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Greenhouse gas management and related activities — Framework and principles for methodologies on climate actions

Gestion des gaz à effet de serre et activités associées — Cadre et principes des méthodologies applicables aux mesures en faveur du climat

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Foreword

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

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For an explanation on 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 the following URL: www.iso.org/iso/foreword.html.

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

Introduction

The framework in this document provides guidance to countries and other interested parties on a consistent, comparable and transparent approach to selecting, proposing, using, revising and maintaining methodologies on climate action. These methodologies are designed to be reproducible and aim to help climate action and its ambitious goals to be achieved.

The framework supports various organizations, such as:

— government and non-state actors, including local government, industrial associations, technical institutions, and methodology developers and users;

— private and public organizations, environmental NGOs, and other organizations that use climate action methodologies;

— financial institutions that support climate actions.

In addition to methodologies, the framework can also be developed and used for policies and measures.

The developed framework can be used to identify potential and justifiable actions for both climate change mitigation and adaptation.

This document supports many objectives, such as:

— engaging on a voluntary basis in cooperative approaches that involve the use of internationally transferred mitigation outcomes towards nationally determined contributions;

— promoting sustainable development and ensuring credibility and transparency, including in governance;

— increasing accountability to ensure, for example, the avoidance of double counting;

— setting goals for enhancing adaptive capacity, strengthening resilience and reducing vulnerability to climate change;

— contributing to sustainable development and ensuring an adequate adaptation response in the context of the temperature goal;

— cooperating internationally on adaptation efforts, recognizing the importance of taking into account the needs of developing countries.

This document can be used to develop a framework that is compatible with relevant local, national, regional and international climate change policies, and strategies of a country or other interested parties. The framework and its methodology process support a long-term vision on the importance of fully realizing technological and non-technological innovation transfer in order to improve resilience to climate change and to reduce emissions. This document supports the “pledge and review” system with measures undertaken to collect and compile the relevant climate data and relevant information relating to the long-term vision. This document supports all countries, both developed and developing, to better understand and develop their nationally determined contributions.

It aims to increase transparency related to measurement, reporting and verification (MRV), and to reduce risks for cooperative mitigation and adaptation actions. It recognizes the importance of international cooperation on adaptation and mitigation efforts and of taking into account the needs of developing countries.

It highlights the importance of averting, minimizing and addressing loss and damage associated with the adverse effects of climate change, including extreme weather events and slow onset events, and the role of sustainable development in reducing the risk of loss and damage.

It takes into account the Cancun Adaptation Framework[20], including identifying and encouraging good practices, effective adaptation practices, adaptation needs and priorities, support provided and received for adaptation actions and efforts, challenges and gaps.

This document provides a framework to result in:

— adoption of the methodology among best practices and best available technology (BAT);

— improvements in the quality of methodologies;

— improvements in the processes for methodology development;

— improvements in transparency and clarity of climate actions.

Figure 1 illustrates the role and purpose of this document.

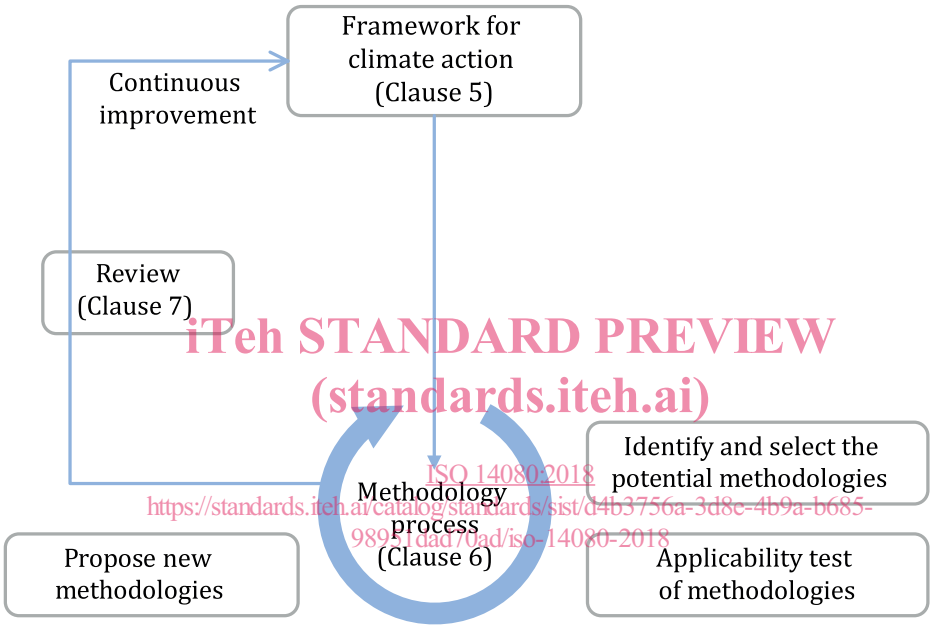

Figure 1 — This document in the context of a framework and methodologies

This document facilitates the harmonization of existing International Standards (e.g. ISO 14001, ISO 50001, ISO 14064-1 and ISO 14064-2) as well as future International Standards (e.g. related to climate adaptation) to be used to support climate action.

It also provides guidance on how to review the framework and on appropriate communication. This should reduce the risk of inconsistencies in the reporting of aggregated climate actions, by connecting various climate actions with various methodologies and communication responses and reports for disclosing climate actions, thereby saving time and resources.

Greenhouse gas management and related activities — Framework and principles for methodologies on climate actions

1 Scope

This document gives guidelines by means of a framework and principles for establishing approaches and processes to:

— identify, assess and revise methodologies;

— develop methodologies;

— manage methodologies.

This document is applicable to climate actions to address climate change, including adaptation to its impacts and greenhouse gas (GHG) mitigation in support of sustainability. Such actions can be used by or for projects, organizations, jurisdictions, economic sectors, technologies and products, policies, programmes and non-government activities.

This document does not create guidance for a specific methodology.

2 Normative references

There are no normative references in this document.

3 Terms, definitions and abbreviated terms

3.1 Terms and definitions

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

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

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

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

3.1.1 General

3.1.1.1
climate action
initiative to achieve climate change measures or goals based on mitigation and/or adaptation priorities under climate change policies

Note 1 to entry: Climate action intends to a) reduce or prevent emissions or enhance removals, and b) reduce vulnerability, maintain and increase the resilience, and increase adaptive capacity of human and ecological systems from adverse climate change impacts.

3.1.1.2
environmental integrity
environmental soundness and enhancement of mitigation and/or adaptation actions that do not lead to direct or indirect environment harm

3.1.1.3
eligibility criteria
criteria used to demonstrate that mitigation or adaptation actions are based on appropriate methodologies that reduce current and/or future climate change risk

3.1.1.4
organization
person or group of people that has its own functions with understood responsibilities, authorities and relationships to achieve its objectives

[SOURCE: ISO 14001:2015, 3.1.4, modified — In the definition, "understood" has been added.]

3.1.1.5
interested party
individual or group that has an interest in any decision or activity of an *organization* (3.1.1.4)

3.1.2 Mitigation

3.1.2.1
climate change mitigation
human intervention to reduce the sources or enhance the sinks of greenhouse gases (GHGs)

[SOURCE: Intergovernmental Panel on Climate Change, IPCC Fifth Assessment Report: Climate Change 2014 (AR5)]

3.1.2.2
baseline
state against which change is measured

[SOURCE: Intergovernmental Panel on Climate Change, IPCC Fifth Assessment Report: Climate Change 2014 (AR5)]

3.1.3 Adaptation

3.1.3.1
climate change adaptation
adjustments in ecological, social and/or economic systems in response to actual or expected climatic stimuli or their effects or impacts

EXAMPLE Change to infrastructure and/or some natural systems to reduce the impacts of increased/decreased rainfall, higher temperatures, scarce water or more frequent storms.

Note 1 to entry: Adaptation/climate adaptation refers to change in processes, practices and structures to moderate potential damages or to benefit from opportunities associated with climate change.

Note 2 to entry: Human intervention may facilitate adjustment in some ecological systems to expected climate and its effects.

3.1.3.2
climate scenario
plausible and often simplified representation of the future climate, based on an internally consistent set of climatological relationships that has been constructed for explicit use in investigating the potential consequences of anthropogenic climate change

Note 1 to entry: Climate scenarios often serve as input to impact models.

[SOURCE: Intergovernmental Panel on Climate Change, IPCC Fifth Assessment Report: Climate Change 2014 (AR5 WG III)]

3.1.3.3
climate risk
potential of negative impacts of climate change that reflects the interaction among vulnerability, exposure and hazard

Note 1 to entry: Climate risk can be reduced by enhancing adaptive capacity and strengthening resilience of ecology, society and economy.

[SOURCE: Intergovernmental Panel on Climate Change, IPCC Fourth Assessment Report: Climate Change 2007 (AR4)]

3.1.3.4
exposure
presence of people, livelihoods, species or ecosystems, environmental functions, services, and resources, infrastructure, or economic, social, or cultural assets in places and settings that could be adversely affected by climate variability or change

[SOURCE: Intergovernmental Panel on Climate Change, IPCC Fifth Assessment Report: Climate Change 2014 (AR5)]

3.1.3.5
adaptive capacity
ability of systems, institutions, humans, and other organisms to adjust to potential damage, to take advantage of opportunities, or to respond to consequences

[SOURCE: Intergovernmental Panel on Climate Change, IPCC Fifth Assessment Report: Climate Change 2014 (AR5)]

3.1.3.6
resilience
capacity of social, economic, and environmental systems to cope with a hazardous event or trend or disturbance, responding or reorganizing in ways that maintain their essential function, identity and structure, while also maintaining the capacity for adaptation, learning and transformation

[SOURCE: Intergovernmental Panel on Climate Change, IPCC Fifth Assessment Report: Climate Change 2014 (AR5)]

3.1.3.7
sensitivity
degree to which a system or species is affected, either adversely or beneficially, by climate variability or change

Note 1 to entry: The effect may be direct (e.g. a change in crop yield in response to a change in the mean, range or variability of temperature) or indirect (e.g. damages caused by an increase in the frequency of coastal flooding due to sea level rise).

[SOURCE: Intergovernmental Panel on Climate Change, IPCC Fifth Assessment Report: Climate Change 2014 (AR5)]

3.1.3.8
vulnerability
propensity or predisposition to be adversely affected by climate variability or change

Note 1 to entry: Climate change vulnerability encompasses a variety of concepts and elements, including sensitivity or susceptibility to harm and lack of capacity to cope and adapt.

Note 2 to entry: Climate change vulnerability is the degree to which an ecological, social and economic system is susceptible to, or unable to cope with, adverse climate change impacts, including climate variability and extremes.

3.1.3.9
vulnerability assessment
identification of and predictions for vulnerable groups, critical areas and regions, including estimation of the likelihood and consequence of hazard related to climate change impacts

3.2 Abbreviated terms

BAT best available technology

BAU business as usual

GTP global temperature potential

GWP global warming potential

GHG greenhouse gas

MRV measurement, reporting and verification

QA quality assurance

QC quality control

4 Principles

These principles are general and should be used for a framework on climate action.

a) Relevance: include information about climate action that is material and relevant to the needs of the intended user.

b) Consistency: ensure coherence of the framework and its methodologies and adherence to the goals, targets and objectives for climate action.

c) Comparability: ensure that the methodologies generated, selected and provided for climate action allow for relevant performance-based comparisons.

d) Compatibility: harmonize methodologies on climate action to improve the aggregation and cost-effectiveness of applying them.

e) Completeness: include all relevant emissions and removals, and/or adaptation and mitigation efforts. Include all relevant information to support applicable criteria and procedures.

f) Conservativeness: use assumptions, values and procedures that ensure the impacts of climate action are not overestimated.

g) Accuracy: reduce bias and uncertainties so far as is practical.

h) Practicality: focus on the framework and its methodologies, and include relevant indicators or metrics to meet the needs of the intended users taking into account their accessible resources.

i) Flexibility: allow the framework and its methodologies to accommodate data availability, and technical and institutional capacities.

j) Credibility: increase confidence through trust, integrity, transparency and accountability throughout the methodologies and their process.

k) Transparency: disclose sufficient and relevant information to enable the intended users to make decisions with reasonable confidence in achieving the goals, targets and objectives of climate actions.

5 Framework for methodologies on climate action

5.1 General

The organization should establish a framework for methodologies with the following information to support climate action:

— climate change policy, strategy and regulation (5.2);

— goals and scope (5.3);

NOTE 1 Goals include targets and objectives.

— MRV, which is undertaken to collect data on emissions, removals, climate change mitigation and/or adaptation actions. This information should be compiled into inventories and reports, and be subject to review or analysis. Annex F provides guidance on MRV in the framework. Annex G shows the relationship between adaptation MRV and adaptation monitoring and evaluation.

NOTE 2 MRV serves to evaluate, track and quantify the impacts of the implemented actions.

The framework for methodologies should:

— be designed strategically, consistent with climate action;

— use a risk-based approach, including climate risk and its associated financial risk, in developing the appropriate methodologies.

The organization should determine:

— the interested parties relevant to climate change issues;

— the needs and expectations of these interested parties;

— which of these needs and expectations are relevant to meet climate goals.

The organization should demonstrate the effectiveness of its framework on climate action.

The top management of the organization who develops the framework should:

— have responsibility for the effectiveness of the framework and for communication to interested parties;

— ensure availability of the human, financial and material resources required.

5.2 Climate change policy, strategy and regulations

When developing the framework, the organization should have a procedure for identifying and understanding the following information:

a) climate change policy and regulations relevant to local, national, regional and international situations, including objectives and priorities, current emissions, current mitigation and adaptation activities, climate change trends, impacts, vulnerabilities, resilience and statements of long-term goals or vision;

b) climate change strategy, including goals, targets and objectives; its projection and scenario of the country/region, including mitigation and adaptation actions, as applicable;

c) climate change strategy of the sector, including the value chains, as applicable;

NOTE The value chain will encompass more actors than the supply chain.

d) climate change needs and expectations of interested parties, including value chains, as applicable.

5.3 Goals and scope

When developing the framework, the organization should establish long-term goals and a scope, taking into account the elements of sustainability development, such as the 17 UN Sustainable Development Goals (SDGs) of the 2030 Agenda, and should consider how the framework can contribute to environmental, economic and social benefits to sustainable development. For example:

a) environment: use products and services with lower emissions, and adopt innovation for resource efficiency;

b) economy: encourage the use of local labour and develop technical competence for a circular economy;

c) society: encourage sustainable development within a circular society, reducing climate risks for economic sectors.

The framework should identify types of climate action for mitigation and/or adaptation. Such types could be activities for communities, economic sectors, entities or projects, as well as for products, including services. At the project level, the framework can be applicable for mandatory crediting purposes or for voluntary crediting purposes.

The framework should take into account research and development and/or investment opportunities for technological and non-technological innovation (e.g. behaviour change) for adaptation, mitigation and sustainable development.

The framework should encourage the organization to be innovative and competitive in the development of technological and non-technological innovation with respect to their business, in order to help them contribute to sustainable economic growth. The framework should also help organizations to make decisions on the timing of investments in new and innovative technologies.

When financial support is expected, the following information can be added into the framework:

— roles, responsibilities and authorities;

— sources of financing;

— timelines and milestones;

— sustainability from the finance and resource perspective;

— other key indicators or metrics, such as indicators or metrics for monitoring implementation and performance evaluation.

If any global climate action of the framework takes place in developing countries, the relevant international cooperation related to capacity building for technological and non-technological innovation transfer should be covered under the framework.

NOTE Annexes A and C provide guidance on developing the goals and scope of the framework to support climate action on mitigation and adaptation.

6 Methodologies and their development process within the framework

6.1 General

The organization should establish methodologies and their development process within the framework. The functions of the framework should be:

a) identifying potential methodologies among existing methodologies (6.2);

b) testing potential methodologies to see if these methodologies are directly applicable or require revision or modification (6.3);

c) proposing new methodologies, including testing their applicability (6.4);

d) maintaining and updating the methodologies (6.5);

e) including communication in the methodology profile (6.6).

NOTE Annexes B and D provide guidance for methodologies and their development process for mitigation and adaptation.

6.2 Identifying potential methodologies among existing methodologies

The organization that will use the framework should identify and select candidate methodologies that address the goals and scope of the framework.

The selection of potential methodologies may come from:

a) relevant standard methodologies;

b) other relevant sectorial methodologies;

c) BAT and good practices.

NOTE For specific economic sectors and countries, the approved standardized baseline[19] from the United Nations Framework Convention on Climate Change (UNFCCC) provides guidance in relation to GHG emission or removal factors and could be used to help the organization plan the initiative.

The organization should take into account whether the methodology has been validated and/or verified, as well as positive reports, such as an accredited testing reports.

The organization should justify and document the selection of potential methodologies.

6.3 Testing potential methodologies for applicability

The organization should test the selected methodologies identified according to 6.2 to confirm that they meet applicability and compatibility criteria of the framework (e.g. for a climate action plan, national contributions and other result-based mechanisms to enhance environmental integrity and economic and social benefits).

When the organization tests the applicability and determines not to select a methodology because of potential barriers, such as economic, technical or human resources, the organization should identify and document these barriers.

The organization should test and document the intended outcomes.

EXAMPLE The intended outcomes could be:

— total emission reduction and/or improvement of emission intensity for mitigation toward a target;

— its projection and future climate scenario;

— low-carbon products and services to contribute to sustainable development;

— contribution and/or cooperation with other countries;

— development of new and innovative technologies and methodologies to challenge the status quo;

— data and relevant information, including assessing and managing uncertainty;

— justification of the application of the target and related methodologies;

— monitoring performance, including evaluation of the investment and benefits.

The organization should determine if the methodology is directly applicable or if a revision is necessary.