INTERNATIONAL STANDARD

ISO 14067

First edition
2018-08

Greenhouse gases — Carbon footprint of products — Requirements and guidelines for quantification

Gaz à effet de serre — Empreinte carbone des produits — Exigences et lignes directrices pour la quantification

Reference number
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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 of the voluntary nature of standards, the meaning of ISO specific terms and expressions related to conformity assessment, as well as information about ISO's adherence to the World Trade Organization (WTO) principles in the Technical Barriers to Trade (TBT) see www.iso.org/iso/foreword.html.

This document was prepared by Technical Committee ISO/TC 207, *Environmental management*, Subcommittee SC 7, *Greenhouse gas management and related activities*.

This first edition cancels and replaces ISO/TS 14067:2013, which has been technically revised. It constitutes a reduction in scope as follows:

— principles, requirements and guidance on communication of the carbon footprint of a product (CFP) and the partial CFP are now covered in ISO 14026;

— principles, requirements and guidance on verification are now covered in ISO 14064-3;

— principles, requirements and guidance on PCR are now covered in ISO/TS 14027;

— requirements for the treatment of biogenic carbon and electricity have been revised and clarified;

— the definitions have been aligned within the ISO 14064 series for ease of interpretation.

This document is the generic standard for the quantification of the carbon footprint of products.

Any feedback or questions on this document should be directed to the user's national standards body. A complete listing of these bodies can be found at www.iso.org/members.html.

Introduction

Climate change arising from anthropogenic activity has been identified as one of the greatest challenges facing the world and will continue to affect business and citizens over future decades.

Climate change has implications for both human and natural systems and could lead to significant impacts on resource availability, economic activity and human wellbeing. In response, international, regional, national and local initiatives are being developed and implemented by public and private sectors to mitigate greenhouse gas (GHG) concentrations in the Earth's atmosphere as well as to facilitate adaptation to climate change.

There is a need for an effective and progressive response to the urgent threat of climate change on the basis of the best available scientific knowledge. ISO produces documents that support the transformation of scientific knowledge into tools that will help address climate change.

GHG initiatives on mitigation rely on the quantification, monitoring, reporting and verification of GHG emissions and/or removals.

The ISO 14060 family provides clarity and consistency for quantifying, monitoring, reporting and validating or verifying GHG emissions and removals to support sustainable development through a low-carbon economy. It also benefits organizations, project proponents and stakeholders worldwide by providing clarity and consistency on quantifying, monitoring, reporting, and validating or verifying GHG emissions and removals. Specifically, the use of the ISO 14060 family:

— enhances the environmental integrity of GHG quantification;

— enhances the credibility, consistency, and transparency of GHG quantification, monitoring, reporting, validation and verification;

— facilitates the development and implementation of GHG management strategies and plans;

— facilitates the development and implementation of mitigation actions through emission reductions or removal enhancements;

— facilitates the ability to track performance and progress in the reduction of GHG emissions and/or increase in GHG removals.

Applications of the ISO 14060 family include:

— corporate decisions, such as identifying GHG emission reduction opportunities and increasing profitability by reducing energy consumption;

— carbon risk management, such as the identification and management of risks and opportunities;

— voluntary initiatives, such as participation in voluntary GHG registries or sustainability reporting initiatives;

— GHG markets, such as the buying and selling of GHG allowances or credits;

— regulatory/government GHG programmes, such as credit for early action, agreements or national and local reporting initiatives.

ISO 14064-1 details principles and requirements for designing, developing, managing and reporting organization-level GHG inventories.

It includes requirements for determining GHG emission and removal boundaries, quantifying an organization's GHG emissions and removals, and identifying specific company actions or activities aimed at improving GHG management.

It also includes requirements and guidance on inventory quality management, reporting, internal auditing and the organization's responsibilities in verification activities.

ISO 14064-2 details principles and requirements for determining baselines and for the monitoring, quantifying and reporting of project emissions. It focuses on GHG projects or project-based activities specifically designed to reduce GHG emissions and/or enhance GHG removals. It provides the basis for GHG projects to be validated and verified.

ISO 14064-3 details requirements for verifying GHG statements related to GHG inventories, GHG projects, and carbon footprints of products. It describes the process for validation or verification, including validation or verification planning, assessment procedures, and the evaluation of organizational, project and product GHG statements.

ISO 14065 defines requirements for bodies that validate and verify GHG statements. Its requirements cover impartiality, competence, communication, validation and verification processes, appeals, complaints, and the management system of validation and verification bodies. It can be used as a basis for accreditation and other forms of recognition in relation to the impartiality, competence, and consistency of validation and verification bodies.

ISO 14066 specifies competence requirements for validation teams and verification teams. It includes principles and specifies competence requirements based on the tasks that validation teams or verification teams must be able to perform.

This document defines the principles, requirements and guidelines for the quantification of the carbon footprint of products. The aim of this document is to quantify GHG emissions associated with the life cycle stages of a product, beginning with resource extraction and raw material sourcing and extending through the production, use and end-of-life stages of the product.

ISO/TR 14069 assists users in the application of ISO 14064-1, providing guidelines and examples for improving transparency in the quantification of emissions and their reporting. It does not provide additional guidance to ISO 14064-1.

Figure 1 illustrates the relationship among the ISO 14060 family of GHG standards.

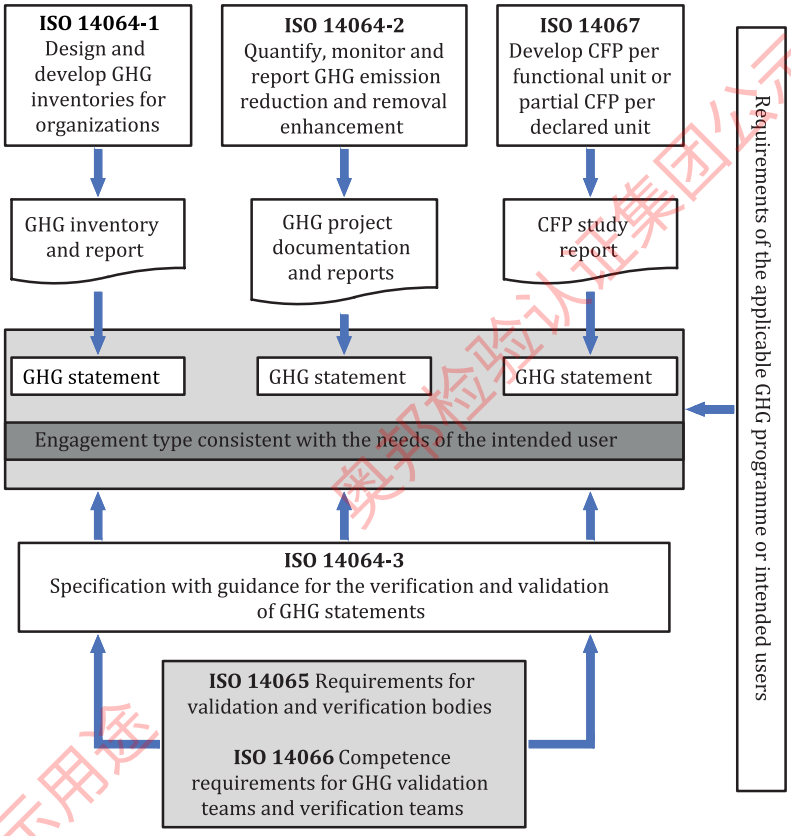

Figure 1 — Relationship among the ISO 14060 family of GHG standards

NOTE In this document, GHG statements are the CFP or the partial CFP.

GHGs can be emitted and removed throughout the life cycle of a product which includes acquisition of raw material, design, production, transportation/delivery, use and the end-of-life treatment. Quantification of the carbon footprint of a product (CFP) will assist in the understanding and action to increase GHG removals and reduce GHG emissions throughout the life cycle of a product. This document details principles, requirements and guidelines for the quantification of CFPs, i.e. goods and services, based on GHG emissions and removals over their life cycle. Requirements and guidelines for the quantification of a partial CFP are also provided. Communication related to the CFP or the partial CFP is covered in ISO 14026. The development of product category rules (PCR) is covered in ISO/TS 14027.

This document is based on principles, requirements and guidelines identified in existing International Standards on life cycle assessment (LCA), ISO 14040 and ISO 14044, and aims to set specific requirements for the quantification of a CFP and a partial CFP.

This document is expected to benefit organizations, governments, industry, service providers, communities and other interested parties by providing clarity and consistency in quantifying CFPs. Specifically, using LCA in accordance with this document, with climate change as the single impact category, can offer benefits through:

— avoiding burden-shifting from one stage of a product life cycle to another or between product life cycles;

— providing requirements for the quantification of the CFP;

— facilitating CFP performance tracking in reducing GHG emissions;

— providing a better understanding of the CFP such that potential opportunities for increases in GHG removals and reductions of GHG emissions might be identified;

— helping to promote a sustainable low carbon economy;

— enhancing the credibility, consistency and transparency of the quantification and reporting of the CFP;

— facilitating the evaluation of alternative product design and sourcing options, production and manufacturing methods, raw material choices, transportation, recycling and other end-of-life processes;

— facilitating the development and implementation of GHG management strategies and plans across product life cycles, as well as the detection of additional efficiencies in the supply chain;

— preparing reliable CFP information.

NOTE In respect to the terminology of ISO 14026 regarding footprint communication, climate change is considered as an example of an “area of concern”.

Figure 2 illustrates the connection between this document and standards outside the GHG management family of standards.

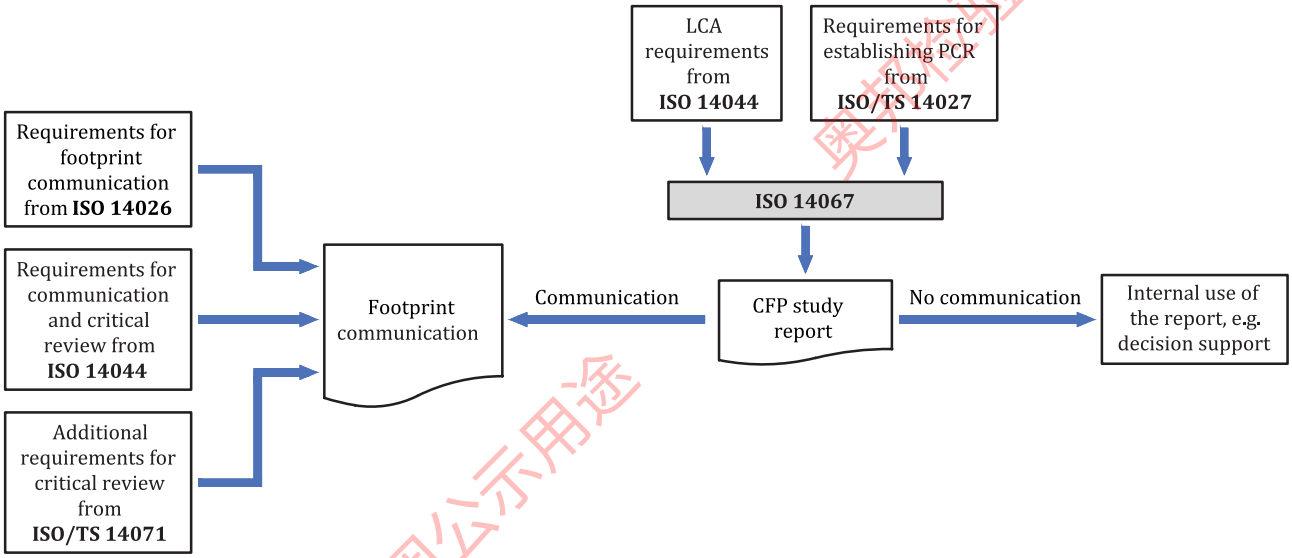

Figure 2 — Relationship between this document and standards beyond the GHG management family of standards

CFPs prepared in accordance with this document contribute to the objectives of GHG-related policies and/or regimes.

Limitations of CFPs based on this document are described in Annex A.

Greenhouse gases — Carbon footprint of products — Requirements and guidelines for quantification

1 Scope

This document specifies principles, requirements and guidelines for the quantification and reporting of the carbon footprint of a product (CFP), in a manner consistent with International Standards on life cycle assessment (LCA) (ISO 14040 and ISO 14044).

Requirements and guidelines for the quantification of a partial CFP are also specified.

This document is applicable to CFP studies, the results of which provide the basis for different applications (see Clause 4).

This document addresses only a single impact category: climate change. Carbon offsetting and communication of CFP or partial CFP information are outside the scope of this document.

This document does not assess any social or economic aspects or impacts, or any other environmental aspects and related impacts potentially arising from the life cycle of a product.

2 Normative references

The following documents are referred to in the text in such a way that some or all of their content constitutes requirements of this document. For dated references, only the edition cited applies. For undated references, the latest edition of the referenced document (including any amendments) applies.

ISO/TS 14027:2017, *Environmental labels and declarations — Development of product category rules*

ISO 14044:2006, *Environmental management — Life cycle assessment — Requirements and guidelines*

ISO/TS 14071, *Environmental management — Life cycle assessment — Critical review processes and reviewer competencies: Additional requirements and guidelines to ISO 14044:2006*

3 Terms, definitions and abbreviated terms

3.1 Terms and definitions

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

ISO and IEC maintain terminological databases for use in standardization at the following addresses:

— ISO Online browsing platform: available at https://www.iso.org/obp

— IEC Electropedia: available at http://www.electropedia.org/

国际标准 **ISO14067**

第一版

2018.08

温室气体—产品碳足迹—量化要求和指南

目录

前言

国际标准化组织（ISO）是由各国标准化机构（ISO 成员机构）组成的一个世界联合会。编制国际标准的工作通常由 ISO 技术委员会进行。已针对每个主题设立了一个技术委员会，凡对某一主题感兴趣的任何成员机构均有权派代表参加委员会。与 ISO 保持联系的政府间和非政府间国际组织也参加这方面的工作。ISO 就有关电工标准化的所有事宜与国际电工委员会（IEC）保持着密切的合作关系。

ISO/IEC 指令第 1 部分描述了用于编制本文件和用于进一步维护的程序。特别是，应注意不同类型的 ISO 文件所需的不同批准标准。本文件根据 ISO/IEC 指令第 2 部分的编辑规则起草（见 www.iso.org/directives）。

请注意，本文件的某些要素可能是专利权的主体。ISO 不负责识别任何或所有此类专利权。

本文件编制过程中确定的任何专利权的详细信息将在引言和/或收到的 ISO 专利声明清单中（见 www.iso.org/patents）。本文件中使用的任何商品名称都是为方便用户而提供的信息，不构成认可。

有关标准的自愿性质解释、与合格评定相关的 ISO 特定术语和表达的含义，以及有关 ISO 在技术性贸易壁垒（TBT）中遵守世界贸易组织（WTO）原则的信息，请参见 www.iso.org/iso/foreword.html。

本文件由技术委员会 ISO/TC207 环境管理小组委员会 SC7 温室气体管理和相关活动小组委员会编制。

本第一版取消并取代了 ISO/TS14067:2013，该标准经过了技术修订。它构成范围的缩减，如下所示：

—有关产品碳足迹（CFP）和部分 CFP 通信的原则、要求和指南，见 ISO14026；

—有关核查的原则、要求和指南见 ISO14064—3；

—有关 PCR 的原则、要求和指南见 ISO/TS14027；

—对生物炭和电处理的要求进行了修订和澄清；

—为了便于解释，已在 ISO14064 系列中对定义进行了调整。

本文件是产品碳足迹量化的通用标准。有关本文件的任何反馈或问题都应提交给用户的国家标准机构。这些机构的完整列表可以在 www.iso.org/members.html 上找到。

引言

人类活动引起的气候变化已被确定为世界面临的最大挑战之一，并将在未来几十年继续影响商业和公民。

气候变化对人类和自然系统都有影响，并可能对资源可用性、经济活动和人类福祉产生重大影响。作为回应，公共和私营部门正在制定和实施国际、区域、国家和地方举措，减轻地球大气中温室气体（GHG）的浓度，并促进适应气候变化。

有必要在现有最佳科学知识的基础上，对气候变化的紧急威胁作出有效和渐进的应对。国际标准化组织编制的文件支持将科学知识转化为有助于应对气候变化的工具。

温室气体减排举措依赖于温室气体排放和/或清除的量化、监测、报告和核查。

ISO14060 系列为量化、监控、报告和核查或审定温室气体排放和清除提供清晰和一致性的叙述方式，以通过低碳经济支持可持续发展。通过提供量化、监测、报告和核查或审定温室气体排放和清除方面的清晰和一致性，有利于全世界的组织、项目支持者和利益相关者。具体来说，使用 ISO14060 系列：

—提高温室气体量化的环境完整性；

—提高温室气体量化、监测、报告、核查或审定的可信度、一致性和透明度；

—促进温室气体管理战略和计划的制定和实施；

—通过减少排放或提高排放，促进缓解措施的制定和实施；

—有助于跟踪温室气体排放量减少和/或温室气体清除量增加方面的绩效和进展。

ISO14060 系列的应用包括：

—企业决策，例如确定温室气体减排机会，通过减少能源消耗提高盈利能力；

—碳风险管理，如风险和机遇的识别和管理；

—自愿倡议，例如参与自愿温室气体登记或持续性主动报告；

—温室气体市场，如购买和出售温室气体配额或信贷；

—监管/政府温室气体计划，如早期行动信贷、协议或国家和地方报告方案。

ISO14064—1 详细说明了设计、开发、管理和报告组织级 GHG 清单的原则和要求。它包括确定温室气体排放和清除边界，量化组织的温室气体排放和清除，以及确定旨在改进温室气体管理的具体公司行动或活动的要求。它还包括对清单质量管理、报告、内部审计以及组织在核查活动中的职责的要求和指导。

ISO14064—2 详细说明了确定基线以及项目排放监测、量化和报告的原则和要求。它侧重于温室气体项目或专门为温室气体排放减少和/或清除增强而设计的基于项目的活动。为温室气体项目的核查和审定提供了依据。

ISO14064—3 详细要求核查与温室气体清单、温室气体项目和产品碳足迹有关的温室气体声明。它描述了核查与审定的过程，包括核查和审定计划、评估程序以及组织、项目和产品 GHG 声明的评估。

ISO14065 规定了核查与审定 GHG 声明的机构的要求。其要求包括公正性、能力、沟通、核查与审定过程、申诉、投诉以及核查与审定机构的管理体系。它可以用作与审定和核查机构的公正性、能力和一致

性有关的认可和其他形式的认可的基础。

ISO14066 规定了核查团队和审定团队的能力要求。它包括原则，并根据核查团队或审定团队必须能够执行的任务来规定能力要求。本文件规定了产品碳足迹量化的原则、要求和指南。本文件旨在量化与产品生命周期阶段相关的温室气体排放量，从资源开采和原材料采购开始，一直延伸到产品的生产、使用和寿命结束阶段。

ISO/TR14069 帮助用户应用 ISO14064—1，为提高排放量化及其报告的透明度提供指导和示例。它不提供 ISO14064—1 的附加指南。

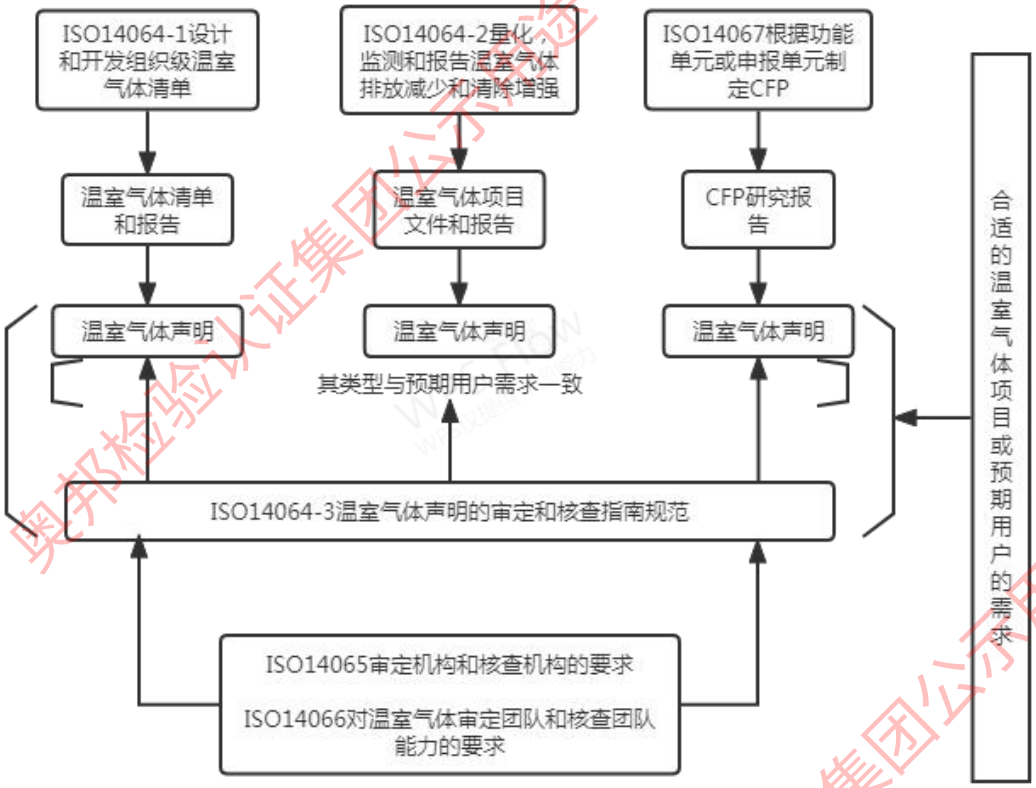

图 1 说明了 ISO14060 系列温室气体标准之间的关系。

温室气体可以在产品的整个生命周期内排放和清除，包括原材料的获取、设计、生产、运输/交付、使用和寿命终止处理。量化产品的碳足迹（CFP）将有助于理解和采取行动，在产品的整个生命周期中增加温室气体的清除量并减少温室气体的排放量。本文件详细说明了商品和服务等基于其生命周期内的温室气体排放和清除的 CFP 量化的原则、要求和指南。还提供了部分 CFP 量化的要求和指南。与 CFP 或部分 CFP 的相关表述见 ISO14026。ISO/TS14027 涵盖了产品类别规则（PCR）的开发。

本文件基于现行国际生命周期评估标准（LCA）、ISO14040 和 ISO14044 中确定的原则、要求和指南，旨在为 CFP 和部分 CFP 的量化制定具体要求。

本文件旨在通过提供量化 CFP 的清晰性和一致性，使组织、政府、行业、服务提供商、社区和其他相关方受益。具体来说，根据本文件使用 LCA，将气候变化作为单一影响类别，可以通过以下方式提供益处：

—避免负担从产品生命周期的一个阶段转移到另一个阶段，或在产品生命周期之间转移；

—提供 CFP 量化要求；

—促进 CFP 在减少温室气体排放方面的绩效跟踪；

—更好地了解产品碳足迹，以便确定增加温室气体清除和减少温室气体排放的潜在机会；

—帮助促进可持续的低碳经济；

—提高 CFP 量化和报告的可信度、一致性和透明度；

—促进对替代产品设计和采购方案、生产和制造方法、原材料选择、运输、回收和其他寿命终止过程的评估；

—促进产品生命周期内温室气体管理战略和计划的制定和实施，并发现供应链中的额外效率；

—准备可靠的 CFP 信息。

注：关于 ISO14026 关于碳足迹表述的术语，气候变化被视为“关注领域”的一个例子。

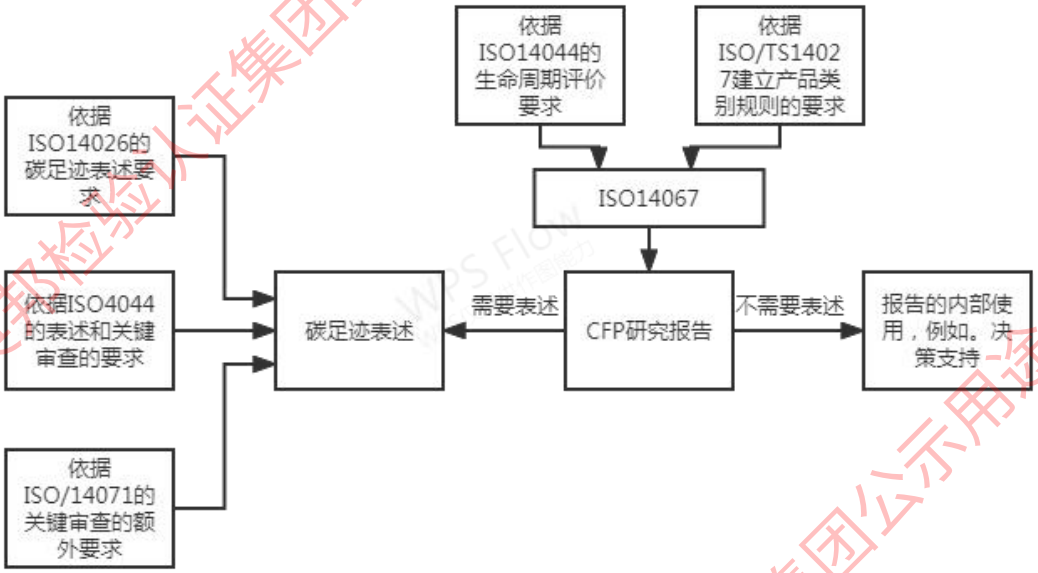

图 2 本文件与 GHG 管理系列标准以外的标准之间的关系。

根据本文件编制的 CFP 有助于实现 GHG 相关政策和/或制度的目标。

附录 A 描述了基于本文件的 CFP 限制。

温室气体—产品碳足迹—量化要求和指南

1.范围

本文件规定了量化和报告产品碳足迹（CFP）的原则、要求和指南，其方式与国际生命周期评估标准（LCA）（ISO14040 和 ISO14044）一致。此外还规定了有关产品的部分碳足迹（部分 CFP）量化的要求和指南。

本文件适用于 CFP 研究，其结果可为不同应用提供依据（见第 4 条）。

本国际标准仅阐明一个影响类别，即气候变化。

有关碳抵消方面的信息不属于本国际标准的范畴。

本文件不评估任何社会或经济方面，或其他任何产品生命周期可能产生的相关影响。

2.参考标准

为应用本文件，下列参考文件是必备的。凡是注日期的引用文件，仅引用的版本适用。凡是不注日期的引用文件，其最新版本（包括任何修改）适用。

ISO/TS14027:2017,Environmental labels and declarations—Development of product category rules（环境标签和声明—产品类别规则的制定）

ISO14044:2006,Environmental management—Life cycle assessment—Requirements and guidelines（环境管理.生命周期评价.要求和指南）

ISO/TS14071,Environmental management—Life cycle assessment—Critical review processes and reviewer competencies: Additional requirements and guidelines to ISO14044:2006（环境管理.生命周期评估.关键评审过程和评审员能力：ISO14044:2006 的附加要求和指南）

3.术语，定义和缩略语

3.1 术语和定义

在本文件中，以下术语和定义适用。

国际标准化组织和国际电工委员会在以下地址维护标准化用术语数据库：

—ISO 在线浏览平台：可从 https://www.iso.org/obp 获取

—IEC Electropedia：可从 http://www.electropedia.org 获取。

3.1.1 产品碳足迹量化相关的术语

3.1.1.1 产品碳足迹 CFP

产品体系（3.1.3.2）中的温室气体排放量（3.1.2.5）和温室气体清除量（3.1.2.6）之和（3.1.3.2），以二氧化碳当量（3.1.2.2）为单位表示，基于使用气候变化单一影响类别（3.1.4.8）的生命周期评价（3.1.4.3）。

注 1：可将 CFP 分解为一组数字，确定具体的温室气体排放量和清除量（见表 1）。CFP 也可以分解为

如需获取全文，请联系奥邦检验认证集团客户服务部门：

1）通过邮件提出申请。请发送到邮箱：**17312273399@163.com**

2）也可通过客服电话咨询 **025-85307007**。