INTERNATIONAL STANDARD

ISO 14064-2

Redline version compares Second edition to First edition



Greenhouse gases —

Part 2:

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

Gaz à effet de serre 🛁

Partie 2: Spécifications et lignes directrices, au niveau des projets, pour la quantification, la surveillance et la rédaction de rapports sur les réductions d'émissions ou les accroissements de suppressions des gaz à effet de serre



Reference number ISO 14064-2:redline:2019(E)

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Text example 1 Text example 2 1.x	 Text has been added (in green) Text has been deleted (in red) Graphic figure has been added Graphic figure has been deleted If there are changes in a clause/subclause, the corresponding clause/ 		
	subclause number is <mark>highlighted in yellow</mark> in the Table of contents		

DISCLAIMER

This marked-up version highlights the main changes in this edition of the document compared with the previous edition. It does not focus on details (e.g. changes in punctuation).

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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 The procedures used to develop this document and those intended for its further maintenance are described in the ISO/IEC Directives, Part 1. In particular, the different approval criteria needed for the different types of ISO documents should be noted. This document was drafted in accordance with the rules given in editorial rules of the ISO/IEC Directives, Part 2 (see www .iso.org/directives].

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 easting 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. Details of any patent rights identified during the development of the document will be in the Introduction and/or on the ISO list of patent declarations received (see www.iso.org/patents).

Any trade name used in this document is information given for the convenience of users and does not constitute an endorsement.

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

ISO 14064-2 This document was prepared by Technical Committee ISO/TC 207, *Environmental management*, Subcommittee SC 7, *Greenhouse gas management and related activities*.

ISO 14064 consists of the following parts This second edition cancels and replaces the first edition (ISO 14064-2:2006, under the general title), which has been technically revised. The main changes compared with the *Greenhouse gases* previous edition are as follows:

- Part 1. Specification with guidance at the organization level for quantification and reporting of greenhouse gas emissions and removals the concept of additionality and the baseline scenario have been changed;
- 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 assertionstext related to the Kyoto mechanism has been deleted.

A list of all parts in the ISO 14064 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 <u>www.iso.org/members.html</u>.

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.



Relationship between the parts of ISO 14064 Figure 1 stand

0

X

Full A standardized approach for quantification, manitoring and reporting is required for GHG projects 0.7 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 and sander is strand and taken. Justification will generally include documentation of the following:

Why approaches were chosen or decisions made: in the set

Why alternative approaches were not chosen and the ailcata iten

0.1 Background

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

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

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

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

The ISO 14060 family of standards provides clarity and consistency for quantifying, monitoring, reporting and validating or verifying GHG emissions and removals to support sustainable development through low-carbon economy and to benefit organizations, project proponents and interested parties worldwide. Specifically, the use of the ISO 14060 family of standards:

- enhances the environmental integrity of GHG quantification;
- enhances the credibility, consistency and transparency of GHG quantification, monitoring, reporting, verification and validation;
- facilitates the development and implementation of GHG management strategies and plans;

- facilitates the development and implementation of mitigation actions through emission reductions or removal enhancements;
- facilitates the ability to track performance and progress in the reduction of GHG emissions and/or increase in GHG removals.

Applications of the ISO 14060 family of standards include:

- corporate decisions, such as identifying emission reduction opportunities and increasing profitability by reducing energy consumption;
- carbon risk management, such as the identification and management of risks and opportunities;
- voluntary initiatives, such as participation in voluntary GHG registries or sustainability reporting initiatives;
- GHG markets, such as the buying and selling of GHG allowances or credits;
- regulatory/government GHG programmes, such as credit for early action, agreements or national and local reporting initiatives.

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

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

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

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

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 verification or validation, including verification or validation 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 have to be able to perform.

ISO 14067 defines the principles, requirements and guidelines for the quantification of carbon footprint of products. The aim of ISO 14067 is to quantify GHG emissions associated with the life cycle stages of a product, beginning with resource extraction and raw material sourcing and extending through the production, use and end-of-life stages of the product.

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

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



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

0.2 Approach of this document

A standardized approach for quantification, monitoring and reporting is needed 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 document 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 [14] provides an example of good practice guidance.

This document contains general requirements for GHG projects and does not prescribe specific criteria and procedures. GHG programmes (e.g. GHG offset programmes) may apply additional requirements on GHG projects in relation to additionality, specific methodologies, project baselines, etc. Although this document leaves specific criteria and requirements related to additionality to individual programmes, it does require that the GHG project should result in emission reductions or removal enhancements in addition to what would have happened in the absence of the project.

This document requires the project proponent to identify and select GHG sources, sinks and reservoirs (SSRs) relevant for the GHG project and to determine the GHG baseline. GHG project emissions/removals and baseline scenario emissions/removals are quantified separately, and the emission reductions

and/or removal enhancements are calculated by comparison of the GHG project emissions/removals with the baseline scenario emissions/removals. It is important to demonstrate that the GHG baseline is consistent with the principles of this document, 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 GHG baseline could be determined based on historical information or setting of alternative scenarios according to the requirements of the intended user/ programme. For both the project emissions and the baseline scenario, the quantification, monitoring and reporting of GHG emissions and removals are based on procedures developed by the project proponent or adopted from a GHG programme.

This document does not use the term "project boundary". In order to be compatible with the broadest range of GHG programmes, project boundary is referred to as SSR that are relevant to the project. If any GHG programme requires a specific time period or methodology, these can be compared to the GHG baseline and estimated project emissions. Any discrepancies are recorded and reported in the GHG report.

This document does not specify requirements for verification/validation bodies or verifiers/validators in providing assurance against GHG statements 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 document.

Annex A provides guidance on the use of this document.

0.3 Significance of the terms "explain" and "justify" in this document

Some clauses require users of this document to explain and justify the use of certain approaches or Lail and a start 5-e-enderster and the clippe Full stand standa decisions taken.

Explanation generally includes:

how approaches were used or decisions taken; a)

why approaches were chosen or decisions made. b) Aded stan

Iustification has two more criteria:

c) explain why alternative approaches were not chosen;

provide supporting data or analysis. d)

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 document specifies principles and requirements and provides guidance at the project level for the 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 (SSRs) relevant to the project and baseline scenario, monitoring, quantifying, documenting and reporting GHG project performance and managing data quality.

The ISO 1406414060 family of standards is GHG programme neutral. If a GHG programme is applicable, the requirements of that GHG programme are additional to the requirements of the ISO 1406414060 family of standards.

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 Normative references

There are no normative references in this document.

23 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 1 to entry. GHGs include carbon dioxide (CO_2), methane (CH4), nitrous oxide (N_2O), hydrofluorocarbons (HFCs), perfluorocarbons (PFCs) and sulfur hexafluoride (SF_0).

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 to entry. 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 to entry. A GHG reservoir can transfer greenhouse gases to another GHG reservoir.

Note 3 to entry. 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.

spd3.

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 and the project 10)A-2-2019

2.9 greenhouse gas removal enhancement calculated increase in GHG removals between a baseline scenario (2.12) and the project anda Fullstand atalogistan

2.9

greenhouse gas emission or removal factor

factor relating activity data to GHG emissions or removals

removal factor could include an oxidation component. Note 1 to entry. A greenhouse gas emission or Ilstandar Aded-8

$\frac{2.10}{2.10}$

greenhouse gas assertion

declaration or factual and objective statement made by the responsible party

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

Note 2 to entry. 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 (2.22).

Note 3 to entry. 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

$\frac{2.12}{2.12}$

greenhouse gas project

activity or activities that alter the conditions identified in the baseline scenario (2.12) which cause greenhouse gas emission reductions (2.7) or greenhouse gas removal enhancements (2.0)

$\frac{2.13}{2.13}$

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 (2.0) outside the organization or greenhouse gas project (2.12)

$\frac{2.15}{2.15}$

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 1 to entry. 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 to entry. 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 to entry. An affected GHG source, sink or reservoir is generally off the project site.

Note 3 to entry. GHG emission reductions or removal enhancements offset by affected GHG sources, sinks or Histigooged RE reservoirs are often referred to as leakage. 11.21

$\frac{2.17}{2.17}$

4-2-2019 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 1 to entry. A controlled GHG source, Sink of reservoir is generally on the project site.

$\frac{2.10}{2.10}$

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 to entry. 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 to entry. 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 1 to entry. The baseline scenario concurs with the GHG project timeline.

$\frac{2.20}{2}$

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 1 to entry. Annex D contains global warming potentials produced by the Intergovernmental Panel on Climate Change.