
Greenhouse gases —

Part 1:

**Specification with guidance at the
organization level for quantification and
reporting of greenhouse gas emissions
and removals**

iTeh STANDARD PREVIEW
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Gaz à effet de serre —

*Partie 1: Spécifications et lignes directrices, au niveau des organismes,
pour la quantification et la déclaration des émissions et des suppression
des gaz à effet de serre*

<https://standards.iteh.ai/en/standards/iso-14064-1-2006/a88ee7e499ca/iso-14064-1-2006>



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Foreword

ISO (the International Organization for Standardization) is a worldwide federation of national standards bodies (ISO member bodies). The work of preparing International Standards is normally carried out through ISO technical committees. Each member body interested in a subject for which a technical committee has been established has the right to be represented on that committee. International organizations, governmental and non-governmental, in liaison with ISO, also take part in the work. ISO collaborates closely with the International Electrotechnical Commission (IEC) on all matters of electrotechnical standardization.

International Standards are drafted in accordance with the rules given in the ISO/IEC Directives, Part 2.

The main task of technical committees is to prepare International Standards. Draft International Standards adopted by the technical committees are circulated to the member bodies for voting. Publication as an International Standard requires approval by at least 75 % of the member bodies casting a vote.

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

ISO 14064-1 was prepared by Technical Committee ISO/TC 207, *Environmental management*.

ISO 14064 consists of the following parts, under the general title *Greenhouse gases*:

- *Part 1: Specification with guidance at the organization level for quantification and reporting of greenhouse gas emissions and removals*
- *Part 2: Specification with guidance at the project level for quantification, monitoring and reporting of greenhouse gas emission reductions or removal enhancements*
- *Part 3: Specification with guidance for the validation and verification of greenhouse gas assertions*

Introduction

0.1 Climate change has been identified as one of the greatest challenges facing nations, governments, business and citizens over future decades. Climate change has implications for both human and natural systems and could lead to significant changes in resource use, production and economic activity. In response, international, regional, national and local initiatives are being developed and implemented to limit greenhouse gas (GHG) concentrations in the Earth's atmosphere. Such GHG initiatives rely on the quantification, monitoring, reporting and verification of GHG emissions and/or removals.

This part of ISO 14064 details principles and requirements for designing, developing, managing and reporting organization- or company-level GHG inventories. It includes requirements for determining GHG emission boundaries, quantifying an organization's GHG emissions and removals, and identifying specific company actions or activities aimed at improving GHG management. It also includes requirements and guidance on inventory quality management, reporting, internal auditing and the organization's responsibilities for verification activities.

ISO 14064-2 focuses on GHG projects or project-based activities specifically designed to reduce GHG emissions or increase GHG removals. It includes principles and requirements for determining project baseline scenarios and for monitoring, quantifying and reporting project performance relative to the baseline scenario and provides the basis for GHG projects to be validated and verified.

ISO 14064-3 details principles and requirements for verifying GHG inventories and validating or verifying GHG projects. It describes the process for GHG-related validation or verification and specifies components such as validation or verification planning, assessment procedures and the evaluation of organization or project GHG assertions. ISO 14064-3 can be used by organizations or independent parties to validate or verify GHG assertions.

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Figure 1 displays the relationship between the three parts of ISO 14064.

0.2 ISO 14064 is expected to benefit organizations, governments, project proponents and stakeholders worldwide by providing clarity and consistency for quantifying, monitoring, reporting and validating or verifying GHG inventories or projects. Specifically, use of ISO 14064 could

- enhance the environmental integrity of GHG quantification,
- enhance the credibility, consistency and transparency of GHG quantification, monitoring and reporting, including GHG project emission reductions and removal enhancements,
- facilitate the development and implementation of an organization's GHG management strategies and plans,
- facilitate the development and implementation of GHG projects,
- facilitate the ability to track performance and progress in the reduction of GHG emissions and/or increase in GHG removals, and
- facilitate the crediting and trade of GHG emission reductions or removal enhancements.

Users of ISO 14064 could find benefit from some of the following applications:

- a) corporate risk management: for example, the identification and management of risks and opportunities;
- b) voluntary initiatives: for example, participation in voluntary GHG registry or reporting initiatives;
- c) GHG markets: for example, the buying and selling of GHG allowances or credits;
- d) regulatory/government reporting: for example, credit for early action, negotiated agreements or national reporting programmes.

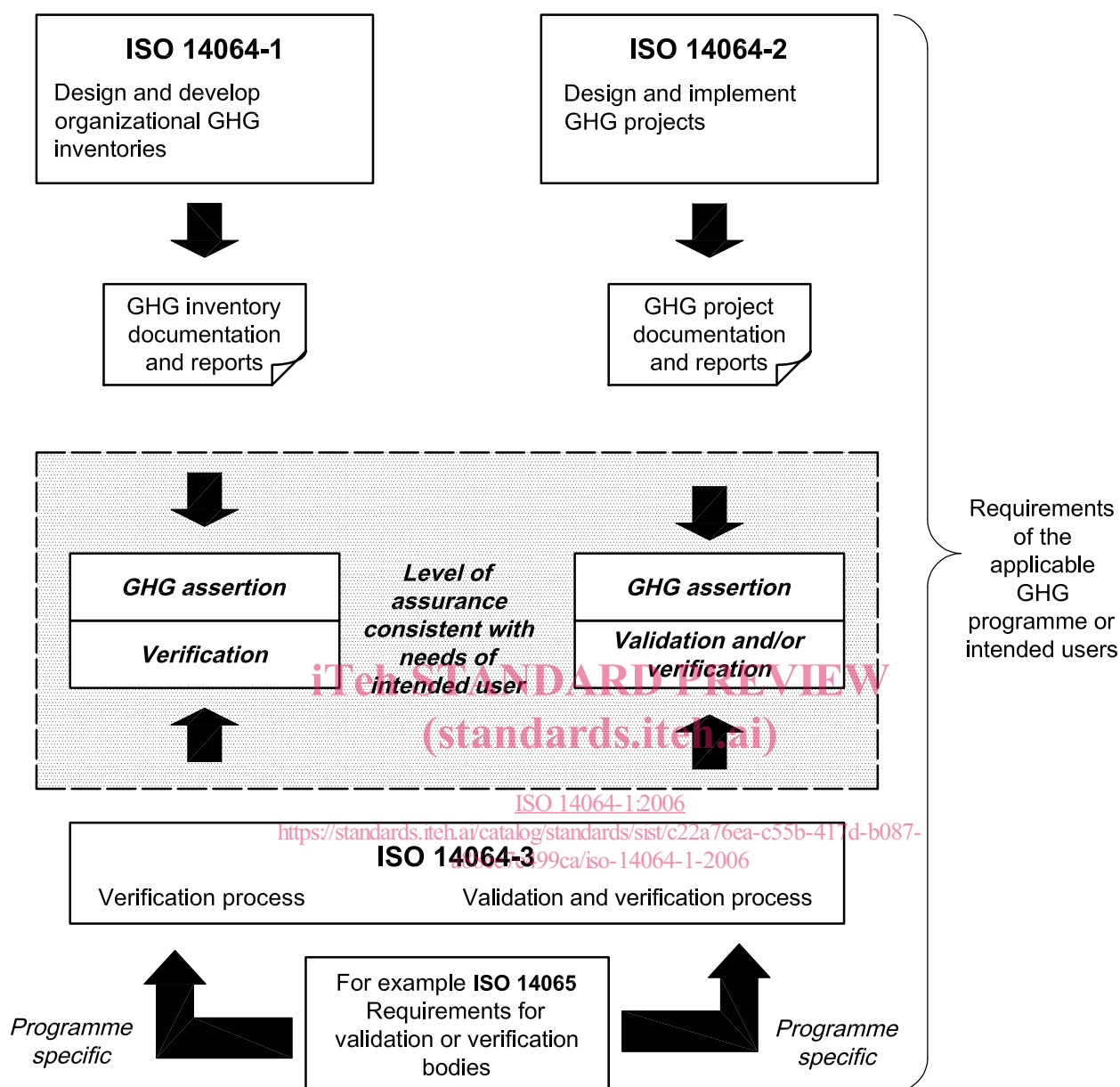


Figure 1 — Relationship between the parts of ISO 14064

0.3 Consistent with the objective of building on existing International Standards and protocols on corporate GHG inventories, this part of ISO 14064 incorporates many key concepts and requirements stated by World Business Council for Sustainable Development/World Resources Institute in Reference [4]. Users of this part of ISO 14064 are encouraged to refer to Reference [4] for additional guidance on applying relevant concepts and requirements.

0.4 Some clauses require users of this part of ISO 14064 to explain the use of certain approaches or decisions taken. Explanation will generally include documentation of the following:

- How approaches were used or decisions taken.
- Why approaches were chosen or decisions made.

Some clauses require users of this part of ISO 14064 to justify the use of certain approaches or decisions taken. Justification will generally include documentation of the following:

- How approaches were used or decisions taken.
- Why approaches were chosen or decisions made.
- Why alternative approaches were not chosen.

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Greenhouse gases —

Part 1:

Specification with guidance at the organization level for quantification and reporting of greenhouse gas emissions and removals

1 Scope

This part of ISO 14064 specifies principles and requirements at the organization level for quantification and reporting of greenhouse gas (GHG) emissions and removals. It includes requirements for the design, development, management, reporting and verification of an organization's GHG inventory.

ISO 14064 is GHG programme neutral. If a GHG programme is applicable, requirements of that GHG programme are additional to the requirements of ISO 14064.

NOTE If a requirement of ISO 14064 prohibits an organization or a GHG project proponent from complying with a requirement of the GHG programme, the requirement of the GHG programme takes precedence.

2 Terms and definitions

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

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 GHGs include carbon dioxide (CO₂), methane (CH₄), nitrous oxide (N₂O), hydrofluorocarbons (HFCs), perfluorocarbons (PFCs) and sulfur hexafluoride (SF₆).

2.2

greenhouse gas source

physical unit or process that releases a GHG into the atmosphere

2.3

greenhouse gas sink

physical unit or process that removes a GHG from the atmosphere

2.4

greenhouse gas reservoir

physical unit or component of the biosphere, geosphere or hydrosphere with the capability to store or accumulate a GHG removed from the atmosphere by a **greenhouse gas sink** (2.3) or a GHG captured from a **greenhouse gas source** (2.2)

NOTE 1 The total mass of carbon contained in a GHG reservoir at a specified point in time could be referred to as the carbon stock of the reservoir.

NOTE 2 A GHG reservoir can transfer greenhouse gases to another GHG reservoir.

NOTE 3 The collection of a GHG from a GHG source before it enters the atmosphere and storage of the collected GHG in a GHG reservoir could be referred to as GHG capture and storage.

2.5

greenhouse gas emission

total mass of a GHG released to the atmosphere over a specified period of time

2.6

greenhouse gas removal

total mass of a GHG removed from the atmosphere over a specified period of time

2.7

greenhouse gas emission or removal factor

factor relating activity data to GHG emissions or removals

NOTE A greenhouse gas emission or removal factor could include an oxidation component.

2.8

direct greenhouse gas emission

GHG emission from **greenhouse gas sources** (2.2) owned or controlled by the organization

NOTE This part of ISO 14064 uses the concepts of financial and operational control to establish an organization's operational boundaries.

2.9

energy indirect greenhouse gas emission

GHG emission from the generation of imported electricity, heat or steam consumed by the organization

2.10

other indirect greenhouse gas emission

GHG emission, other than energy indirect GHG emissions, which is a consequence of an organization's activities, but arises from **greenhouse gas sources** (2.2) that are owned or controlled by other organizations

2.11

greenhouse gas activity data

quantitative measure of activity that results in a GHG emission or removal

NOTE Examples of GHG activity data include the amount of energy, fuels or electricity consumed, material produced, service provided or area of land affected.

2.12

greenhouse gas assertion

declaration or factual and objective statement made by the **responsible party** (2.23)

NOTE 1 The GHG assertion may be presented at a point in time or may cover a period of time.

NOTE 2 The GHG assertion provided by the responsible party should be clearly identifiable, capable of consistent evaluation or measurement against suitable criteria by a **validator** (2.34) or **verifier** (2.36).

NOTE 3 The GHG assertion could be provided in the form of a **greenhouse gas report** (2.17) or GHG project plan.

2.13

greenhouse gas information system

policies, processes and procedures to establish, manage and maintain GHG information

2.14

greenhouse gas inventory

an organization's **greenhouse gas sources** (2.2), **greenhouse gas sinks** (2.3), GHG emissions and removals

2.15**greenhouse gas project**

activity or activities that alter the conditions identified in the baseline scenario which cause GHG emission reductions or GHG removal enhancements

2.16**greenhouse gas programme**

voluntary or mandatory international, national or sub-national system or scheme that registers, accounts or manages GHG emissions, removals, emission reductions or removal enhancements outside the organization or **greenhouse gas project** (2.15)

2.17**greenhouse gas report**

stand-alone document intended to communicate an organization's or project's GHG-related information to its **intended users** (2.24)

NOTE A GHG report can include a **greenhouse gas assertion** (2.12).

2.18**global warming potential****GWP**

factor describing the radiative forcing impact of one mass-based unit of a given GHG relative to an equivalent unit of carbon dioxide over a given period of time

NOTE Annex C contains global warming potentials produced by the Intergovernmental Panel on Climate Change.

2.19**carbon dioxide equivalent****CO₂e**

unit for comparing the radiative forcing of a GHG to carbon dioxide

NOTE 1 The carbon dioxide equivalent is calculated using the mass of a given GHG multiplied by its **global warming potential** (2.18).

NOTE 2 Annex C contains global warming potentials produced by the Intergovernmental Panel on Climate Change.

2.20**base year**

historical period specified for the purpose of comparing GHG emissions or removals or other GHG-related information over time

NOTE Base-year emissions or removals may be quantified based on a specific period (e.g. a year) or averaged from several periods (e.g. several years).

2.21**facility**

single installation, set of installations or production processes (stationary or mobile), which can be defined within a single geographical boundary, organizational unit or production process

2.22**organization**

company, corporation, firm, enterprise, authority or institution, or part or combination thereof, whether incorporated or not, public or private, that has its own functions and administration

2.23**responsible party**

person or persons responsible for the provision of the **greenhouse gas assertion** (2.12) and the supporting GHG information

NOTE The responsible party can be either individuals or representatives of an organization or project, and can be the party who engages the **validator** (2.34) or **verifier** (2.36). The validator or verifier may be engaged by the client or by other parties, such as the GHG programme administrator.

2.24

intended user

individual or organization identified by those reporting GHG-related information as being the one who relies on that information to make decisions

NOTE The intended user can be the **client** (2.25), the **responsible party** (2.23), GHG programme administrators, regulators, the financial community or other affected stakeholders (such as local communities, government departments or non-governmental organizations).

2.25

client

organization or person requesting **validation** (2.31) or **verification** (2.35)

NOTE The client could be the **responsible party** (2.23), the GHG programme administrator or another stakeholder.

2.26

directed action

specific activity or initiative, not organized as a **greenhouse gas project** (2.15), implemented by an organization to reduce or prevent direct or indirect GHG emissions or increase GHG removals

NOTE 1 ISO 14064-2 defines a GHG project.

NOTE 2 Directed actions can be continuous or discrete.

NOTE 3 GHG emission or removal differences that result from directed actions may occur within or outside the organizational boundaries.

2.27

level of assurance

degree of assurance the **intended user** (2.24) requires in a **validation** (2.31) or **verification** (2.35)

NOTE 1 The level of assurance is used to determine the depth of detail that a validator or verifier designs into their validation or verification plan to determine if there are any material errors, omissions or misrepresentations.

NOTE 2 There are two levels of assurance (reasonable or limited) that result in differently worded validation or verification statements. Refer to ISO 14064-3:2006, A.2.3.2, for examples of validation and verification statements.

2.28

materiality

concept that individual or an aggregate of errors, omissions and misrepresentations could affect the **greenhouse gas assertion** (2.12) and could influence the **intended users'** (2.24) decisions

NOTE 1 The concept of materiality is used when designing the validation or verification and sampling plans to determine the type of substantive processes used to minimize risk that the validator or verifier will not detect a **material discrepancy** (2.29) (detection risk).

NOTE 2 The concept of materiality is used to identify information that, if omitted or mis-stated, would significantly misrepresent a GHG assertion to intended users, thereby influencing their conclusions. Acceptable materiality is determined by the validator, verifier or GHG programme, based on the agreed level of assurance. See ISO 14064-3:2006, A.2.3.8, for further explanation of this relationship.

2.29

material discrepancy

individual or an aggregate of actual errors, omissions and misrepresentations in the **greenhouse gas assertion** (2.12) that could affect the decisions of the **intended users** (2.24)

2.30

monitoring

continuous or periodic assessment of GHG emissions and removals or other GHG-related data