
2 Key concepts, steps and principles

This chapter introduces key concepts in this guide, provides an overview of the steps involved in the technical review of assessment reports, and outlines the principles to help guide the technical review.

Checklist of key recommendations

- Base the technical review on the principles of ethical conduct, fair presentation, due professional care, independence and an evidence-based approach

2.1 Key concepts

This section describes several key concepts that are relevant to the guide.

2.1.1 Technical review

Technical review is a process that evaluates an assessment report in accordance with the criteria and scope of the review. The criteria and scope are discussed and agreed between the user and the technical reviewer. The criteria typically include evaluation of the assessment report for consistency with ICAT key recommendations, and the scope describes the elements of the policy and impact assessment that will be reviewed.

The technical review process results in a written technical review report and technical review statement. The statement contains the conclusion of the review. The report also provides findings on any issues identified, and suggestions for improvement for future impact assessments.

Technical review can be conducted in a similar way to the review processes under UNFCCC. The modality for review used by Parties not included in Annex I to the Convention (“non-Annex I Parties”) is international consultation and analysis (ICA). Through this review process, technical experts undertake a technical analysis of biennial update reports (BURs) in consultation with the non-Annex I Party and

through a facilitative sharing of views, resulting in a summary report.⁷

The modality for review for Annex I Parties is international assessment and review (IAR). Through this review process, Parties included in Annex I to the Convention participate in the review of GHG inventories, biennial reports and national communications. These are intended to satisfy “the need to have a cost-effective, efficient and practical review process that does not impose an excessive burden on Parties, experts or the secretariat”.⁸

The Cancun Agreements outlined different objectives for these two processes. IAR is to be conducted with the goal of promoting comparability and building confidence, whereas the main objective of ICA is to increase transparency of mitigation actions and their effects. In addition, IAR is to be a robust, rigorous and transparent process, whereas ICA is to be non-intrusive, non-punitive and respectful of national sovereignty.

This guide draws upon experience of GHG auditing and accreditation under programmes such as the CDM and voluntary carbon market programmes. To cover the range of objectives of potential users and circumstances, the approach to technical review within ICAT is a hybrid of ICA and IAR. The scope and steps of this guide seek to merge the rigour of IAR with the more facilitative and mentoring elements of ICA. Technical review in this guide aims to be a flexible learning experience that provides an opportunity to enhance performance over time using the feedback that comes through a review process.

2.1.2 Verification

Verification is an empirical process of data collection and analysis carried out by an independent party

⁷ Biennial transparency reports (BTRs) established under the Paris Agreement, and their technical review process and multilateral consideration of progress will supersede BURs, ICA, IAR and biennial report requirements from December 2024.

⁸ UNFCCC (2014).

with technical qualifications to determine (1) whether, or to what extent, an entity is meeting its obligations under a treaty or against a standard, or (2) that an assertion or claim made by an entity to show their compliance with a treaty or standard is true.

Multiple normative frameworks, standards and compliance mechanisms establish verification as a process that is fundamental to the reliability of what has been reported. Voluntary GHG, sustainability and supply chain programmes also use the verification process as a means for projects to independently demonstrate conformity to standards or requirements.

Verification has played an important role in compliance mechanisms by holding entities accountable, and allowing them to demonstrate and confirm progress. Independent verification of an entity's compliance with standards and requirements helps to ensure ongoing compliance, helps to identify potential compliance risk and complements the entity's internal monitoring system.

2.1.3 Assessment report and assessment statement

An assessment report, which is completed by the user, documents the assessment process, and the GHG, sustainable development and/or transformational impacts of the policy. Where technical review is pursued, the assessment report also documents all the information necessary to demonstrate how the impact assessment fulfils the key recommendations followed. Each ICAT assessment guide has a chapter on reporting that outlines the information that should be included in the assessment report. This includes a description of the policy; the assessment boundary; and methods, data and assumptions used in the assessment.

An assessment statement is a statement made by the user that summarizes the assessment process and the results of the impact assessment. An example assessment statement (abbreviated, for illustration only) might include the following: "The ICAT *Renewable Energy Methodology*, *Sustainable Development Methodology* and *Stakeholder Participation Guide* were used as the basis for the impact assessment. The impact assessment is consistent with the key recommendations within these documents. The key recommendations listed below were not followed, for the reasons given: ...".

2.1.4 Evidence

Evidence is the data sources, estimation and assessment methods or tools, and documentation used to estimate the impacts. Evidence supports the assessment report and the assessment statement. Evidence should be sufficient in quantity and appropriate in quality.

2.1.5 Technical review report and technical review statement

A technical review report, which is completed by the technical reviewer, documents the process that was followed to evaluate the assessment report in accordance with the criteria and scope of the review. It demonstrates how the impact assessment fulfils the key recommendations followed.

A technical review statement is a statement made by the technical reviewer that provides a summary of the review process and the reviewer's conclusion of the technical review. The statement includes the summarized conclusions of the technical review findings. If the technical reviewer determines that a conclusion cannot be reached, the review statement should cite the reason(s).

2.1.6 Materiality

Materiality is the concept applied to determine whether errors, omissions or misrepresentations in information could affect an assessment statement regarding GHG, sustainable development and/or transformational impacts. Materiality is a discrepancy or difference between the reported impacts and the impacts that would have been reported following the proper application of the assessment guide. It has quantitative and qualitative aspects.

When assessing quantitative materiality, a materiality threshold is established. Errors, omissions or misrepresentations are considered to be material if they cause the estimated results to be overestimated or underestimated by more than the threshold allows. Materiality of misstatements is considered individually and in aggregate (with all misstatements). Some items may also be material by their omission. For example, a user makes a small error in calculating the GHG emissions reductions of a policy. The error results in an overstatement of GHG emissions reductions by 12% compared with the estimate if the error had not been made. This discrepancy is large enough that GHG emissions reductions overstate those achieved beyond the established 10% materiality threshold.

This error is considered material, and the verifier would require the user to correct the error.

When assessing qualitative materiality, the reviewer determines whether the assessment conforms to the eligibility or applicability criteria of the guidance, methods, tools or requirements being applied. Some qualitative discrepancies can be considered material. The series of ICAT assessment guides provides a flexible approach and does not set eligibility or applicability criteria, but other external guidance, methods, tools or requirements that the user is following may do so.

In determining whether to apply the concept of materiality, users should consider the aspects that are needed to achieve their objectives. Although the materiality concept is commonly applied to GHG impact assessments, it can also be applied for sustainable development or transformational impacts.

2.1.7 Assurance

Assurance is a statement that gives confidence or certainty about the information that is reported in an impact assessment. In financial auditing, assurance refers to the practice of expressing a conclusion with a specified degree of confidence about the outcome of an assessment. Methods for providing assurance that have been successfully implemented by the financial sector – limited assurance, reasonable assurance and agreed-upon procedures – are described below. Limited and reasonable levels of assurance have also been used in GHG auditing.

Standards such as ISO 14064-3: “Greenhouse gases – Part 3: Specification with guidance for the validation and verification of greenhouse gas assertions” and ISAE 3000: “International standard on assurance engagements” identify two types of assurance engagements: limited assurance and reasonable assurance. Reasonable assurance is a higher level of assurance, and a positive form of expression is issued. The objective of a reasonable assurance engagement is to reach an opinion on whether the subject matter is materially free from misstatement. Limited assurance is a lower level of assurance, and a negative form of expression is issued. The objective of a limited assurance engagement is to reach a conclusion that is meaningful and not misstated based on the work performed. [Table 9.2](#) in [Section 9.3](#) provides example forms of expression for each of type of assurance.

The distinction between limited and reasonable assurance mostly comes down to the amount of

time and effort invested or evidence evaluated. The work required for a limited assurance review is substantially less detailed than for reasonable assurance. Another distinction between these methods is the amount of liability that the reviewer is willing to accept with their written report and opinion. The reviewer accepts less liability with limited assurance than with reasonable assurance.

Verification conducted to a limited or reasonable level of assurance is associated with a certain level of rigour that can be higher than verification conducted without a level of assurance. These types of assurance are useful where the data or information to be verified may generate a tradable asset (e.g. emissions trading programmes). The level of rigour involved in verification of tradable assets is particularly important because of the liability associated with such assets. Where users are assessing impacts – whether or not they result in tradable assets – it is suggested that the level of assurance, if selected, should apply to the data (e.g. quantified and monitored GHG emissions data), but not necessarily to following key recommendations.

For GHG, sustainable development or transformational impact assessments that do not lead to the generation of a tradable asset or unit, it may be impractical to apply the concepts of limited and reasonable assurance. In such cases, the user and reviewer can agree to a more flexible and tailor-made type of assurance known as agreed-upon procedures.

An agreed-upon procedures engagement is where a user engages an auditor to conduct a limited review of specific documents or operational processes. The nature and extent of the audit are agreed upon between the auditor and the user. The nature, timing and extent of the agreed-upon procedures can vary, because the user’s needs can vary. The user is responsible for ensuring that the procedures are sufficient, since they have the best understanding of their own needs. The auditor performs a review as per the agreed-upon procedures and provides factual findings, but does not provide an opinion of the findings. The recipients of the report form their own conclusions about the findings.⁹

⁹ AICPA (2016).

2.2 Overview of steps

This guide is organized according to the steps a user and technical reviewer follow in conducting a technical review (see [Figure 1.1](#)). Part I provides an introduction to the guide and technical review concepts. Part II describes the different types of technical review, the factors to consider when selecting a type of review, and the qualifications of technical reviewers. Part III describes the steps in the technical review process, and is written for both the user and the technical reviewer.

Some elements within the steps of the technical review process are tasks, functions or decisions for the user, the reviewer, or both. To help both the user and the technical reviewer understand, prepare for, and undertake, a technical review, the guide notes where tasks or functions pertain to the user or the technical reviewer.

[Figure 2.1](#) illustrates the technical review process, and indicates where the user and technical reviewer are involved. The six steps of technical review are covered in [Chapters 5–9](#). The process of technical review begins after an ex-ante or ex-post impact assessment has been completed.

2.3 Technical review principles

The principles described in this section are intended to guide technical reviewers in reviewing assessment reports. Reviewers must exercise judgment, which affects the quality and result of each review. It is also important for them to respect a code of conduct. The application of principles is essential to guide the professional conduct of technical reviewers.

Five basic principles that are fundamental to GHG verification can also be applied to the technical review of sustainable development

FIGURE 2.1

Overview of the technical review process



and transformational impact assessments.¹⁰ It is a *key recommendation* for the reviewer to base the technical review on the principles of ethical conduct, fair presentation, due professional care, independence and an evidence-based approach, as follows:

- **Ethical conduct.** Demonstrate ethical conduct through trust, integrity, confidentiality and discretion throughout the technical review process. The user has to trust the technical reviewer's conclusions because they are not always witnessing all technical review activities. Within the technical reviewer's organization, any reviewer of the technical review team's work needs trust in the team's work since they cannot check whether *all* the findings presented in the technical review report are correct.
- **Fair presentation.** Reflect the technical review activities, findings, opinions and conclusions truthfully and accurately. Report significant obstacles encountered during the technical review and unresolved diverging opinions between members of the technical review team. This is also related to the principle of basing technical review conclusions on verifiable evidence (see "Evidence-based approach", below).
- **Due professional care.** Apply diligence and judgment in the technical review. Technical reviewers exercise care in accordance with the importance of the task they perform, and the confidence placed in them by users and other interested parties. Having the necessary competence is an important factor in practising due care. Technical reviewers should be aware of the potential consequences of their activities and the technical review results, and treat the user and the whole technical review process with respect and a deep sense of duty.
- **Independence.** Remain independent from the user to ensure that the technical review is impartial. An objective opinion from the technical review presumes independence of every individual in the technical review team. Individuals should be independent of the policy undergoing technical review,

and free from bias, conflict of interest and undue influence (see [Section 6.3](#) for more information on conflict of interest).

- **Evidence-based approach.** Use a rational method for reaching reliable and reproducible technical review conclusions in a systematic process. Verifiable evidence is empirical and objectively interpreted. At the same time, it should be kept in mind and communicated to the user that evidence used in a technical review can only be based on samples of the information available, since a technical review event is conducted during a finite period of time and with finite resources.

These principles apply equally to first-, second- and third-party technical review. However, the type of technical review will affect the level of independence, as discussed in [Chapter 5](#).

Consistent with the guidelines for ICA, the review process should be conducted in a manner that is non-intrusive, non-punitive and respectful of national sovereignty.¹¹ The principles above can help to ensure that technical reviewers maintain sensitivity to these concerns.

¹⁰ Principles are adapted from ISO 14064-3: "Greenhouse gases – Part 3: Specification with guidance for the validation and verification of greenhouse gas assertions" and ISO 19011: "Guidelines for auditing management systems".

¹¹ UNFCCC (2011).