
Greenhouse gases —

Part 2:

Specification with guidance at the project level for quantification, monitoring and reporting of greenhouse gas emission reductions or removal enhancements

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Gaz à effet de serre —

Partie 2: Spécifications et lignes directrices, au niveau des projets, pour la quantification, la surveillance et la déclaration des réductions

d'émissions ou d'accroissements de suppressions des gaz à effet de serre

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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 14064-2 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.

ISO 14064-1 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 in verification activities.

This part of ISO 14064 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. It 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. ISO 14064-3 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.

Figure 1 displays relationships among 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 organization 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.

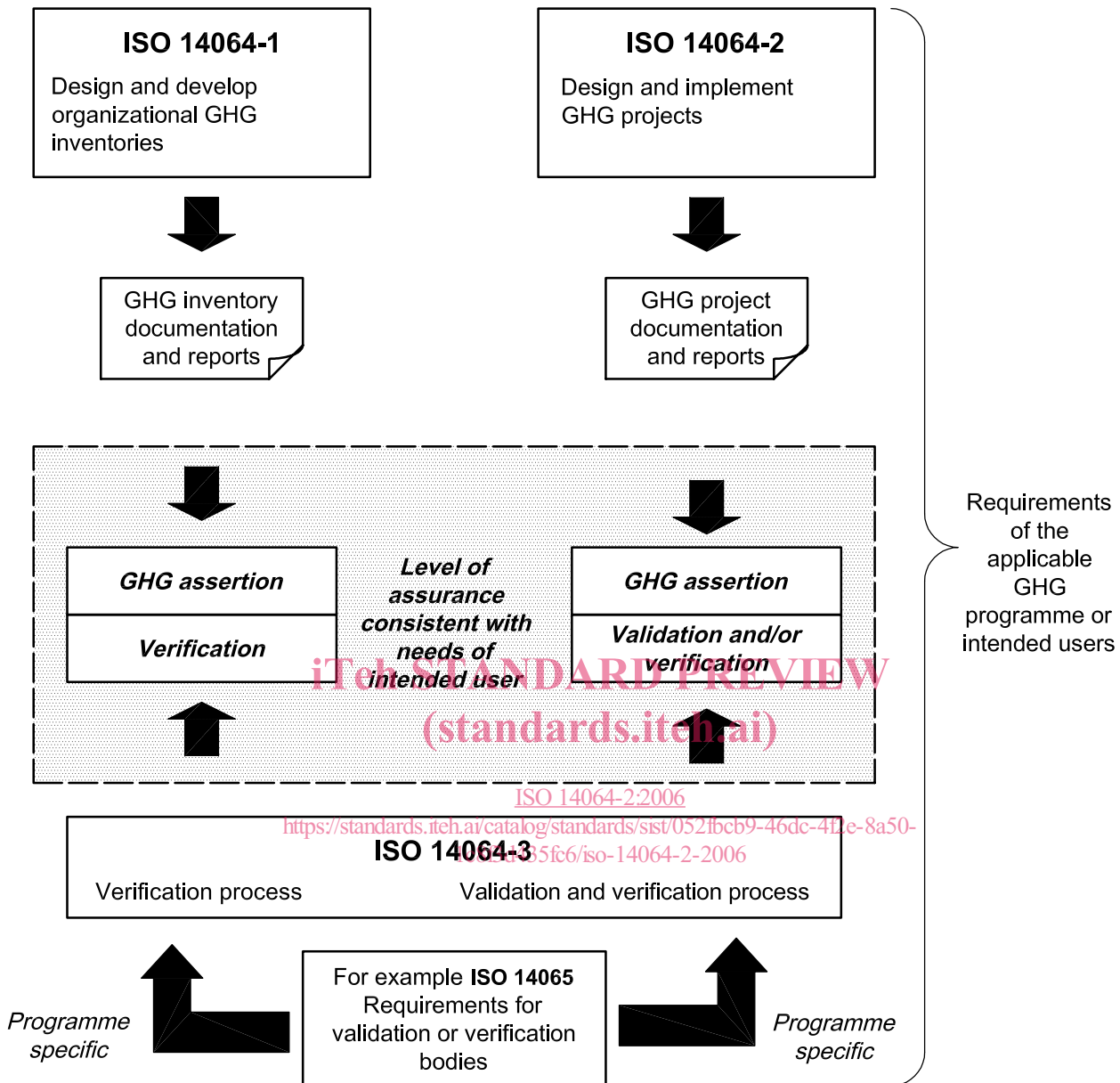


Figure 1 — Relationship between the parts of ISO 14064

0.3 A standardized approach for quantification, monitoring and reporting is required for GHG projects and any resulting GHG emission reductions and/or removal enhancements, in order that they are comparable among intended users and GHG programmes. Accordingly, this part of ISO 14064 specifies a general, GHG programme-neutral framework and uses terms and concepts designed to be compatible with other requirements and guidance from relevant GHG policies and programmes, good practice, legislation and standards. Reference [13] provides an example of good practice guidance.

This part of ISO 14064 deals with the concept of additionality by requiring that the GHG project has resulted in GHG emission reductions or removal enhancements in addition to what would have happened in the absence of that project. It does not use the term “additionality”, prescribe baseline procedures or specify additionality criteria. This part of ISO 14064 requires the project proponent to identify and select GHG sources, sinks and reservoirs relevant for the GHG project and for the baseline scenario. In order to be compatible with the broadest range of GHG programmes, it does not use the term “boundaries” to describe which GHG sources, sinks and/or reservoirs are considered for quantification, monitoring and reporting, but instead uses the concept

of relevant GHG sources, sinks and/or reservoirs. Thus the project proponent may apply additionality criteria and procedures, or define and use boundaries consistent with relevant legislation, policy, GHG programmes and good practice.

Quantification and monitoring of project-level GHG emissions, removals, emission reductions and removal enhancements is challenging because actual project performance is assessed against a hypothetical baseline scenario that represents what would have happened in the absence of the GHG project. Consequently, it is difficult to verify GHG emissions, removals and/or stocks of the baseline scenario. It is therefore important to demonstrate that the baseline scenario is consistent with the principles of this part of ISO 14064, including conservativeness and accuracy, in order to increase the level of confidence that GHG emission reductions and/or removal enhancements are credible and not over-estimated. Generally, the baseline scenario is determined on the basis of an assessment of alternative scenarios. For both the project and the baseline scenario, the quantification, monitoring and reporting of GHG emissions, removals and/or stocks by GHG sources, sinks and reservoirs is based on procedures developed by the project proponent or adopted from recognized authorities.

0.4 This part of ISO 14064 does not specify requirements for validation/verification bodies or validators/verifiers in providing assurance against GHG assertions or claims by GHG projects. Such requirements may be specified by the authority of the applicable GHG programme or can be found in ISO 14064-3. The process to recognize certified GHG emission reductions or removal enhancements as GHG units, credits or offsets is an extension of the GHG project cycle. The certification and crediting process, which may be under the authority of a GHG programme and may vary among GHG programmes, is also not included in the specifications of this part of ISO 14064.

Annex A contains additional information in cases where the project proponent wishes to conform to the United Nations Framework Convention on Climate Change (UNFCCC), Kyoto Protocol's Clean Development Mechanism (CDM) or Joint Implementation (JI) Mechanism.

0.5 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 2:

Specification with guidance at the project level for quantification, monitoring and reporting of greenhouse gas emission reductions or removal enhancements

1 Scope

This part of ISO 14064 specifies principles and requirements and provides guidance at the project level for quantification, monitoring and reporting of activities intended to cause greenhouse gas (GHG) emission reductions or removal enhancements. It includes requirements for planning a GHG project, identifying and selecting GHG sources, sinks and reservoirs relevant to the project and baseline scenario, monitoring, quantifying, documenting and reporting GHG project performance and managing data quality.

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 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 reduction**

calculated decrease of GHG emissions between a **baseline scenario** (2.19) and the project

**2.8
greenhouse gas removal enhancement**

calculated increase in GHG removals between a **baseline scenario** (2.19) and the project

**2.9
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.

**2.10
greenhouse gas assertion**

declaration or factual and objective statement made by the responsible party

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** (2.27) or **verifier** (2.29).

NOTE 3 The GHG assertion could be provided in the form of a **greenhouse gas report** (2.15) or GHG project plan.

**2.11
greenhouse gas information system**

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

**2.12
greenhouse gas project**

activity or activities that alter the conditions identified in the **baseline scenario** (2.19) which cause **greenhouse gas emission reductions** (2.7) or **greenhouse gas removal enhancements** (2.8)

**2.13
greenhouse gas project proponent**

individual or organization that has overall control and responsibility for a **greenhouse gas project** (2.12)

**2.14
greenhouse gas programme**

voluntary or mandatory international, national or sub-national system or scheme that registers, accounts or manages GHG emissions, removals, **greenhouse gas emission reductions** (2.7) or **greenhouse gas removal enhancements** (2.8) outside the organization or **greenhouse gas project** (2.12)

**2.15
greenhouse gas report**

stand-alone document intended to communicate an organization's or project's GHG-related information to its **intended users** (2.22)

NOTE A GHG report can include a **greenhouse gas assertion** (2.10).

2.16

affected greenhouse gas source, sink or reservoir

GHG source, sink or reservoir influenced by a project activity, through changes in market demand or supply for associated products or services, or through physical displacement

NOTE 1 While related GHG sources, sinks or reservoirs are physically linked to a GHG project, affected GHG sources, sinks or reservoirs are only linked to a GHG project by changes due to market demand and supply.

NOTE 2 An affected GHG source, sink or reservoir is generally off the project site.

NOTE 3 GHG emission reductions or removal enhancements offset by affected GHG sources, sinks or reservoirs are often referred to as leakage.

2.17

controlled greenhouse gas source, sink or reservoir

GHG source, sink or reservoir whose operation is under the direction and influence of the **greenhouse gas project proponent** (2.13) through financial, policy, management or other instruments

NOTE A controlled GHG source, sink or reservoir is generally on the project site.

2.18

related greenhouse gas source, sink or reservoir

GHG source, sink or reservoir that has material or energy flows into, out of, or within the project

NOTE 1 A related GHG source, sink or reservoir is generally upstream or downstream from the project, and can be either on or off the project site.

NOTE 2 A related GHG source, sink or reservoir also may include activities related to design, construction and decommissioning of a project.

2.19

baseline scenario

hypothetical reference case that best represents the conditions most likely to occur in the absence of a proposed **greenhouse gas project** (2.12)

NOTE The baseline scenario concurs with the GHG project timeline.

2.20

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 B contains global warming potentials produced by the Intergovernmental Panel on Climate Change.

2.21

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** (2.20).

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

2.22

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, the responsible party, GHG programme administrators, regulators, the financial community or other affected **stakeholders** (2.23), such as local communities, government departments or non-governmental organizations.

2.23

stakeholder

individual or organization that is affected by the development or implementation of a **greenhouse gas project** (2.12)

2.24

level of assurance

degree of assurance the **intended user** (2.22) requires in a **validation** (2.26) or **verification** (2.28)

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.

2.25

monitoring

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

2.26

validation

systematic, independent and documented process for the evaluation of a **greenhouse gas assertion** (2.10) in a GHG project plan against agreed validation criteria

NOTE 1 In some cases, such as in first-party validations, independence can be demonstrated by the freedom from responsibility for the development of GHG data and information.

NOTE 2 The content of a GHG project plan is described in 5.2.

2.27

validator

competent and independent person or persons with responsibility for performing and reporting on the results of a validation

NOTE This term can be used to refer to a validation body.

2.28

verification

systematic, independent and documented process for the evaluation of a **greenhouse gas assertion** (2.10) against agreed verification criteria

NOTE In some cases, such as in first-party verifications, independence can be demonstrated by the freedom from responsibility for the development of GHG data and information.

2.29

verifier

competent and independent person, or persons, with responsibility for performing and reporting on the verification process

NOTE This term can be used to refer to a verification body.