretation. Commonly seen as a LCI study.

This standard covers two types of research. Life Cycle Assessment (LCA studies) and life cycle inventory studies (LCI studies).

LCI and LCA research studies similar to, but not including the LCIA phase. LCI and LCA research should study the LCI phase confused.

In general, the information acquired from LCA or LCI Institute as part of other more comprehensive decision-making process to be applied.

For different LCA or LCI study only if their background assumptions and conditions are the same, it is possible to compare the results. because this address these issues in this standard contains a number of requirements and recommendations to ensure transparency.

LCA only environmental management techniques (such as risk assessment, environmental performance evaluation, environmental auditing, environmental impact assessment) in one, and it in all cases of non-it is the most suitable. LCA typically does not involve products in economic and social factors, but described in the standard of life Use and methodology cycle can be combined with these factors.

The standards and other standards, are not intended to create non-tariff trade barriers or to increase or change an organization's legal liability.

GB/T 24040-2008/ISO 14040:2006 Environmental management - Life cycle assessment Principles and Framework

1 Scope

This standard describes the life cycle assessment (LCA) principles and frameworks, including.

- a) to determine the purpose and scope of the LCA;
- b) life cycle inventory analysis (LCI) phase;
- c) Life Cycle Impact Assessment (LCIA) phase;