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Climate change management — Transition to net zero

Part 1: Carbon neutrality

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**Climate change management —
Transition to net zero —**

**Part 1:
Carbon neutrality**

*Gestion du changement climatique — Transition vers le zéro émission
nette —*

Partie 1: Neutralité carbone



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 document 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).

ISO draws attention to the possibility that the implementation of this document may involve the use of (a) patent(s). ISO takes no position concerning the evidence, validity or applicability of any claimed patent rights in respect thereof. As of the date of publication of this document, ISO had not received notice of (a) patent(s) which may be required to implement this document. However, implementers are cautioned that this may not represent the latest information, which may be obtained from the patent database available at www.iso.org/patents. ISO shall not be held responsible for identifying any or all such patent rights.

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 and climate change management and related activities*.

A list of all parts in the ISO 14068 series can be found on the ISO website.

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

0.1 Climate change and the ISO 14060 family of standards

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

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

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

Climate change mitigation initiatives rely on the quantification, monitoring, reporting, validation and verification of GHG emissions and removals.

The ISO 14060 family of standards benefits organizations, GHG project proponents and stakeholders worldwide by providing clarity and consistency for quantifying, monitoring, reporting, validating and verifying GHG emissions and removals and carbon neutrality. Specifically, the use of the ISO 14060 family of standards:

- enhances the credibility 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 that provide GHG emission reductions or GHG removal enhancements;
- facilitates the ability to track performance and progress in the reduction of either GHG emissions or the increase in GHG removals, or both;
- supports sustainable development and the actions needed to achieve a low-carbon economy.

Applications of the ISO 14060 family of standards include:

- corporate decisions, such as identifying GHG emission reduction opportunities and increasing profitability by reducing energy consumption;
- risk management, such as the identification and management of climate risks and opportunities;
- voluntary initiatives, such as participation in voluntary GHG programmes 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.

The following summarizes each of the documents in the ISO 14060 family of standards:

- 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 organizational 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 baseline scenarios and for the monitoring, quantifying and reporting of project emissions and removals. It focuses on GHG projects or project-based activities specifically designed to reduce either GHG emissions or enhance GHG removals, or both. 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.
- ISO 14067 defines the principles, requirements and guidelines for the quantification of the carbon footprint of products (e.g. goods or services, including buildings and events). It describes the process 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/TS 14064-4¹⁾ assists users in the application of ISO 14064-1, providing guidelines and examples for improving transparency in the quantification of emissions and their reporting.

0.2 ISO 14068-1 (this document) — Carbon neutrality

This document is designed to build upon existing International Standards addressing GHG quantification, reporting, validation and verification, such as ISO 14064-1, ISO 14064-3 and ISO 14067. [Figure 1](#) illustrates the relationship with documents within the ISO 14060 family of GHG standards as well as some related International Standards on environmental labels and declarations.

1) Under preparation. Stage at the time of publication: ISO/CD TS 14064-4:2023.

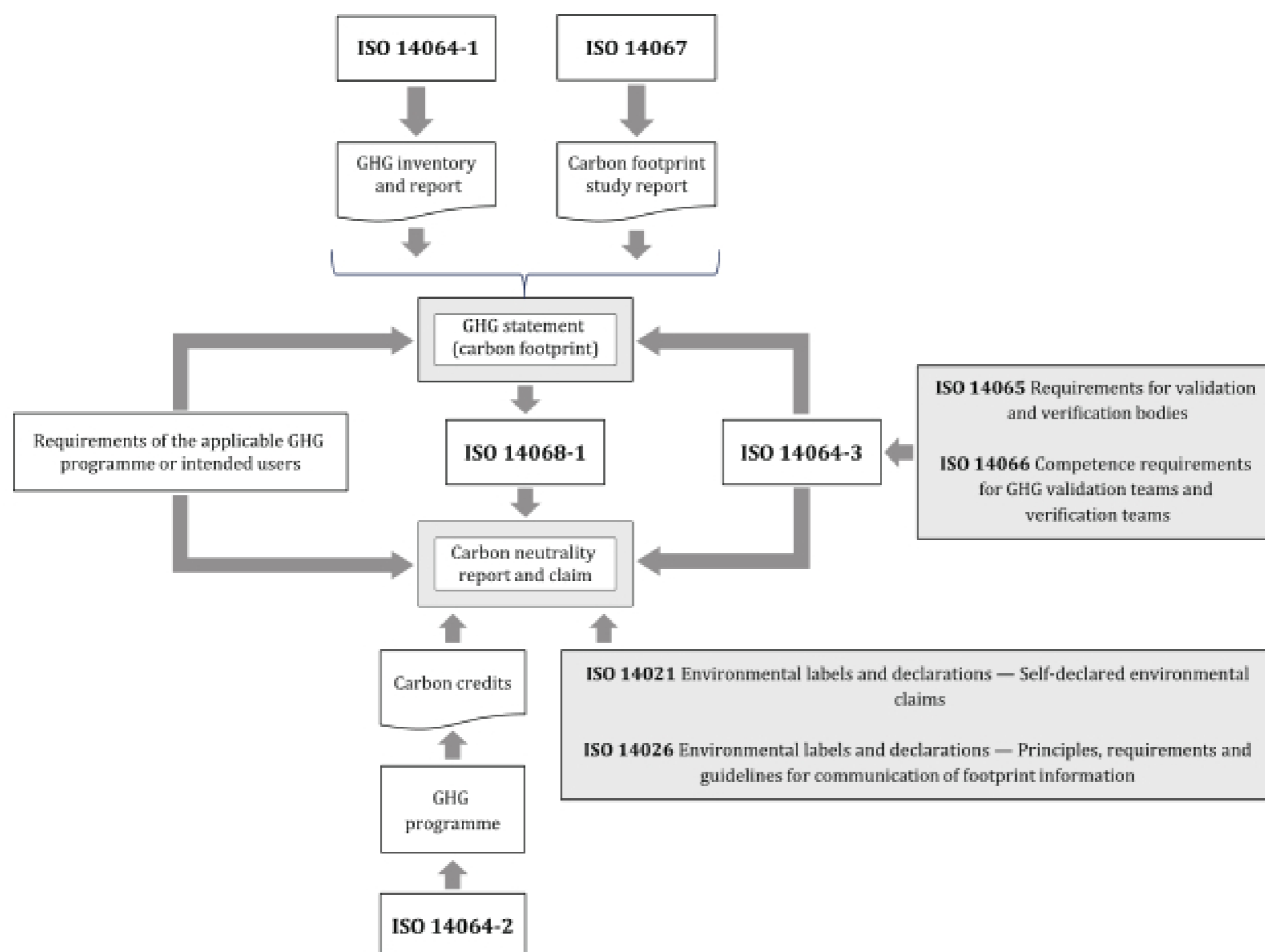


Figure 1 — ISO 14068-1 (this document) in relation to other International Standards

This document provides a standardized approach to achieving and demonstrating carbon neutrality. It is applicable to subjects, i.e. organizations and products (e.g. goods and services, including events and buildings).

The hierarchy approach presented in this document prioritizes actions to reduce the direct and indirect GHG emissions and enhance GHG removals of the subject, with offsetting used only for the carbon footprint remaining after these actions.

Avoided GHG emissions, for example by the use of goods or services, are not addressed in this document but they also have a role to play in the strategy of organizations to support the global objective of carbon neutrality. Avoided GHG emissions reflect the efforts of organizations to provide low-carbon products or solutions.

The quantification, monitoring and reporting related to GHG projects undertaken with the primary purpose of creating GHG emission reductions or GHG removal enhancements are also outside the scope of this document.

Achievement of carbon neutrality by organizations and products entails actions that reduce GHG emissions and enhance GHG removals, and thus can help support countries to fulfil their nationally determined contributions (NDCs) and to meet the goals of the Paris Agreement.^[14]

0.3 Carbon neutrality and net zero GHG emissions

Carbon neutrality (as defined in this document) and net zero GHG emissions are related concepts. At a global scale, these terms are defined by the Intergovernmental Panel on Climate Change (IPCC)²⁾ as

2) The IPCC is the United Nations body for assessing the science related to climate change. <https://www.ipcc.ch/>

being equivalent, both referring to the condition in which anthropogenic GHG emissions are balanced by anthropogenic GHG removals over a specified period. In this document, this condition is referred to as “global net zero GHG emissions”.

At sub-global scale, carbon neutrality is generally used for organizations and products, and achieving carbon neutrality commonly involves offsetting to counterbalance the carbon footprint of the subject. In this document, carbon neutrality is considered as a pathway of continual improvement along which the carbon footprint of the subject is reduced by implementing emissions reduction and removal enhancement activities, and therefore the need for offsetting decreases over time.

At sub-global scale, net zero GHG emissions is generally applied to territories (e.g. a country, a municipality) and to organizations, but not to products. Net zero GHG emissions is defined and assessed differently in different contexts. For organizations, net zero GHG emissions is commonly considered as the condition in which emissions have been reduced such that only residual emissions remain, and offsetting is restricted to removal credits only.

With respect to territories, assessment of net zero GHG emissions considers the emissions and removals under direct control or jurisdiction of the territory, and offsetting is sometimes excluded.

This document does not address requirements or recommendations for net zero GHG emissions at either the global or a sub-global scale.

0.4 General

In this document, the following verbal forms are used:

- “shall” indicates a requirement;
- “should” indicates a recommendation;
- “may” indicates a permission;
- “can” indicates a possibility or a capability.

Climate change management — Transition to net zero —

Part 1: Carbon neutrality

1 Scope

This document specifies principles, requirements and guidance for achieving and demonstrating carbon neutrality through the quantification, reduction and offsetting of the carbon footprint.

This document defines terms used in relation to carbon neutrality and provides guidance on the actions necessary to achieve and demonstrate carbon neutrality. In accordance with common practice, it uses the word “carbon” to refer to all greenhouse gases (GHGs) in compound expressions such as “carbon neutrality”.

It is applicable to a wide range of subjects such as organizations (including companies, local authorities and financial institutions) and products (goods or services, including buildings and events). It is not intended to be used for territories (such as regions, countries, states or cities), including signatories to the United Nations Framework Convention on Climate Change (UNFCCC) when reporting national outcomes for the purposes of that Convention.

This document establishes a hierarchy for carbon neutrality where GHG emission reductions (direct and indirect) and GHG removal enhancements within the value chain take priority over offsetting. It includes requirements for carbon neutrality commitments and making carbon neutrality claims.

This document is GHG programme neutral. If a GHG programme is applicable, the requirements of that GHG programme are additional to the requirements of this document.

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 14064-1, *Greenhouse gases — Part 1: Specification with guidance at the organization level for quantification and reporting of greenhouse gas emissions and removals*

ISO 14064-3, *Greenhouse gases — Part 3: Specification with guidance for the verification and validation of greenhouse gas statements*

ISO 14067, *Greenhouse gases — Carbon footprint of products — Requirements and guidelines for quantification*

3 Terms, definitions and abbreviated terms

For the purposes of this document, the terms and definitions given in ISO 14064-1, ISO 14067 and the following apply.

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

- ISO Online browsing platform: available at <https://www.iso.org/obp>
- IEC Electropedia: available at <https://www.electropedia.org/>

3.1 Terms related to carbon neutrality

3.1.1

carbon neutral

condition in which, during a specified period of time, the *carbon footprint* (3.2.4) has been reduced as a result of *greenhouse gas (GHG) emission reductions* (3.2.3) or *GHG removal enhancements* (3.2.8) and, if greater than zero, is then counterbalanced by *offsetting* (3.3.1)

Note 1 to entry: *Carbon credits* (3.3.2) used for offsetting shall meet certain criteria (see [Clause 11](#)) and are only used after GHG emission reductions and GHG removal enhancements have been made in line with the carbon neutrality management plan.

Note 2 to entry: The specified period of time is a finite number of years, for *organizations* (3.4.3), or the full or partial life cycle, for *products* (3.4.4).

3.1.2

carbon neutrality

state of being *carbon neutral* (3.1.1)

Note 1 to entry: The Intergovernmental Panel on Climate Change (IPCC) distinguishes between carbon neutrality, a condition in which CO₂ emissions are balanced by CO₂ removals, and greenhouse gas (GHG) neutrality, in which all *GHG emissions* (3.2.2) are balanced by *GHG removals* (3.2.7). The definition of carbon neutrality in this document is equivalent to the IPCC definition of GHG neutrality.

3.1.3

carbon neutrality claim

public declaration made by an *entity* (3.4.1) regarding the *carbon neutrality* (3.1.2) of the *subject* (3.4.2)

3.1.4

unabated greenhouse gas emission

unabated GHG emission

GHG emission (3.2.2) of the *subject* (3.4.2) remaining after activities resulting in *GHG emission reductions* (3.2.3) within the *boundary* (3.2.16, 3.2.17) of the subject

Note 1 to entry: Additional information on unabated and *residual GHG emissions* (3.1.5) can be found in [Annex A](#).

Note 2 to entry: Unabated GHG emissions include, but are not limited to, residual GHG emissions.

3.1.5

residual greenhouse gas emission

residual GHG emission

unabated GHG emission (3.1.4) remaining after implementing all technically and economically feasible *GHG emission reductions* (3.2.3)

Note 1 to entry: Additional information on unabated and residual GHG emissions can be found in [Annex A](#).

3.1.6

reporting period

specific historical period selected for the determination of *carbon neutrality* (3.1.2)

Note 1 to entry: The reporting period is specified in the carbon neutrality management plan of the *entity* (3.4.1) and is typically a year, but can be shorter, e.g. in relation to an event that recurs every six months, or longer, such as for agricultural or forest systems, which can involve multi-year management.

3.2 Terms related to greenhouse gases

3.2.1

greenhouse gas

GHG

gaseous constituent of the atmosphere, both natural and anthropogenic, that absorbs and emits radiation at specific wavelengths within the spectrum of infrared radiation emitted by the Earth's surface, the atmosphere and clouds

Note 1 to entry: For a list of GHGs, see the latest Intergovernmental Panel on Climate Change (IPCC) Assessment Report.

Note 2 to entry: The most common anthropogenic GHGs are carbon dioxide (CO₂), methane (CH₄), nitrous oxide (N₂O), hydrofluorocarbons (HFCs), nitrogen trifluoride (NF₃), perfluorocarbons (PFCs) and sulfur hexafluoride (SF₆). Emissions from these gases are reported as *carbon dioxide equivalents* (3.2.12) using *global warming potentials* (3.2.11).

[SOURCE: ISO 14064-1:2018, 3.1.1, modified — Note 2 to entry added.]

3.2.2

greenhouse gas emission

GHG emission

release of a *GHG* (3.2.1) into the atmosphere

[SOURCE: ISO 14064-1:2018, 3.1.5]

3.2.3

greenhouse gas emission reduction

GHG emission reduction

decrease in *GHG emissions* (3.2.2) quantified between two points in time or relative to a *baseline* (3.2.13)

Note 1 to entry: Adapted from ISO 14064-2:2019, 3.1.7.

3.2.4

carbon footprint

sum of *greenhouse gas (GHG) emissions* (3.2.2) and *GHG removals* (3.2.7) of the *subject* (3.4.2) expressed as *carbon dioxide equivalents* (3.2.12)

Note 1 to entry: For a *product* (3.4.4), the carbon footprint is based on a life cycle assessment using the single impact category of climate change in accordance with ISO 14067.

Note 2 to entry: For an *organization* (3.4.3), the carbon footprint is equivalent to the sum of the *direct GHG emissions* (3.2.5), *indirect GHG emissions* (3.2.6) and GHG removals, if applicable, within the *boundary* (3.2.16) of the subject quantified in accordance with ISO 14064-1.

3.2.5

direct greenhouse gas emission

direct GHG emission

GHG emission (3.2.2) within the *boundary* (3.2.16, 3.2.17) of the *subject* (3.4.2), from *GHG sources* (3.2.9) owned or controlled by the *entity* (3.4.1)

[SOURCE: ISO 14064-1:2018, 3.1.9, modified — “within the boundary of the subject” added and “entity” replaced “organization”. Note 1 to entry deleted.]

3.2.6

indirect greenhouse gas emission

indirect GHG emission

GHG emission (3.2.2) that is a consequence of, and within the *boundary* (3.2.16, 3.2.17) of, the *subject* (3.4.2), but that arises from *GHG sources* (3.2.9) that are not owned or controlled by the *entity* (3.4.1)

Note 1 to entry: These emissions occur generally in the upstream and/or downstream *value chain* (3.4.7) of the subject.

[SOURCE: ISO 14064-1:2018, 3.1.11, modified — “and within the boundary of, the subject” replaced “an organization’s operations and activities” and “entity” replaced “organization” in the definition. “value chain of the subject” replaced “chain” in Note 1 to entry.]

3.2.7

greenhouse gas removal

GHG removal

withdrawal of a *GHG* (3.2.1) from the atmosphere by a *GHG sink* (3.2.10)

Note 1 to entry: Examples of ways in which GHG removals can be achieved include reforestation, carbon sequestration in soils, sustainable bioenergy with carbon capture and storage, and direct air carbon capture and storage.

[SOURCE: ISO 14064-1:2018, 3.1.6, modified — “GHG sink” made singular. Note 1 to entry added.]

3.2.8

greenhouse gas removal enhancement

GHG removal enhancement

quantified increase in *GHG removals* (3.2.7) between two points in time or relative to a *baseline* (3.2.13)

Note 1 to entry: Adapted from ISO 14064-2:2019, 3.1.8.

3.2.9

greenhouse gas source

GHG source

process that releases a *GHG* (3.2.1) into the atmosphere

[SOURCE: ISO 14064-1:2018, 3.1.2]

3.2.10

greenhouse gas sink

GHG sink

process that removes a *GHG* (3.2.1) from the atmosphere

Note 1 to entry: A process can be natural or anthropogenic.

[SOURCE: ISO 14064-1:2018, 3.1.3, modified — Note 1 to entry added.]

3.2.11

global warming potential

GWP

index, based on radiative properties of *greenhouse gases (GHGs)* (3.2.1), measuring the radiative forcing following a pulse emission of a unit mass of a given GHG in the present-day atmosphere integrated over a chosen time horizon, relative to that of carbon dioxide (CO₂)

Note 1 to entry: The Intergovernmental Panel on Climate Change (IPCC) publishes and regularly updates GWP values for various time horizons, including 20, 100 and 500 years.

[SOURCE: ISO 14064-1:2018, 3.1.12, modified — Note 1 to entry added.]

3.2.12

carbon dioxide equivalent

CO₂e

unit for expressing the radiative forcing of a *greenhouse gas (GHG)* (3.2.1) in relation to that of carbon dioxide

Note 1 to entry: The carbon dioxide equivalent is calculated by multiplying the mass of a given GHG by its *global warming potential* (3.2.11).

[SOURCE: ISO 14064-1:2018, 3.1.13, modified — “expressing” replaced “comparing” and “in relation to” added in the definition. Note 1 to entry clarified.]

3.2.13

baseline

quantified *greenhouse gas (GHG) emissions* (3.2.2) and/or *GHG removals* (3.2.7) of a *subject* (3.4.2) for a *base period* (3.2.14)

Note 1 to entry: The baseline is used when quantifying changes in the *carbon footprint* (3.2.4) over time and towards targets in the carbon neutrality management plan.

Note 2 to entry: In a case where the base period cannot be determined, e.g. for a one-off event, the baseline can be estimated on the basis of a reference situation that best represents the conditions most likely to occur in the absence of *climate change mitigation* (3.2.15) activities.

3.2.14

base period

specific, historical period identified for the purpose of comparing *greenhouse gas (GHG) emissions* (3.2.2) or *GHG removals* (3.2.7) or other GHG-related information over time

[SOURCE: ISO 14064-1:2018, 3.2.10, modified — “period” replaced “year” in the term.]

3.2.15

climate change mitigation

human intervention to reduce *greenhouse gas (GHG) emissions* (3.2.2) or enhance *GHG removals* (3.2.7)

[SOURCE: ISO Guide 84:2020, 3.1.4, modified — Admitted term “mitigation” deleted.]

3.2.16

boundary

<organization> grouping of *greenhouse gas (GHG) emissions* (3.2.2) or *GHG removals* (3.2.7) reported from within the organizational boundary as well as those significant *indirect GHG emissions* (3.2.6) that are a consequence of the *organization’s* (3.4.3) operations and activities

Note 1 to entry: “Organizational boundary” and “significant indirect GHG emissions” are defined in ISO 14064-1.

Note 2 to entry: In this document, the term “boundary” is equivalent to “reporting boundary” in ISO 14064-1.

[SOURCE: ISO 14064-1:2018, 3.4.8 modified — “reporting” removed from the term. Domain <organization> added. Notes 1 and 2 to entry added.]

3.2.17

boundary

system boundary

<product> set of criteria representing which unit processes are a part of the product system under study

Note 1 to entry: “Unit process” and “product system” are defined in ISO 14067.

Note 2 to entry: In this document, the term “boundary” is equivalent to “system boundary” in ISO 14067.

[SOURCE: ISO 14067:2018, 3.1.3.4, modified — Reference to “boundary based on” removed. “product system” replaced “system”. Notes 1 and 2 to entry added.]

3.3 Terms related to offsetting and carbon credits

3.3.1

offsetting

counterbalancing of the *carbon footprint* (3.2.4), by retiring a *carbon credit(s)* (3.3.2)

Note 1 to entry: The final step in the process of offsetting is to retire the carbon credits in a *public registry* (3.3.5) by, or on behalf of, the *entity* (3.4.1). Some registries use “to cancel” as synonymous with “to retire” and the terms are effectively interchangeable. The two terms “retire” and “cancel” result in the same outcome of ensuring that the carbon credits cannot be used again or be further traded.

3.3.2

carbon credit

greenhouse gas credit

GHG credit

tradeable certificate representing one tonne of *carbon dioxide equivalent* (3.2.12) from *GHG emission reductions* (3.2.3) or *GHG removal enhancements* (3.2.8)

Note 1 to entry: An *entity* (3.4.1) can retire a carbon credit without using it for *offsetting* (3.3.1).

Note 2 to entry: Carbon credits can be of different types: avoidance credits, reduction credits or removal credits.

Note 3 to entry: Carbon credits used for *carbon neutrality claims* (3.1.3) are generated outside the *boundary* (3.2.16, 3.2.17) of the *subject* (3.4.2).

3.3.3

greenhouse gas programme

GHG programme

voluntary or mandatory international, national or subnational system or scheme that registers, accounts or manages *GHG emissions* (3.2.2), *GHG removals* (3.2.7), *GHG emission reductions* (3.2.3) or *GHG removal enhancements* (3.2.8)

[SOURCE: ISO 14064-1:2018, 3.2.8, modified — “outside the organization or GHG project” removed.]

3.3.4

carbon crediting programme

greenhouse gas (GHG) programme (3.3.3) that issues *carbon credits* (3.3.2)

Note 1 to entry: The carbon credits shall conform to the criteria established by the programme as well as the requirements of this document (see [Clause 11](#)).

3.3.5

public registry

information system that makes available to *stakeholders* (3.4.5) details of *carbon credits* (3.3.2) issued

Note 1 to entry: A public registry includes the serial numbers, ownership and retirement status of carbon credits.

Note 2 to entry: A public registry can be maintained by a *carbon crediting programme* (3.3.4) or by a third party.

3.4 Terms related to the entity seeking carbon neutrality

3.4.1

entity

organization (3.4.3) that is seeking to achieve and demonstrate *carbon neutrality* (3.1.2) for the *subject* (3.4.2)

Note 1 to entry: The entity and the subject can be identical, e.g. a company that is seeking carbon neutrality for all its operations.

Note 2 to entry: There can be *greenhouse gas (GHG) emissions* (3.2.2) associated with the subject from *GHG sources* (3.2.9) that are not under the operational or financial control of the entity.

Note 3 to entry: An entity may be responsible for several subjects, such as where a company is seeking carbon neutrality for different *products* (3.4.4) that it manufactures.

Note 4 to entry: In this document, the term “entity” is equivalent to “responsible party” in ISO 14064-1:2018: 3.4.3, and “organization” in ISO 14067:2018, 3.1.5.1.

3.4.2

subject

organization (3.4.3) or *product* (3.4.4)

Note 1 to entry: The *entity* (3.4.1) is committed to reduce the *carbon footprint* (3.2.4) of the subject as part of the carbon neutrality management plan.

3.4.3 organization

person or group of people that has its own functions with responsibilities, authorities and relationships to achieve its objectives

Note 1 to entry: The concept of an organization includes, but is not limited to sole-trader, company, corporation, firm, enterprise, authority, partnership, charity or institution, or part or combination thereof, whether incorporated or not, public or private (e.g. foundation, union, association, public administration, intergovernmental agency).

Note 2 to entry: A group of organizations can also be considered as an organization that has, alone or collectively, its own objectives.

[SOURCE: ISO 14064-1:2018, 3.4.2, modified — Examples added in Note 1 to entry. Note 2 to entry added.]

3.4.3.1 financial institution

organization (3.4.3) that is principally engaged in financial intermediation and/or in auxiliary financial activities

Note 1 to entry: Typically, the activity of a financial institution is the acquisition of financial assets while incurring liabilities on its own account by engaging in financial transactions in a market for the purposes of providing payment, securities, banking, financial, insurance or investment services or activities. A financial organization is typically:

- a) licensed by, authorized by or registered with a financial market regulator;
- b) subject to supervision by a financial market regulator;
- c) an international, supranational, intergovernmental or national governmental body or institution that as a main activity engages in payment, securities, banking, financial, insurance or investment services or activities (including central banks).

Note 2 to entry: Information about *carbon neutrality* (3.1.2) for financial institutions is given in [Clause B.3](#).

[SOURCE: ISO 9362:2022, 3.1, modified — “shall be” in Note 1 to entry changed to “is typically”. Note 2 to entry added.]

3.4.4 product

goods or service

EXAMPLE Services include transport, events, financial services and investments; goods include manufactured goods, computer software, processed material, unprocessed material, buildings and other types of construction works.

[SOURCE: ISO 14067:2018, 3.1.3.1, modified — Notes 1 and 2 to entry deleted. Example added.]

3.4.5 stakeholder

interested party

person or *organization* (3.4.3) that can affect, be affected by, or perceive itself to be affected by a decision or activity

EXAMPLE Consumers, customers, communities, suppliers, regulators, non-governmental organizations, investors, employees.

Note 1 to entry: The decision or activity is undertaken by the *entity* (3.4.1).

[SOURCE: ISO 14001:2015, 3.1.6, modified — “stakeholder” added as the preferred term. “Consumers” added in example. Note 1 to entry added and the original note deleted.]

3.4.6 top management

person or group of people who directs and controls an *entity* (3.4.1) at the highest level

Note 1 to entry: Top management has the power to delegate authority and provide resources within the entity.

[SOURCE: ISO 14001:2015, 3.1.5, modified — “entity” replaced “organization” in the definition and in Note 1 to entry. Note 2 to entry deleted.]

3.4.7 value chain

entire sequence of activities or parties that provide or receive value

Note 1 to entry: Parties that provide value include suppliers, outsourced workers and contractors.

Note 2 to entry: Parties that receive value include customers, consumers, clients and other users.

Note 3 to entry: For a *product* (3.4.4), the value chain includes its full life cycle including the end of life.

Note 4 to entry: For an *organization* (3.4.3), the value chain includes its upstream and downstream activities.

[SOURCE: ISO 26000:2010, 2.25, modified — “in the form of products or services” deleted in the definition. “members” deleted in Note 2 to entry. Notes 3 and 4 to entry added.]

3.4.8 documented information

information required to be controlled and maintained by an *entity* (3.4.1) on behalf of its *subject* (3.4.2), and the medium on which it is contained

Note 1 to entry: Documented information can be in any format and media and from any source.

Note 2 to entry: Documented information can refer to:

- information created in order for the entity to operate (documentation);
- evidence of results achieved (record).

3.5 Abbreviated terms

CO ₂ e	carbon dioxide equivalent
GHG	greenhouse gas
GWP	global warming potential
IPCC	Intergovernmental Panel on Climate Change

4 Principles

4.1 General

Application of these principles is fundamental to ensure that the achievement and demonstration of the carbon neutrality of the subject is undertaken in a true and fair manner, is scientifically and technically valid, and is communicated in an accurate and non-misleading way. The principles are the basis for the requirements and guidance in this document.

4.2 Transparency

Relevant information is disclosed publicly to enable stakeholders to understand all statements concerning a commitment to, and achievement of, carbon neutrality and to make decisions with reasonable confidence.

4.3 Conservativeness

Assumptions, values and procedures involved in achieving and demonstrating carbon neutrality ensure that the current status and progress are not overstated.

4.4 Hierarchy approach

Carbon neutrality is primarily achieved through GHG emission reductions, then GHG removal enhancements within the boundary of the subject, before offsetting.

4.5 Supporting transition

Carbon neutrality takes account of the need for sustainable development and the urgent need to transition away from activities that generate significant GHG emissions and is not used to perpetuate “business as usual”.

4.6 Ambition

Entities make choices about the subject, their GHG emission and GHG removal targets, and the use of offsetting that represent a high level of ambition in contributing to the achievement of global net zero GHG emissions.

NOTE Global net zero GHG emissions occur when global anthropogenic GHG emissions are counterbalanced by global anthropogenic GHG removals over a specified period.

More information on ambition can be found in [Annex D](#).

4.7 Urgency

Immediate and ongoing action is taken to contribute to the achievement of global net zero GHG emissions.

Interim targets are set to achieve substantial reductions of GHG emissions in the short term (typically of 5 years to 10 years) and subsequent targets support ongoing action in the long term.

NOTE A common date for long-term targets is 2050.

4.8 Science-based approach

The carbon neutrality pathway and carbon neutrality management plan are based on the latest climate science (e.g. IPCC reports).

Decisions are reviewed regularly, and targets, policies and actions are adapted as knowledge and science evolves.

4.9 Avoiding adverse impacts

Measures or activities contributing to carbon neutrality minimize adverse impacts on the environment and society.

4.10 Accountability

Accountability for achieving and demonstrating a carbon neutrality claim lies with the top management of the entity that controls the subject and makes the claim.

4.11 Value chain and life cycle approach

Determination of carbon neutrality includes GHG emissions and GHG removals within the whole value chain of the subject, including upstream and downstream processes.

5 Approach

5.1 Framework

This document defines a framework for achieving and demonstrating carbon neutrality. The entity shall follow the steps in [Figure 2](#).

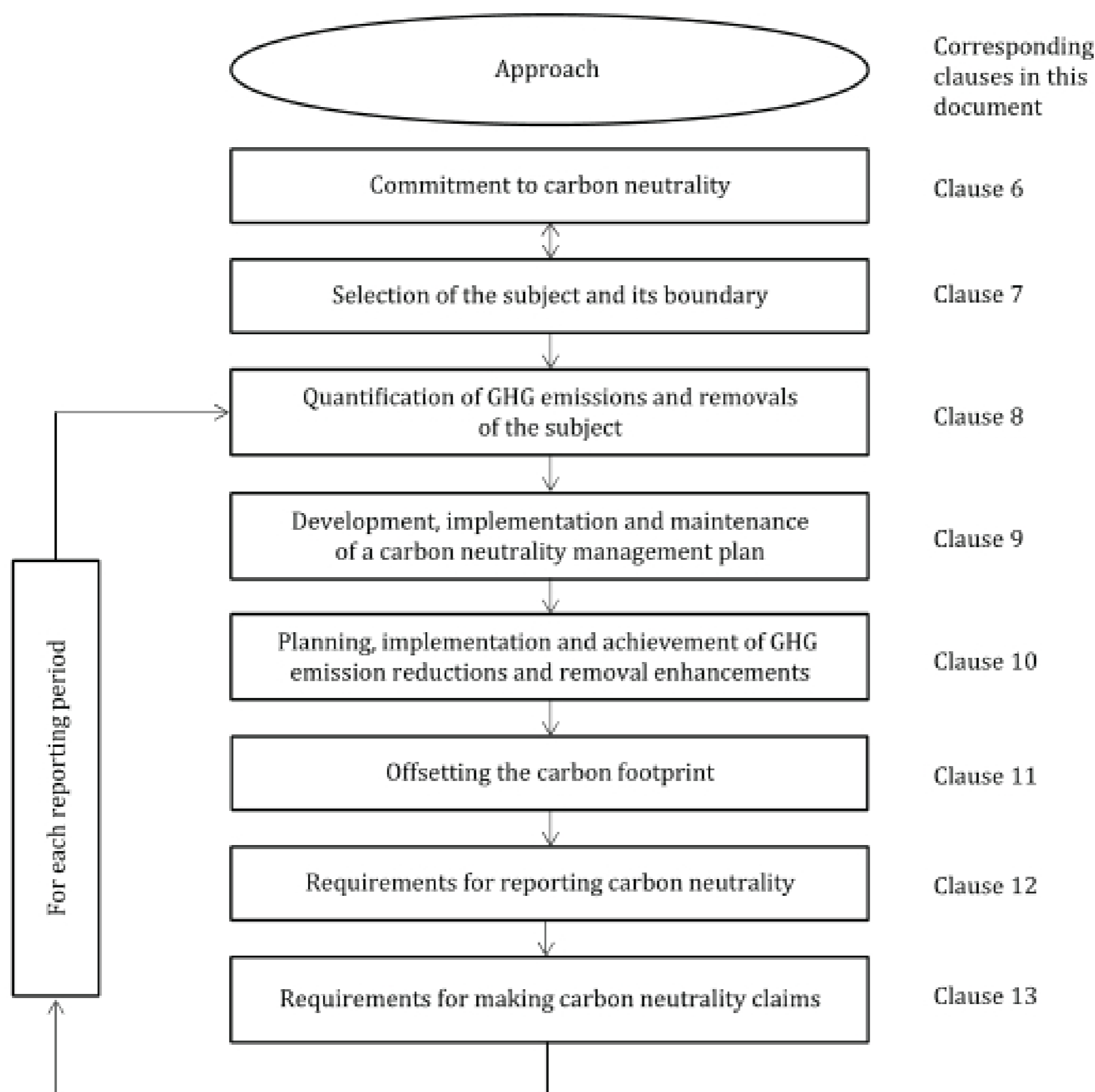


Figure 2 — Framework for carbon neutrality

5.2 Carbon neutrality management hierarchy

In line with the hierarchy approach (4.4), the entity shall implement measures to achieve carbon neutrality using the following hierarchy of actions, in order of preference:

- a) GHG emission reductions within the boundary of the subject;
- b) GHG removal enhancements within the boundary of the subject;
- c) offsetting the carbon footprint.

The carbon neutrality management plan shall follow a continual improvement approach to reduce the use of offsetting over time.

5.3 Carbon neutrality pathway

The entity shall determine a carbon neutrality pathway that describes the ambition of the entity with respect to the trajectory to minimize the carbon footprint of the subject. The carbon neutrality pathway shall include short- and long-term targets with specified dates, as well as a target year by which only residual GHG emissions will remain.

NOTE 1 Short-term is typically 5 years to 10 years, long-term is typically at least 20 years. A common target year by which only residual GHG emissions will remain is 2050.

The carbon neutrality pathway shall be based on a commonly accepted science-based pathway, if applicable, adapted as necessary to take into account sectoral pathways and the specific characteristics and context of the subject.

NOTE 2 Commonly accepted science-based pathways are provided, for instance by the Intergovernmental Panel on Climate Change (IPCC), the International Energy Agency (IEA), the Assessing low-Carbon Transition (ACT), the Science Based Targets Initiative (SBTi).

The entity shall devise a carbon neutrality management plan (see [Clause 9](#)) that enables achievement of the carbon neutrality pathway.

An example of a carbon neutrality pathway is shown in [Figure 3](#). Carbon neutrality pathways are described in [Annex A](#).

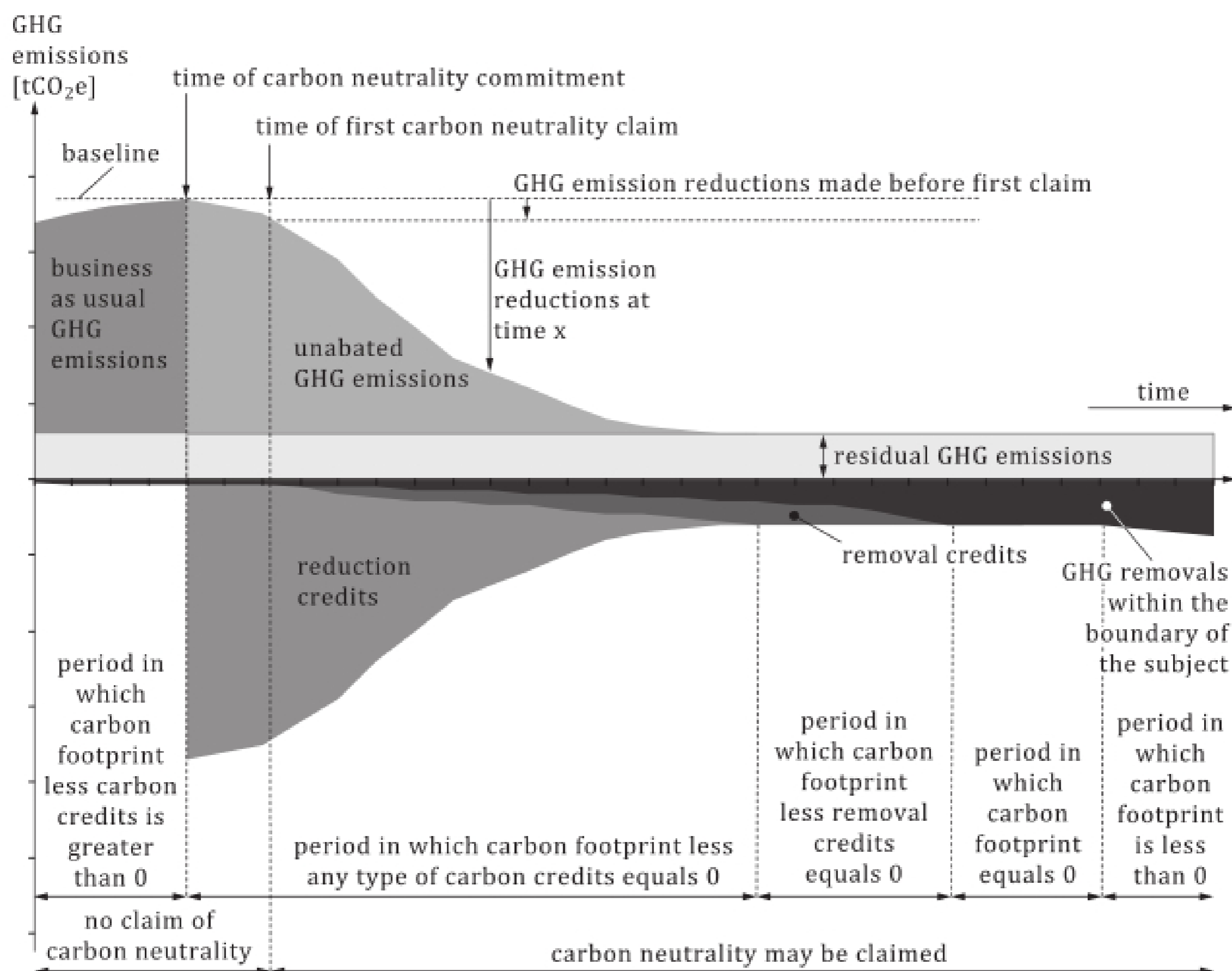


Figure 3 — Example of a carbon neutrality pathway

5.4 Documented information

This document draws a distinction between documented information and reporting (see [Clause 12](#)). The entity shall establish and maintain procedures for document retention and record keeping.

The entity shall establish documented procedures for maintaining and retaining documented information including retention, storage and preservation. Documented information that is to be retained shall be stored and preserved in an appropriate format or medium.

The entity shall maintain documented information supporting any carbon neutrality claim. Documented information shall be handled in accordance with the entity's GHG documented information procedure.

Requirements and guidance about documented information can be found in the subclauses on the selection of the subject and its boundary (see [7.2](#)), quantification of GHG emissions and removals (see [8.2](#)), the carbon neutrality management plan (see [9.4](#)), GHG emission reductions and removal enhancements (see [10.3](#)), and offsetting the carbon footprint (see [11.4](#)).

6 Commitment to carbon neutrality

Top management of the entity shall establish, document, implement, demonstrate and maintain a commitment to carbon neutrality that:

- a) includes a statement of commitment from top management (see [9.1](#));

- b) provides a framework for setting a carbon neutrality pathway, and achieving and maintaining carbon neutrality;
- c) is appropriate to the purpose and context of the entity, including the nature, scale, and GHG emissions and removals of its activities and products;
- d) identifies the scope and boundary of the subject to be addressed by the carbon neutrality management plan (see [Clause 9](#));
- e) establishes a carbon neutrality management team, including a top management representative;
- f) ensures that the carbon neutrality management plan is integrated into the entity's various levels of governance and business processes including, if applicable, its Environmental Management System and its investments;
- g) ensures that the strategic direction of the entity is compatible with its carbon neutrality management plan;
- h) ensures that the resources needed to implement the carbon neutrality management plan are available;
- i) communicates the importance of reducing GHG emissions in accordance with the carbon neutrality management plan internally, within the entity's value chain, and to stakeholders;
- j) ensures continual improvement (see [5.2](#)), under which GHG emissions are reduced towards a residual level and GHG removal enhancements, if applicable, are increased over time and the use of offsetting is minimized;
- k) ensures that significant negative effects of the carbon neutrality management plan on the environment and society are taken into account.

7 Selection of the subject and its boundary

7.1 General

Any entity intending to demonstrate achievement of carbon neutrality in accordance with this document shall identify the subject of the carbon neutrality claim and take into consideration all activities and processes significant to the subject when selecting its boundary.

The scope and boundary shall be established in accordance with ISO 14064-1 for organizations and ISO 14067 for products or other principles and requirements which are consistent with these standards. In this document, the term "boundary" is equivalent to "reporting boundary" in ISO 14064-1 and "system boundary" in ISO 14067. If an entity chooses criteria different from those given in ISO 14064-1 and ISO 14067, the entity shall explain why, and justify how, the chosen criteria are consistent with those in the respective International Standards.

If the subject comprises only a part of the entity's activities, the entity shall document and include in the carbon neutrality report the rationale for the selection of the subject and describe the activities that the entity undertakes that are outside the boundary of the subject.

The selection of the subject shall be based on a broader understanding of the entire carbon footprint of the entity so that the carbon footprint of the selected subject can be seen in context. This contextualization shall be documented.

If a significant change to a subject occurs, the entity shall select a new boundary as appropriate.

[Annex B](#) provides requirements for specific subjects.

7.2 Documented information

The entity shall document the justification(s) for the selection of the subject and its boundary.

8 Quantification of greenhouse gas (GHG) emissions and GHG removals

8.1 Quantification

The entity shall identify and quantify GHG emissions and GHG removals of the subject (i.e. its carbon footprint) following the principles, requirements and guidance set out in ISO 14064-1 for organizations and ISO 14067 for products, as appropriate, or other principles and requirements which are consistent with these standards.

If an entity chooses criteria different from those given in ISO 14064-1 and ISO 14067, the entity shall explain in the carbon neutrality report why, and justify how, the chosen criteria are consistent with those in the respective International Standards.

[Annex C](#) provides comparisons between ISO 14064-1 and the GHG Protocol Corporate Standards^[17] and between ISO 14067 and the GHG Protocol Product Standard^[19] for products.

NOTE 1 The "GHG Protocol Corporate Accounting and Reporting Standard"^[17] and the "GHG Protocol Corporate Value Chain (Scope 3) Standard"^[18] are considered to be consistent with ISO 14064-1 if the corresponding Scope 3 categories are part of the footprint and a life cycle approach is used for all categories. The GHG Protocol Product Life Cycle Accounting and Reporting Standard^[19] is considered to be consistent with ISO 14067 if biogenic carbon is reported separately (see [Annex C](#)).

If a market-based approach for the GHG emissions related to the use of electricity is used for quantification and to develop the carbon neutrality management plan, the entity shall report GHG emissions quantified using both market-based and location-based approaches in the carbon neutrality report. More information on the use of market-based and location-based emission factors is given in [Clause B.4](#).

GHG emission reductions and GHG removals within the boundary of the subject that are transferred as carbon credits to another entity shall be excluded from the subject's carbon footprint to avoid double counting or double claiming.

[Annex B](#) provides requirements for specific subjects, including requirements and guidance on how financial institutions shall account for carbon neutrality in their investments.

NOTE 2 Financial institutions include banks, asset managers, fund managers, private equity firms and others.

8.2 Documented information

The entity shall document the selection of the subject and its boundary and the GHG emissions and GHG removals associated with the subject, including:

- a) the quantification methodology used to define the subject and the GHG emissions and GHG removals associated with the subject;
- b) the rationale for the selection of the methodology chosen including all assumptions made in defining the boundary and for determining which GHG emissions and GHG removals to include;
- c) confirmation that the selected methodology was applied in accordance with its provisions and that the requirements set out in [8.1](#) were met;
- d) details of, and the rationale for, the exclusion of any GHG emissions or GHG removals;
- e) details of any GHG emission reductions or GHG removals within the boundary of the subject that have been transferred as carbon credits;
- f) identification of uncertainties and variability associated with defining the boundary.

9 Carbon neutrality management plan

9.1 Content of carbon neutrality management plan

The entity shall establish, implement and maintain a carbon neutrality management plan for the subject that includes:

- a) a statement from top management of the entity's commitment to carbon neutrality for the subject, identifying those responsible for the implementation of the carbon neutrality management plan;
- b) a description of the subject and its boundary;
- c) a timescale for implementing the carbon neutrality management plan, and achieving and maintaining carbon neutrality;
- d) the base period and the target year by which only residual GHG emissions will remain, including the rationale for the timing;
- e) the baseline;
- f) the methodology used for the carbon footprint quantification;
- g) the carbon neutrality pathway including short- and long-term targets related to GHG emission reductions and GHG removal enhancements for the subject which shall be appropriate to the time scale for reaching only residual emissions [see (9.1 d)];
- h) the type of GHG emission reduction targets (absolute or intensity, or both – see 10.1);
- i) activities foreseen to achieve and maintain GHG emission reductions, including the nature of the GHG emission reductions, assumptions made, and rationale for, the techniques and measures to be implemented to reduce GHG emissions;
- j) activities foreseen to maintain and enhance GHG removals, including the nature of the removals and rationale;
- k) the intended quantity of each type of carbon credit to be used;
- l) indicators for monitoring and evaluating the effectiveness of the carbon neutrality management plan;
- m) proposed safeguards for avoiding adverse impacts on the environment and society.

The carbon neutrality management plan should also include a description of the financial and human resources available and needed, including who is responsible for the delivery of the carbon neutrality management plan, if delegated.

9.2 Ambition

The entity shall assess the level of ambition of its carbon neutrality management plan with regard to:

- a) the carbon neutrality pathway and its relation to global or national climate policy objectives;
- b) the capacity and responsibility of the entity to act;
- c) changes in response to new climate science information.

The entity shall demonstrate continual improvement of the carbon footprint until only residual GHG emissions remain. This may be demonstrated as a reduction in each consecutive reporting period, or it may be non-linear with multiple step changes and plateaus. Once residual GHG emissions have been reached, this condition shall be maintained.

The entity should also address other aspects about ambition; more information about levels of ambition is included in [Annex D](#).

9.3 Evaluation and revision of the carbon neutrality management plan

The entity shall, at periods specified and justified in the carbon neutrality management plan, and whenever necessary, evaluate the effectiveness of the carbon neutrality management plan and implement corrective actions where appropriate to ensure that the targets are met.

NOTE Examples of reasons to revise the carbon neutrality management include:

- new scientific information indicates a need for revision;
- a change in the technical, economic or social contexts;
- a significant change to the subject;
- significant changes occur in the entity's structure (due to reorganizations, mergers/acquisitions, divestitures or closures) that impact the carbon neutrality management plan;
- as a result of corrective actions;
- a situation occurs that requires re-calculation of the baseline which impacts the carbon neutrality plan.

Revisions to the plan should also identify any historical changes to targets, methodology and the boundary of the subject since the initial commitment to carbon neutrality.

9.4 Documented information

The entity shall document all contents of the carbon neutrality management plan listed in [9.1](#), as well as information about the level of ambition of the plan and the schedule for reviewing the plan.

The entity shall document the explanation and rationale for the choices made about its ambition. If the emissions targets of the subject differ from those aligned to widely recognized science-based targets, the reasons for different emission reductions shall be documented.

The entity shall document how its carbon neutrality management plan takes into account:

- a) a science-based approach;
- b) climate change mitigation potential from a technical, economic and social perspective;
- c) international and national policy commitments;
- d) sectoral context (e.g. voluntary sectoral commitments, cross-sectoral effects, sectoral transition plans).

10 Greenhouse gas (GHG) emission reductions and GHG removal enhancements

10.1 Greenhouse gas (GHG) emission reductions

In line with the hierarchy principle (see [4.4](#)), the entity shall give priority to reducing GHG emissions within the boundary of the subject by measures such as:

- changes in consumption (e.g. via efficiency gains, eliminating activities, more circular business models);
- application of emission reduction technologies (e.g. end of pipe carbon capture);
- substitution (e.g. to low carbon materials, electricity or fuels).

NOTE 1 Reference to “low carbon” in this context is intended to represent materials, electricity or fuels that emit fewer GHGs per unit compared to other materials, sources of electricity or types of fuel.

The entity shall plan, implement and achieve a reduction of GHG emissions of the subject in either absolute or intensity terms before claiming carbon neutrality. If calculated in intensity terms, the entity shall justify how the subject reduces absolute global GHG emissions in the long term. The GHG emission reductions shall be in accordance with a relevant sector pathway, if available.

NOTE 2 GHG emission reductions can include efficiency improvements, and the substitution of fuels or materials, for example with low-carbon alternatives, among others.

NOTE 3 Absolute reductions are defined as a decrease in the total quantity of GHGs emitted. Reduction in the intensity of GHG emissions is defined as a decrease in GHG emissions per unit of output, expressed as a production volume, cost or revenue.

The entity shall always quantify the absolute emissions reductions of the subject, whichever approach is applied, and shall apply the selected approach consistently. The entity shall assess significant adverse impacts of the subject’s GHG emission reduction activities on the environment and society. The entity should take appropriate measures to minimize significant adverse impacts.

The decision to base GHG emission reductions on an intensity metric or absolute metric shall be justified and documented. The methodology chosen to calculate GHG emission reductions shall be used consistently for each reporting period.

NOTE 4 An entity that provides a product that supports a wider transition to a low carbon economy (an enabling technology) can occasionally report increasing absolute emissions, but decreasing emissions on an intensity basis. An example of an enabling technology is a provider of renewable energy services which significantly reduce GHG emissions per unit of energy generated.

GHG emission reductions should meet or exceed the reduction targets in the entity’s carbon neutrality management plan.

Next in the hierarchy, the entity shall prioritize GHG removal enhancements within the boundary of the subject (e.g. through biological, chemical or physical processes).

10.2 Greenhouse gas (GHG) removal enhancements

When the carbon neutrality management plan includes GHG removal enhancements within the boundary of the subject (see 5.2), the entity shall ensure that they are real. The entity should take appropriate measures to minimize significant adverse impacts to the environment or society.

The entity shall monitor all GHG removals, and if a GHG removal within the boundary of the subject is reversed in a subsequent carbon neutrality reporting period, it shall count as a GHG emission in the reporting period in which the reversal occurred.

The entity declaring carbon neutrality shall specify the period for which any GHG removal enhancements are achieved in relation to the baseline of the subject.

GHG removal enhancements should meet or exceed the removal targets in the entity’s carbon neutrality management plan.

10.3 Documented information

The entity shall document and maintain information about the GHG emission reductions and GHG removal enhancements within the boundary of the subject measured against a baseline in each reporting period including:

- a) quantification of GHG emission reductions and GHG removal enhancements for each GHG source and sink, and each relevant GHG, according to the activities implemented during each reporting period;
- b) GHG emission reductions resulting from divestments or closures;

- c) changes in the level of production or sales, changes in the quantification methodology and changes to emission factors;
- d) total achieved GHG emission reductions and removal enhancements benchmarked against the subject's baseline(s) (absolute or intensity, or both);
- e) any reversals of GHG removals that have occurred;
- f) evidence to demonstrate the implementation of the GHG reduction or GHG removal enhancement.

EXAMPLE Equipment or fuel purchase invoices, installation or maintenance reports, photographs, videos.

11 Offsetting the carbon footprint

11.1 General

If offsetting is needed to achieve carbon neutrality, the entity shall purchase and retire carbon credits for the reporting period. Entities shall not claim carbon neutrality using carbon credits that have already been used by another party.

The entity shall reduce GHG emissions, and then implement GHG removals within the boundary of the subject before offsetting unabated GHG emissions in line with the carbon neutrality management plan. The reasons for not taking further actions to reduce GHG emissions or enhance GHG removals shall be justified and documented.

When claiming carbon neutrality using carbon credits, entities shall avoid double counting, such that no other entity may claim the same tonne of emission reduction or removal enhancement. This applies to avoidance of double counting between multiple entities as well as between entities and governments.

NOTE The application of corresponding adjustments in accordance with the Paris Agreement:2015, Article 6, paragraph 4^[14] provides avoidance of double counting between private entities and governments (e.g. towards the NDCs of a GHG project's host country).

The entity may choose not to offset GHG emissions that have already been offset by other parties in the value chain using carbon credits which are consistent with the requirements of this document. Where GHG emissions have been offset by another party, this shall be documented.

Carbon credits used for offsetting shall fulfil all criteria included in [11.2](#). The carbon footprint when only residual GHG emissions remain, should only be offset using carbon credits based on GHG removal enhancements.

Contracted, future GHG emission reductions and GHG removal enhancements are encouraged as a way to promote early financing for projects that reduce GHG emissions or remove GHGs. However, they shall not be used for carbon neutrality claims or declarations until the climate change mitigation is certified, carbon credits issued and subsequently retired.

In order to achieve the status of carbon neutrality of the subject for the reporting period, the entity shall determine and retire the quantity of carbon credits equivalent to the carbon footprint of the subject.

11.2 Criteria for carbon credits

The entity shall only source carbon credits generated from GHG emission reductions or GHG removal enhancements that are:

- a) real GHG emission reductions or real GHG removal enhancements;
- b) additional, demonstrated using a robust assessment that shows the activity would not have occurred in the absence of the GHG project and represents climate change mitigation that exceeds regulatory requirements and business as usual;

NOTE 1 Additional activities generate GHG emission reductions and/or GHG removal enhancements beyond those which would have occurred without the incentives provided by a carbon crediting programme.

- c) measurable, in accordance with approved carbon crediting programme methodologies for the calculation of relevant GHG baselines and for the conservative estimation of either GHG emission reductions or removal enhancements, or both;

NOTE 2 Quantification of GHG reductions and GHG removal enhancements and calculation of GHG baselines for GHG projects are described in ISO 14064-2.

- d) permanent, or shall be issued by a carbon crediting programme that has adequate safeguards in place to ensure that the risk of reversal is minimized and that, if any reversal occurs, a mechanism is in place that guarantees that equivalent removal will be delivered;
- e) certified.

Entities shall only use carbon credits for which the end of the vintage is no more than five years prior to the start of the period for which the entity is claiming carbon neutrality.

Carbon credits used to achieve carbon neutrality shall be retired no later than 12 months after the end of the reporting period.

Only carbon credits that represent GHG emission reductions or GHG removals that have already occurred may be used for a claim of carbon neutrality. These are usually referred to as “ex-post carbon credits” in the carbon market.

11.3 Criteria for carbon crediting programmes

Where the entity sources carbon credits, the entity shall ensure that those carbon credits are generated under carbon crediting programmes that:

- a) are transparent, with publicly available documented information on the carbon crediting programme project cycle, including registration and verification requirements and procedures;
- b) provide safeguards with regards to impacts on ecosystems, biodiversity, communities, human well-being, human rights and local economies, to avoid adverse impacts where applicable;
- c) identify any Sustainable Development Goals^[15] to which each GHG project contributes;

NOTE 1 Sustainable development co-benefits can be included in the description of the GHG project.

- d) provide information about the governance arrangements which sets out the roles and responsibilities of the organization administering the carbon crediting programme;
- e) include stakeholder consultation requirements and processes for the development of rules and procedures, methodologies, tools and for GHG projects;
- f) have independent verification of GHG emission reductions or removal enhancements enabling issuance of carbon credits;
- g) issue carbon credits that are:
 - 1) listed in a public registry that provides transparent and traceable information concerning the carbon credit’s ownership and status (e.g. unsold, transferred, retired);
 - 2) issued with unique serial numbers;
 - 3) issued under procedures that provide for their permanent retirement;

- 4) traceable back to the relevant GHG project;
- h) have measures for avoiding double counting, e.g. where a GHG emission reduction or GHG removal enhancement is claimed by more than one entity, and for avoiding double claiming between entities and national governments;
- i) have measures to minimize the risk of leakage.

NOTE 2 Leakage refers to the unintended increase in GHG emissions or shifting of GHG emissions from one place to another due to the creation of a GHG project.

11.4 Documented information

The entity shall identify and document:

- a) the carbon crediting programmes and GHG projects and the methodology(ies) used to generate the carbon credits used for offsetting;
- b) the specific GHG project(s) that generated the carbon credits, including the GHG project's location;
- c) the number of carbon credits obtained from each GHG project;
- d) information about the year in which GHG emission reductions or GHG removal enhancements occurred and the year in which the carbon credits were issued (i.e. the "vintage" of the carbon credits);
- e) evidence that the carbon credits have been retired, including a link to the registry in which the retirements have been made in the name of the entity claiming carbon neutrality and the serial numbers of the carbon credits that have been retired in the name of the entity claiming carbon neutrality.

12 Carbon neutrality report

The entity shall make a carbon neutrality report publicly available for each reporting period and it shall include the following information:

- a) a description of the subject and its boundary;
- b) the rationale for the selection of the subject where the subject comprises only a part of the entity's activities and how it relates to the whole activity of the entity;
- c) elements of the carbon neutrality management plan, including targets, reduction strategy and the target year by which only residual GHG emissions remain;
- d) the period to which the report corresponds;
- e) whether there are still unabated GHG emissions in excess of residual GHG emissions;
- f) a description of the carbon neutrality pathway for the subject and where the reporting period stands within this pathway;
- g) the selected baseline, related base period and the carbon footprint for that baseline including an explanation of any change in the baseline;
- h) the carbon footprint of the subject and its components (see [8.1](#)).

NOTE The components of the carbon footprint in this document are equivalent to the GHG values in the carbon footprint of a product study report in ISO 14067 and can be found in the GHG report content in ISO 14064-1.

- i) where there are significant aviation or shipping activities, whether or not non-GHG climate impacts (such as those arising from water vapour, contrails, soot and black carbon) have been included in the carbon footprint and, if so, the GWP multiplier(s) used;
- j) GHG removals within the boundary of the subject;
- k) if there has been a significant GHG removal reversed, the GHG emissions created by the reversal;
- l) justification of any exclusions from the quantification of the carbon footprint;
- m) a reference to carbon footprint quantification methodology, including the justification for its selection;
- n) an explanation and justification of any change to the quantification methodology used in previous reporting periods;
- o) the reference source or documented information of the GHG emission and removal factors used;
- p) the impact of uncertainties on the accuracy of the quantified GHG emissions and removals;
- q) a description of the GHG emission reductions and GHG removal enhancements over the reporting period, how they were achieved, and their alignment with the carbon neutrality management plan and, where applicable, national and international climate policy objectives;
- r) the carbon crediting programmes and GHG projects, and type of GHG project and associated methodologies used to generate the carbon credits used for offsetting;
- s) the number of carbon credits used by registry and type, including their unique serial numbers;
- t) disclosure of whether or not corresponding adjustments have been applied to the carbon credits that have been purchased;
- u) confirmation that the carbon credits used originate from carbon crediting programmes that are consistent with the criteria in [11.2](#) and [11.3](#);
- v) the time period over which the carbon credits have been generated and their date of retirement;
- w) the verification opinion;
- x) explanation about how carbon neutrality will be achieved and maintained in the future.

13 Carbon neutrality claims

A carbon neutrality claim shall be made only when all requirements of this document are met.

A carbon neutrality claim shall be based on, and shall include a reference or link to, the carbon neutrality report. Carbon neutrality claims shall be verified in accordance with ISO 14064-3 or an equivalent verification standard.

The entity shall publish background information forming an executive summary of the carbon neutrality report (see [Clause 12](#)) for each reporting period.

The entity shall ensure that this information:

- a) is consistent with the information in the carbon neutrality report;
- b) is publicly accessible with a link to the carbon neutrality report;
- c) accurately summarizes the scope and boundary of the subject;
- d) states the carbon neutrality reporting period;
- e) includes the carbon neutrality pathway (see [5.3](#));

- f) states the amount of GHG emissions, GHG removals, GHG emission reductions and GHG removal enhancements;
- g) states the carbon footprint that has been offset in CO₂e;
- h) indicates the type of carbon credits purchased and retired to achieve carbon neutrality;
- i) states whether the carbon neutrality claim includes unabated GHG emissions or only residual GHG emissions;
- j) states that double claiming has been avoided;
- k) states when and by whom the carbon neutrality claim has been verified.

NOTE Claims of carbon neutrality using this document are a contribution towards global GHG neutrality as defined by the IPCC.

Annex A (informative)

Carbon neutrality pathway

An entity's carbon neutrality pathway describes the planned trajectory by which the entity intends to achieve carbon neutrality and reduce the carbon footprint of the subject, in line with its carbon neutrality management plan. The carbon neutrality pathway is not likely to be a linear path and is often characterized by shifts as organizations change their processes, revise product offerings, benefit from improvements in their supply chains and change offsetting mechanisms.

At any point along the carbon neutrality pathway, the achievement of carbon neutrality is assessed from the carbon footprint of the subject minus carbon credits, see [Figure A.1](#).

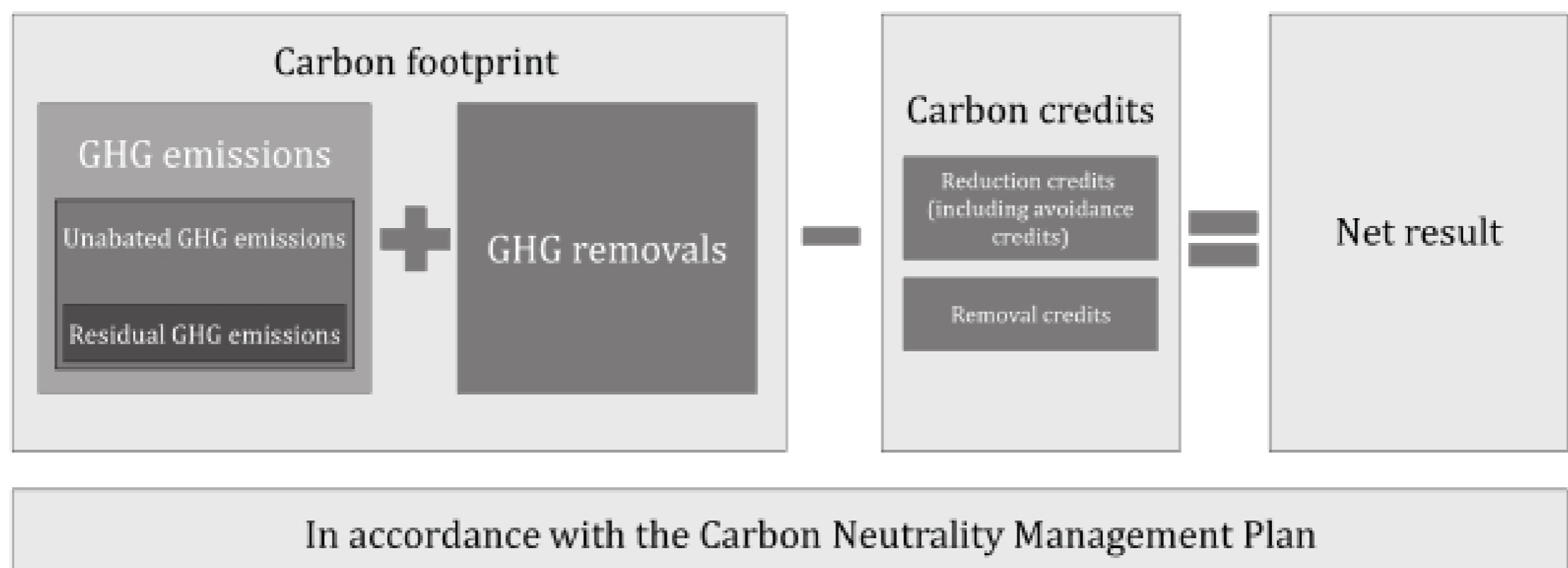


Figure A.1 — Relationship between the elements of the subject's carbon neutrality pathway

The subject's carbon footprint, carbon credits used and net result determine its achievement of carbon neutrality.

If the net result is equal to zero, this qualifies as carbon neutral. If the net result is negative (a state which is sometimes called "net negative", "carbon negative" or "climate positive"), this is also considered carbon neutral in this document. A net result greater than zero is ineligible for a carbon neutrality claim.

The carbon neutrality pathway involves reducing GHG emissions of the subject while increasing GHG removals within the subject's boundary, thereby reducing the reliance on offsetting over time. It is recognized that some entities will not be able to achieve a carbon footprint of zero for the subject and will therefore remain dependent on offsetting.

Two phases can be distinguished in a carbon neutrality pathway:

- **Early phase:** This phase is characterized by unabated GHG emissions, use of carbon credits of any type to counterbalance the carbon footprint, and commencement of implementation of GHG emission reductions and GHG removal enhancements to reduce the carbon footprint of the subject according to the carbon neutrality management plan.
- **Later phase:** This phase is characterized by:
 - a carbon footprint where the GHG emissions have been reduced to residual GHG emissions only, and the carbon footprint is progressively counterbalanced by removal credits, or

- a carbon footprint that is zero or negative without the use of any carbon credits.

Residual GHG emissions are GHG emissions within the carbon footprint of the subject that remain after implementing all technologically and economically feasible measures. The threshold between unabated and residual GHG emissions will adjust over time as technology improves and economics change.

Examples where residual GHG emissions can exist within the entity's carbon footprint are:

- industrial process emissions (e.g. cement production, aluminium smelting, steel/metal production);
- emissions under emergency situations (e.g. fire, facility upset);
- infrastructure limitations (e.g. charging infrastructure unavailable);
- technology limitations (e.g. no method to prevent nitrous oxide emissions from soil);
- economic limitations (e.g. available technology for carbon capture on mobile vehicles unaffordable).

For illustrative purposes, [Table A.1](#) presents a non-exhaustive list of states that qualify as carbon neutral, grouped into two phases as described above.

Table A.1 — Combinations of elements to achieve carbon neutrality

Phase	Carbon footprint ^a		Type of carbon credits ^c	Net result	Note
	GHG emissions after making GHG emission reductions	GHG removals ^b			
Early	Unabated emissions	No	Any type	0	
	Unabated emissions	No	Removal credits	0	
	Unabated emissions	Yes	Any type	0	
	Unabated emissions	Yes	Removal credits	0	
	Unabated emissions	Yes	None	0	d
Later	Residual emissions	No	Any type	0	
	Residual emissions	No	Removal credits	0	d
	Residual emissions	Yes	Any type	0	
	Residual emissions	Yes	Removal credits	0	d
	Residual emissions	Yes	None	0	d, e

^a Any emissions reductions or removal enhancements that have been transferred to another entity as carbon credits are excluded when calculating the carbon credits required for offsetting, to avoid double counting or double claiming.

^b GHG removals are made within the boundary of the subject.

^c Types of carbon credits are avoidance credits, reduction credits and removal credits.

^d Some initiatives define these states as "net zero".

^e The IPCC defines this state as "net zero".

Annex B (normative)

Additional requirements for specific cases

B.1 Organizations

The quantification of GHG emissions and removals shall follow the methodology set out in ISO 14064-1 or any methodology which is consistent with it.

When establishing the boundary of the organization, determination of which GHG emissions are significant shall take into consideration:

- a) the needs of the intended user of the carbon neutrality claim;
- b) the level of ambition of the carbon neutrality management plan.

NOTE Quantification of GHG emissions includes the following categories: direct GHG emissions and indirect GHG emissions from purchased energy, upstream purchasing, downstream sold products including the use phase and end-of-life phase, goods transportation, travel and financial investments.

If the result of a quantification is a GHG inventory, the inventory shall be summed to represent the carbon footprint of the organization.

If the subject is an organization that is part of a larger organization, the carbon neutrality of the subject should be seen in the context of the entire carbon footprint of the larger organization.

In this case, a long-term pathway for carbon neutrality should be developed for the larger organization.

B.2 Products

B.2.1 General

The quantification of the carbon footprint of products shall follow the methodology set out in ISO 14067 or other quantification methodology for products, which is consistent with it. For business-to-consumer communication, the quantification of the carbon footprint of products shall cover the full life cycle of the product and use a functional unit. For business-to-business communication, the quantification of the carbon footprint of products may use a declared unit for a partial or full carbon footprint.

If the subject comprises only a part of a product system, the entity shall document the rationale for the selection of that part of the product system and describe all GHG emissions attributable to the product.

If more than one product is produced by the entity, it should develop a carbon neutrality management plan at the entity level covering the other products it produces. Where practicable, the entity should seek to achieve carbon neutrality for all of its products and not just for a single product.

GHG emission reductions for products shall be expressed as a reduction per functional unit (e.g. one pair of hands dried, one person transported for 1 km by a passenger vehicle, 1 m² of wall painted lasting for 20 years) for consumers or per declared unit for a partial carbon footprint (e.g. 1 tonne of steel, 100 m of 3 mm gauge steel wire) for business-to-business products.

B.2.2 Events

An event is a type of product that shall be quantified in accordance with ISO 14067 or other quantification methodology which is consistent with it. Events can include provision of both goods and services. The boundary of the event shall include:

- a) the planning phase;
- b) the preparation phase;
- c) the event phase;
- d) the post-event phase.

One-off (non-recurring) events should be distinguished from recurring events.

Prior to an event (during the planning phase), the entity shall prepare a carbon neutrality management plan to identify all actions to be executed to manage GHG emissions during the event.

NOTE 1 The view on the type of events of the entities providing the service can be different, e.g. from the artist's point of view, a concert can be a recurring event if part of a tour, while the (local) venue provider considers the same concert to be a one-off event.

An event shall be considered as a single product.

NOTE 2 Additional services can be provided by specific service providers (e.g. lighting, audio technology, catering) outside the control or responsibility of the event organizer. In this case, the carbon neutrality can be publicly claimed at the event level, specifying the boundary of what is included in the carbon footprint and determination of carbon neutrality, but the additional service providers can also claim carbon neutrality for the services that they are providing to the event organizer (in a business-to-business or with a business-to-consumer communication).

Organizers of one-off events shall demonstrate that all reasonable efforts have been made to minimize GHG emissions before claiming carbon neutrality through offsetting.

Entities organizing recurring events shall develop a carbon neutrality management plan for future events. The entity shall document the rationale for the selection of the reporting period, if more than one event is covered. The entity shall demonstrate GHG emission reductions from one time period to the next and shall not rely only on offsetting to justify a carbon neutrality claim. When the nature and scale of an event has changed significantly, it shall be accounted for as if it were a one-off event.

For non-recurring one-off events or when the nature and scale of a recurring event have changed significantly, GHG emission reductions shall be based on a conservative baseline estimate, taking into account factors such as the expected number of attendees and weather conditions.

For events that are recurring and where the nature and scale of the event have not changed significantly, GHG emission reductions shall be based on the reference event.

B.3 Financial institutions

B.3.1 General

In addition to the criteria given in [Clause B.1](#), financial institutions claiming carbon neutrality shall quantify, reduce and offset the GHG emissions financed by its activities or assets.

Financed GHG emissions are the GHG emissions resulting from activities or assets that the financial institution finances, including (but not limited to) listed equity and corporate bonds, business loans and unlisted equity, project finance, commercial real estate, mortgages and motor vehicle loans. These

GHG emissions are typically relevant to banks, fund managers, insurance companies and other financial institutions.

NOTE 1 The terminology “financed GHG emissions” is used to align with the Global GHG Accounting and Reporting Standard for the Financial Industry (PCAF)^[20] methodology and covers what is referred to as “Scope 3, Category 15, Investments”.

NOTE 2 In ISO 14064-1, financed GHG emissions are within Category 5.

NOTE 3 For further principles and guidance, see ISO 14097.

Entities shall not claim carbon neutrality for investments in activities that do not support the transition to global carbon neutrality.

B.3.2 Scope and boundary of financed GHG emissions

Calculations shall cover all significant financed GHG emissions within the boundary. Any exclusions of financed GHG emissions from the boundary shall be documented and justified. Acceptable justification criteria for exclusion are as follows:

- Size: The activities are insignificant to the institution’s total anticipated financed GHG emissions.
- Methodology: There is no specific global methodology to quantify the financed GHG emissions of specific activities or asset classes.

Asset managers should also assess the financed GHG emissions of discretionary funds. If a financial institution decides to exclude its asset management divisions from its parent company, it shall disclose this exclusion for transparency and comparability reasons.

NOTE Advisory services can optionally be assessed.

B.3.3 Quantification

A financial institution shall quantify its GHG emissions, including its financed GHG emissions and shall include such emissions in its carbon footprint.

Quantification of the financed GHG emissions, GHG emission reductions, GHG removals and GHG removal enhancements shall be done using a consistent methodology. Only one methodology shall be chosen for the quantification of financed GHG emissions within the boundary of the financial institution.

The quantification of financed GHG emissions, GHG emission reductions, GHG removals and GHG removal enhancements shall cover and be categorized per asset class or sector.

B.3.4 Disclosure

Financial institutions shall set a target(s) using a science-based approach covering their financed GHG emissions.

In addition to the general disclosure requirements set out in this document, disclosure of carbon neutrality by financial institutions shall include:

- an evaluation of the quality of the data used for the quantification of GHG emissions from financed investments;
- an analysis by asset class and sector.

B.3.5 Investment in GHG emission reductions

The following actions are also encouraged, to demonstrate alignment of the financial institution with the transition to global carbon neutrality:

- direct investment in projects that reduce or avoid GHG emissions, or remove GHGs;

- financing the development of nature-based or technological carbon sinks.

B.4 Market-based approaches

The market-based approach for electricity may be used only when the supplier is able to guarantee through a contractual arrangement that the electricity product:

- conveys the information associated with the unit of electricity delivered;
- is assured with a unique claim, to avoid double-counting of GHG emissions and GHG removals within the boundary of the subject;
- is tracked and redeemed, retired or cancelled by, or on behalf of, the reporting entity;
- is produced as close as possible to the period to which the contractual instrument is applied and comprises a corresponding timespan;
- is produced within the country, or within the market boundaries where consumption occurs if the grid is interconnected.

If processes within the subject are located in Small Island Developing States (SIDS)³⁾, the carbon footprint may additionally be quantified using contractual instruments for such processes, irrespective of grid interconnectivity.

The entity shall document in the carbon neutrality management plan its plans to improve the efficiency of electricity use of the subject and report actions that have been taken to implement such activities.

The entity should consistently apply the selected approach in subsequent carbon neutrality reports. If the entity changes its selected approach in subsequent reporting periods, it shall reflect this change in the carbon neutrality management plan, including a recalculation of the baseline, and make it transparent in the carbon neutrality report.

To promote the development of additional renewable energy capacity, entities should apply the following sourcing hierarchy:

- a) self-generation or physical power purchase agreements with direct line connections;
- b) financial power purchase agreements from renewable sources;
- c) contractual instruments from a generation facility no older than 15 years.

NOTE 1 Contractual instruments are any type of contract between two parties for the sale and purchase of energy bundled with attributes about the energy generation, or for unbundled attribute claims. This can include energy attribute certificates (EACs), renewable energy certificates (RECs), guarantees of origin (GOs), power purchase agreements (PPAs), green energy certificates or supplier specific emission rates.

NOTE 2 The market-based approach is a method to quantify the indirect emissions from energy of a reporting organization based on GHG emissions emitted by the generators from which the reporting organization contractually purchases electricity bundled with contractual instruments, or contractual instruments on their own.

NOTE 3 The location-based approach is a method to quantify indirect emissions from energy based on physical delivery of energy, using average energy generation emission factors for defined geographic locations at a national or sub-national level.

NOTE 4 Using biofuels or other bio-based materials based on contractual instruments can result in GHG emissions reductions. These market-based approaches involve a separate certification process, which includes use of contractual arrangements that:

3) Small Island Developing States (SIDS) are a distinct group of 39 States and 18 Associate Members of United Nations regional commissions that face unique social, economic and environmental vulnerabilities. <https://www.un.org/ohrlls/content/about-small-island-developing-states>

- convey the information associated with the unit of fuel or materials delivered;
- are assured with a unique claim, to avoid double-counting of GHG emissions and GHG removals within the boundary of the subject;
- are tracked and redeemed, retired or cancelled by, or on behalf of, the reporting entity.

Annex C (informative)

Comparison between International Standards on quantification and GHG Protocol Accounting and Reporting Standards

C.1 General

This annex outlines how the criteria of the GHG Protocol Accounting and Reporting Standards cited in 8.1 can be consistent with those in the respective International Standards. [Table C.2](#) provides a comparison of the categories of direct and indirect GHG emissions attributable to organizations. [Table C.3](#) provides a comparison of the quantification and reporting requirements for products.

In this annex, the short form names shown in [Table C.1](#) are used to identify the edition of the documents used in the comparison.

Table C.1 — Short form names used in the comparison of documents

Short form name	Full title and edition date of document used in the comparison
ISO 14064-1	ISO 14064-1:2018, <i>Greenhouse gases — Part 1: Specification with guidance at the organization level for quantification and reporting of greenhouse gas emissions and removals</i>
ISO 14067	ISO 14067:2018, <i>Greenhouse gases — Carbon footprint of products — Requirements and guidelines for quantification</i>
GHG Protocol Corporate Standard	“A Corporate Accounting and Reporting Standard Revised Edition” ^[17] published by GHG Protocol in 2020, together with its supplement “Corporate Value Chain (Scope 3) Accounting and Reporting Standard - Supplement to the GHG Protocol Corporate Accounting and Reporting Standard” ^[18] published by GHG Protocol in 2011
GHG Protocol Product Standard	“Product Life Cycle Accounting and Reporting Standard” ^[19] published by GHG Protocol in 2011

C.2 Comparison between ISO 14064-1:2018 and the GHG Protocol Corporate Standard^[17]

C.2.1 General

The main differences between ISO 14064-1:2018 and the GHG Protocol Corporate Standard and the GHG Protocol Corporate Value Chain (Scope 3) Standard^[18] are:

- a) the extent to which indirect GHG emissions have to be included in the quantification;
- b) different uses of the location-based versus market-based approach for reporting indirect energy emissions.

NOTE Reference to the GHG Protocol Corporate Standard includes the Scope 2 guidance amendment to that standard.

C.2.2 Reporting of indirect emissions

In addition to all direct GHG emissions and GHG removals, ISO 14064-1 requires the inclusion of the following significant indirect GHG emissions:

- a) indirect GHG emissions from purchased energy;
- b) indirect GHG emissions from transportation;
- c) indirect GHG emissions from product(s) used by the organization;
- d) indirect GHG emissions associated with the use of product(s) from the organization;
- e) indirect GHG emissions from other sources.

In contrast, GHG Protocol standards require the inclusion of Scope 1 (direct GHG emissions) and Scope 2 (indirect GHG emissions from purchased energy); the inclusion of other indirect GHG emissions under Scope 3 is optional. The GHG Protocol Corporate Standard is referred to in various GHG reporting and disclosure initiatives whose requirements for the reporting of the Scope 3 emissions vary.

C.2.3 Reporting of indirect energy emissions

Using ISO 14064-1, only the location-based method for indirect GHG emissions from imported energy can be used in the main GHG inventory. The market-based method may be reported separately, but renewable energy agreements and certificates cannot be accounted for as GHG emission reductions. The GHG Protocol Corporate Standard allows the market-based method for quantifying and reporting indirect energy emissions to be used as the main reporting method as long as the location-based method is also reported. The GHG Protocol Corporate Standard counts the purchase of renewable energy as a form of GHG emission reduction.

C.2.4 Addressing GHG emissions and removals

ISO 14064-1 clearly addresses GHG emissions and removals per each category and removals are therefore an inherent part of the GHG quantification. The guidance given in the GHG Protocol Corporate Standard is not as clear, but allows for the quantification of GHG removals which should be reported separately from GHG emissions.

C.2.5 Avoided GHG emissions

The concept of avoided GHG emissions is not addressed in ISO 14064-1. However, the GHG Protocol Corporate Standard addresses the quantification of avoided GHG emissions, which are required to be reported separately.

C.2.6 Differences in quantification and scoping

Table C.2 compares ISO 14064-1 and the GHG Protocol Corporate Standard in terms of direct and indirect GHG emissions. In general, the GHG emissions covered by the GHG Protocol Corporate Standard conform to ISO 14064-1 if significant Scope 3 GHG emissions and GHG removals are both considered.

Table C.2 — Comparison between ISO 14064-1:2018 and GHG Protocol Corporate Standard [12] — Direct and indirect GHG emissions

Categories in ISO 14064-1:2018	Categories in ISO 14064-1:2018, Annex B	Categories in GHG Protocol Corporate Standard	Main differences
1 Direct GHG emissions and removals	1.1 Direct GHG emissions from stationary combustion	Scope 1 (direct) 1.1 Direct GHG emissions from stationary combustion 1.2 Direct GHG emissions from mobile combustion	No major differences in categories. The GHG Protocol Corporate Standard includes the GHG emissions from the operation (Scope 1 and 2 GHG emissions only) of franchises in Scope 3, Category 14: Franchise. ISO 14064-1 requires franchises to be addressed within the operational boundaries of the reporting entity and to be accounted under categories 1 and 2. Consequently, also indirect GHG emissions are taken into account for franchises according to ISO 14064-1, which is not the case for the GHG Protocol Corporate Standard.
	1.2 Direct GHG emissions from mobile combustion		
	1.3 Direct process GHG emissions and removals from industrial processes	1.3 Direct physical or chemical processing GHG emissions	
	1.4 Direct fugitive GHG emissions from the release of GHG in anthropogenic systems	1.4 Direct fugitive GHG emissions	
	1.5 Direct GHG emissions and removals from land use, land use change and forestry (LULUCF)	Optional information	
2 Indirect GHG emissions from imported energy	2.1 Indirect GHG emissions from imported electricity	Scope 2 (indirect) - generation of consumed energy GHG emissions from generation of purchased electricity, heat, steam and cooling	The location-based method is used as the main method for accounting indirect GHG emissions from imported energy in ISO 14064-1. Organizations may also report separately using a market-based approach. The market-based method may be used as the main method for accounting indirect GHG emissions from imported energy according to the GHG Protocol Corporate Standard, as long as the location-based method is also reported. The GHG Protocol Corporate Standard sees purchases of renewable energy as a GHG emission reduction. Dual-reporting accounting of Scope 2 GHG emissions using both location-based and market-based methods should be used according to the GHG Protocol Corporate Standard: "If companies have any operations in markets providing product or supplier specific data in the form of contractual instruments".
	2.2 Indirect GHG emissions from imported energy other than electricity (steam, heating, cooling and compressed air)		

Table C.2 (continued)

Categories in ISO 14064-1:2018	Categories in ISO 14064-1:2018, Annex B	Categories in GHG Protocol Corporate Standard	Main differences
<p>3 Indirect GHG emissions from transportation</p>	<p>3.1 Indirect GHG emissions from upstream transport and distribution for goods</p>	<p>Scope 3, Category 4: Upstream transportation and distribution</p>	<p>Scope 1 and Scope 2 GHG emissions from use of vehicles. Optional: Life cycle GHG emissions from vehicles, facilities and infrastructure (same for the GHG Protocol Corporate Standard and ISO 14064-1). ISO 14064-1 and the GHG Protocol Corporate Standard require tank-to-wheel (TTW) for all transport while well-to-tank (WTT) is optional.</p>
	<p>3.2 Indirect GHG emissions from downstream transport and distribution for goods</p>	<p>Scope 3 Category 9: Downstream transportation and distribution</p>	
	<p>3.3 Indirect GHG emissions from employee commuting</p>	<p>Scope 3, Category 7: Employee Commuting</p>	
	<p>3.4 Indirect GHG emissions from client and visitor transport</p>	<p>Not applicable</p>	<p>Not included in GHG Protocol Corporate Standard reporting. It could be included in upstream transport (Scope 3, Category 4).</p>
	<p>3.5 Indirect GHG emissions from business travel</p>	<p>Scope 3, Category 6: Business travel</p>	

Table C.2 (continued)

Categories in ISO 14064-1:2018	Categories in ISO 14064-1:2018, Annex B	Categories in GHG Protocol Corporate Standard	Main differences
<p>4 Indirect GHG emissions from products used by an organization</p>	<p>4.1 Indirect GHG emissions from purchased goods</p>	<p>Scope 3, Category 1: Purchased goods and services and Scope 3, Category 3: Fuel- and energy-related activities</p>	
	<p>4.2 Indirect GHG emissions from capital goods</p>	<p>Scope 3, Category 2: Capital goods</p>	<p>ISO 14064-1: Options for quantification methodologies: GHG emissions within this subcategory could include either the total of GHG emissions associated with the production of the capital good in the year of purchasing or an amortized part of the total (based on accounting rules or lifetime duration). If the second option is chosen, GHG emissions should be reported pro-rata during the amortization period. GHG Protocol Corporate Standard: Only Option 1 from above is valid: "For purposes of accounting for Scope 3 GHG emissions companies should not depreciate, discount, or amortize the GHG emissions from the production of capital goods over time".</p>
	<p>4.3 Indirect GHG emissions from the disposal of solid and liquid wastes</p>	<p>Scope 3, Category 5: Waste generated in operations</p>	
	<p>4.4 Indirect GHG emissions from the use of assets</p>	<p>Scope 3, Category 8: Upstream leased assets</p>	<p>The GHG Protocol Corporate Standard reports TTW for energy consumed in the use phase while WTT is optional.</p>
	<p>4.5 Indirect GHG emissions from the use of other services</p>	<p>Scope 3, Category 1: Purchased goods and services</p>	

Table C.2 (continued)

Categories in ISO 14064-1:2018	Categories in ISO 14064-1:2018, Annex B	Categories in GHG Protocol Corporate Standard	Main differences
5 Indirect GHG emissions or GHG removals associated with the use of products from the organization	5.1 Indirect GHG emissions or removals from the use stage of the product 5.2 Indirect GHG emissions from downstream leased assets 5.3 Indirect GHG emissions from end-of-life stage of the product 5.4 Indirect GHG emissions from investments	Scope 3, Category 10: Processing of sold products and Scope 3, Category 11: Use of sold products Scope 3, Category 13: Downstream leased assets Scope 3, Category 12: End-of-life treatment of sold products Scope 3, Category 15: Investments	In the GHG Protocol Corporate Standard, only direct use phase GHG emissions associated with the product/service are included, while indirect use phase GHG emissions may be included optionally. According to ISO 14064-1, both direct and significant indirect use phase GHG emissions have to be included. EXAMPLE According to the GHG Protocol Corporate Standard for vehicles, organizations report TTW for energy consumed in the use phase, while WTT is optional. The GHG Protocol Corporate Standard reports TTW for energy consumed in the use phase while WTT is optional.
6 Indirect GHG emissions from other sources	6 Indirect GHG emissions from other sources	Not applicable	ISO 14064-1: "GHG emissions from investments are mainly targeting private or public financial institutions. GHG emissions could result from four types of operations: equity debt, investment debt, project finance and others." The GHG Protocol Corporate Standard: Equity investments, Debt investments, Project finance, and Managed investments and client services. ISO 14064-1: The purpose of this category is to capture any organization specific emission (or removal) that cannot be reported in any other category. In consequence, it is the organization's responsibility to define the content of this particular category. The GHG Protocol Corporate Standard: Optional to add a category for "other" emission sources. ISO 14064-1 includes indirect emissions that arise outside the value chain. The GHG Protocol Corporate Standard only includes value chain emissions.

C.3 Comparison between ISO 14067:2018 and the GHG Protocol Product Standard^[19]

C.3.1 General differences in concepts

In general, the two standards are aligned. The quantification methodologies and requirements in both standards follow the life cycle approach established by the life cycle assessment (LCA) standards ISO 14040 and ISO 14044.

The GHG Protocol Product Standard approach is more adapted to be used by businesses and contains guidance on how to align the scope and goals to business goals. It also has a greater focus on targets and performance tracking as well as how to implement a phased approach with a focus on improving data management over time, and not just the quantification and reporting parts.

The first four principles in ISO 14067 are not included as principles in the GHG Protocol Product Standard, but rather as fundamentals or scoping requirements. Offsetting is not within the scope of either standard.

Both ISO 14067 and the GHG Protocol Product Standard use a life cycle approach. The GHG Protocol Product Standard highlights the so-called “attributional approach” to be followed, while ISO 14067 does not define the approach.

ISO 14067 separates the inventory analysis of single GHGs from the impact assessment of global warming, while the GHG Protocol Product Standard uses the term “GHG inventory” to measure global warming impact.

C.3.2 GHG emissions and removals

ISO 14067 addresses GHG emissions and removals per each life cycle stage. Fossil GHG emissions and removals can be reported as a net figure, while biogenic GHG emissions and removals are reported separately in the results.

The GHG Protocol Product Standard also addresses GHG emissions and removals per life cycle stage for the quantification, but this does not need to be disclosed in the report. Both fossil and biogenic GHG emissions and removals can be reported as a net figure. Biogenic GHG emissions and removals are only reported separately if applicable.

C.3.3 Carbon stored in products

ISO 14067 requires that biogenic carbon content, if quantified, is documented separately. The GHG Protocol Product Standard allows for both non-biogenic (fossil) and biogenic carbon content to be included and quantified in the carbon footprint.

C.3.4 Avoided GHG emissions

The concept of avoided GHG emissions is not addressed in ISO 14067. The GHG Protocol Product Standard addresses the concept of avoided GHG emissions in combination with separate reporting but does not allow for inclusion in the inventory results.

C.3.5 Differences in quantification and scoping

Table C.3 compares ISO 14067 and the GHG Protocol Product Standard in terms of quantification and reporting requirements. In general, the GHG emissions covered by the GHG Protocol Product Standard are consistent with ISO 14067.

Table C.3 — Correspondence between ISO 14067:2018 and GHG Protocol Product Standard^[19] — Quantification and reporting requirements

Clause in ISO 14067:2018	Corresponding clause in the GHG Protocol Product Standard	Main differences
6.3 Goal and scope definition 6.3.1 Goal of a carbon footprint study 6.3.2 Scope of a carbon footprint study	4. Principles 6. Establishing the scope of a Product inventory	Differences in language but not in practice. The GHG Protocol Product Standard states that “the scope should be aligned with the five accounting principles and the company’s business goals”, while ISO 14067 focuses more on the technical definitions. Overall, both standards state that the goal is to calculate the estimated climate impact of a product with the intended application and user in mind. The GHG Protocol Product Standard defines which GHG gases are included in the inventory already in the scoping phase, while ISO 14067 takes this up in the reporting part of the standard. Both standards refer to the latest IPCC Assessment Report for a complete list of GHGs.
6.3.3 Functional or declared unit	6.2 Requirements 6.3.2 Defining the unit of analysis	ISO 14067 introduces the reference flow for a product system (related to the functional unit) and for the partial carbon footprint (related to the declared unit), while the GHG Protocol Product Standard just uses the term reference flow for any intermediate products.
6.3.4 System boundary	5. Fundamentals of Product Life Cycle Accounting 7. Boundary Setting	No major differences. ISO 14067 notes that capital goods can be excluded if falling within the cut-off limit. In the GHG Protocol Product Standard capital goods are a major Category 2 element in Scope 3 emissions. The GHG Protocol Product Standard states that companies have to include a process map in the inventory report, while ISO 14067 only requires a list of included unit processes. Any exclusions must be disclosed and justified according to both standards, and the threshold for significance has to be stated. The GHG Protocol Product Standard states that “companies shall disclose and justify when a cradle-to-gate boundary is defined in the inventory report”.
6.3.5 Data and data quality	8. Collecting Data and Assessing Data Quality	No major differences. Both standards have a clear hierarchy on what type of data to use, prioritizing site-specific primary data. ISO 14067 puts more emphasis on the need to justify any use of secondary data.
6.4 Life cycle inventory analysis for the carbon footprint	7. Boundary Setting 8. Collecting Data and Assessing Data Quality 9. Allocation	In general, the same steps are used. There are some differences in the treatment of biogenic GHG emissions and removals. No major differences. Both standards have the same allocation procedure.

Table C.3 (continued)

Clause in ISO 14067:2018	Corresponding clause in the GHG Protocol Product Standard	Main differences
6.4.7 Carbon footprint performance tracking	14. Setting Reduction Targets and Tracking Inventory Changes Over Time	No major differences. The GHG Protocol Product Standard has more detailed guidance. Both standards highlight the need for consistency and use of the same functional units and calculation methods.
6.4.8 Assessing the effect of the timing of GHG emissions and removals	11. Calculating Inventory Results	No major differences. The effect of the timing of delayed GHG emissions and removals are not to be taken into account.
6.4.9 Treatment of specific GHG emissions and removals 6.4.9.2 Fossil and biogenic carbon	11. Calculating Inventory Results 13. Reporting	ISO 14067 states that "fossil GHG emissions and removals shall be included ... and documented separately as a net result", and "biogenic GHG emissions and removals shall be included and expressed separately", while the GHG Protocol Product Standard states that "companies shall quantify and report the total inventory results in CO ₂ e per unit of analysis, which includes all emissions and removals included in the boundary from biogenic sources, non-biogenic sources, and land-use change impacts", and have "Separate reporting of biogenic and non-biogenic emissions and removals and land-use change impacts, when applicable".
6.4.9 Treatment of specific GHG emissions and removals 6.4.9.3 Biogenic carbon in products	11. Calculating Inventory Results 13. Reporting	ISO 14067 states that "If a product's biogenic carbon content is calculated, it shall be documented separately ... but it shall not be included in the GHG result", while the GHG Protocol Product Standard states that "Both non-biogenic and biogenic carbon content and storage shall be calculated and reported".
6.4.9 Treatment of specific GHG emissions and removals 6.4.9.4 Electricity	8. Collecting Data and Assessing Data Quality; Box [8.3] 13. Reporting	No major differences, both standards allow for a market-based approach using contractual instruments.
6.4.9 Treatment of specific GHG emissions and removals 6.4.9.5 Land use change	7. Boundary Setting 13. Reporting	No major differences, direct land use change GHG emissions are included and reported separately, but indirect land use change GHG emissions are optional and can be calculated and reported separately.
6.4.9 Treatment of specific GHG emissions and removals 6.4.9.6 Land use	7. Boundary Setting 13. Reporting	No major differences.

Table C.3 (continued)

Clause in ISO 14067:2018	Corresponding clause in the GHG Protocol Product Standard	Main differences
6.4.9 Treatment of specific GHG emissions and removals 6.4.9.7 Aircraft GHG emissions	11. Calculating Inventory Results	Aircraft transportation is included in both standards. ISO 14067 states that these emissions must be "documented separately in the carbon footprint study report", while this is not mentioned in the GHG Protocol Product Standard. The standards differ regarding use of an aviation multiplier. ISO 14067 states that "Where an aviation multiplier is used, the effect of this multiplier shall not be included in the carbon footprint and shall be reported separately together with the source", while the GHG Protocol Product Standard does not demand separate reporting for this but states that "Multipliers or other corrections to account for radiative forcing may be applied to the GWP of emissions arising from aircraft transport. When used, the type of multiplier and its source should be disclosed in the inventory report".
6.5 Impact assessment 6.5.1 General 6.5.2 Impact assessment of biogenic carbon	11. Calculating Inventory Results	ISO 14067 GWP100 indicators from the latest IPCC Report explicitly account for carbon feedbacks (this can have a significant impact on methane and other GHG characterization factors). The GHG Protocol Product Standard does not make specific reference to this and seems to include GHG characterization factors without carbon feedbacks. ISO 14067 states that biogenic GHG removals must be documented as negative and biogenic GHG emissions as positive in the impact assessment results, while the GHG Protocol Product Standard allows reporting of net biogenic emissions in the results with separate reporting only if applicable.
6.6 Interpretation Significant issues/hotspots, uncertainty assessment, formulate conclusions limitations and recommendations	10. Assessing uncertainty 13. Reporting 14. Setting Reduction Targets and Tracking Inventory Changes	Differences in language but not in practice. Both standards include identification of hotspots, uncertainty assessment and sensitivity analysis, and statements of limitations.

Table C.3 (continued)

Clause in ISO 14067:2018	Corresponding clause in the GHG Protocol Product Standard	Main differences
7. Carbon footprint study report	13. Reporting	<p>The GHG Protocol Product Standard states that companies must publicly disclose a report, and the reporting requirements are set from this perspective. In ISO 14067, the carbon footprint study report has the purpose of demonstrating that the standard has been applied correctly. The ISO 14067 report therefore demands more detailed information to be disclosed.</p> <p>ISO 14067 states that "GHG emissions and removals linked to the main life cycle stages in which they occur, including the absolute and the relative contribution of each life cycle stage shall be documented separately...", while the GHG Protocol Product Standard only demands that the total inventory results and the percentage impact per life cycle stage is disclosed.</p> <p>The GHG Protocol Product Standard allows for biogenic GHG emissions and removals to be disclosed as net emissions, if separate reporting is not applicable.</p> <p>ISO 14067 states that biogenic GHG emissions and removals must be reported separately in the results. ISO 14067 also states that GHG emissions and removals from direct land use change must be reported separately in the results, while the GHG Protocol Product Standard only demands this when applicable.</p> <p>GHG emissions from aircraft transportation have to be reported separately in the results in accordance with ISO 14067, but this is not needed according to the GHG Protocol Product Standard.</p> <p>The use of an aviation multiplier must not be included in the carbon footprint in accordance with ISO 14067 but can be reported separately with the source. The GHG Protocol Product Standard allows for the use of an aviation multiplier included in the result as long as the type and source are disclosed in the inventory report.</p>
8. Critical review	12. Assurance	<p>The GHG Protocol Product Standard states that "The product GHG inventory shall be assured by a first or third party", while ISO 14067 encourages a critical review, but it is not required.</p>

Annex D **(informative)**

Ambition

D.1 General

Organizations with higher capacity, historical responsibility or high current GHG emissions act with higher ambition.

The entity can take into account the following aspects when setting the level of ambition of the carbon neutrality management plan:

- a) the extent to which the subject represents the activities of the entity;
- b) the threshold for significance to exclude activities (e.g. processes, sources of indirect GHG emissions, geographical or organizational boundaries of an organization, the quantification of GHG emissions);
- c) the targets for the subject's carbon neutrality pathway, including:
 - the subject's GHG emission reduction short- and medium-term targets, along with their time frame;
 - the time frame for the long-term targets when only residual GHG emissions remain;
- d) the extent to which the subject's GHG emission reduction targets include the use of fossil fuels;
- e) the extent to which the subject's GHG emission reduction target is based on the best available technology;
- f) the extent to which offsetting is relied upon in each reporting period.

NOTE Regarding the targets and the time frame for the subject's GHG emission reductions and/or GHG removals enhancements, the carbon footprint will not always decline in a straight line, and a more common experience can be stepwise changes as entities modify their processes, revise product offerings and benefit from improvements in supply chain GHG emissions. Nonetheless, the entity can benefit from understanding the scale of year-over-year average GHG emission reductions and/or GHG removal enhancements that are needed to meet targets set by management.

D.2 Examples of high ambition for carbon neutrality

High ambition can be demonstrated by, for example:

- a) setting wide subject boundaries, to encompass all relevant GHG emissions (even if the quantification standard permits the exclusion of some emissions);
- b) achieving carbon neutrality for a whole organization rather than just for part of an organization;
- c) achieving carbon neutrality for all of an entity's products rather than just for a selection of one or more products;
- d) planning and acting to achieve deep and fast GHG emission reductions, and maximum possible GHG removals within the value chain, so that reliance on offsetting to achieve carbon neutrality is minimized;
- e) rapidly reducing reliance on fossil fuels throughout the organization and its value chain;

- f) always adopting best available technologies in order to reduce GHG emissions and to increase GHG removals within the value chain.

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