
**Environmental management —
Guidelines on the assurance of
environmental reports**

*Management environnemental — Lignes directrices sur l'assurance
des informations figurant dans les rapports environnementaux*

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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.

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).

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).

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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.

This document was prepared by Technical Committee ISO/TC 207, *Environmental management*, Subcommittee SC 2, *Environmental auditing and related environmental investigations*.

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 www.iso.org/members.html.

Introduction

This document addresses the need for providing confidence in the assurance of environmental reports.

An environmental report includes voluntary and/or legally required disclosure by an organization of environmental information. It can be presented as a stand-alone environmental report or as non-financial information in an organization's annual report or be part of a sustainability report. This information is intended to fulfil the needs and expectations of the organization's interested parties, which can include investors, regulators, stock exchanges and customers.

External assurance from an impartial assurance provider can increase the credibility and reliability of reported environmental information (reliability of information is required by ISO 14001:2015, 7.4.1) and potentially improve the perceptions of the reporting organization with interested parties.

Environmental reports can take the form of:

- a stand-alone environmental report;
- the environmental component of a sustainability report also including non-environmental information;
- the environmental component of an annual integrated report;
- an environmental report made available to the public on an organization's website;
- a disclosure of environmental information using a specific framework, e.g. CDP (formerly known as the Carbon Disclosure Project), Global Reporting Initiative (GRI);
- real-time reporting of environmental performance.

Assurance is recognized as improving trust in and credibility of environmental reports and the reliance that intended users can place on them. Organizations can achieve multiple benefits from assurance^[11], including the following.

- a) Increasing the use of environmental information by leadership for decision making. With increased interest in non-financial sustainability information, including environmentally related information and its importance for driving improvements in organizational strategy, performance and reputation, sustainability issues are being addressed by top management. Disclosures and data that are believed to be accurate, trustworthy and credible are more likely to be used for internal decision making.
- b) Reducing data quality risk and enhancing trust. Data quality continues to be a significant issue for reporting organizations and report users. In this context, it is not unusual for large companies to issue restatements of sustainability disclosures. In a 2011 study, it was found that a third of the largest 250 global companies had issued a restatement of non-financial information^[12]. The role of assurance in reducing data quality risks is widely recognized. Disclosures that are viewed as robust and credible are more likely to be relied on, thus increasing the value of reporting.
- c) Improving the involvement of intended users. Assurance engagements can involve reviewing a reporting organization's engagement processes with interested parties. Some organizations use their environmental reporting processes and/or sustainability reporting as the basis for ongoing dialogue with interested parties. Both of these can help promote mutual communication and understanding.
- d) Strengthening internal environmental reporting for improving performance. Robust internal environmental reporting systems and controls play a role in managing sustainability performance and impacts. External assurance can help confirm that internal systems and controls are robust, and can recommend any necessary improvement.
- e) Improving image and reputation. An assured environmental report can provide an organization's interested parties with a greater sense of confidence in disclosures. Among other things, it reflects

the seriousness with which the reporting organization approaches reporting. Investors, rating agencies and other analysts increasingly look for assurance when making investment and rating decisions.

This document provides principles and guidelines for assuring the environmental information an organization includes in environmental reports. It also provides guidance on:

- the output of the assurance engagement, i.e. the assurance statement and/or the assurance report;
- how the assurance engagement should address materiality, in terms of both:
 - determining if material issues have been included in the environmental report;
 - identifying any material misstatements and/or omissions.

Assurance is based on validation and/or verification of environmental information and the processes used to provide that information, depending on the scope of the assurance engagement and the intended use of the environmental report.

In this document, the term verification is applied to the processes for determining whether historical data or other information in an environmental report is materially correct. Validation is undertaken where confidence is sought for projected information, typically of future environmental performance or outcomes.

Assurance is the result of a process to determine whether reported environmental information meets the particular need for which it is intended. For example, although information related to a specific discharge is accurate and reliable, assurance may reveal that the information is not appropriate or relevant for the intended user(s).

The reporting organization defines its method to determine materiality in order to ensure the environmental report is suitable for the intended use. As part of the assurance engagement, the assurance provider could be required to review the rationale behind the methodology used to determine what is material, depending on the scope of the assurance engagement.

Assurance therefore may extend to the information in the environmental report and to the processes used for data collection, aggregation and analysis, and those used to determine the suitability of the information for the intended use (see [Figure 1](#)). Typically, it is not possible to assure every item of data from original source to aggregation for inclusion in an environmental report. Instead, a sample of data is subjected to detailed examination which, together with a review of the data collection processes, provides confidence in the information in the report as a whole. Assurance of the materiality process applied by the organization also gives confidence that the report is suitable for its intended users.

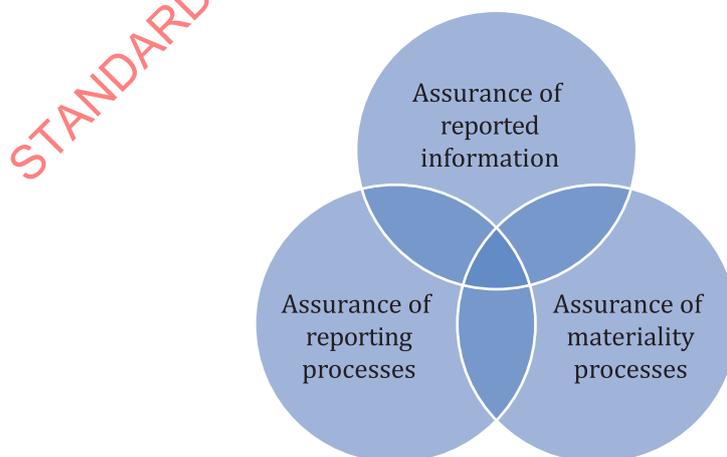


Figure 1 — Components of assurance

This document is intended to support reporting about an organization's environmental performance and is neutral regarding the environmental framework being used as the basis for reporting. This document is intended to be of use to organizations seeking assurance, providing assurance and relying on assurance of environmental reports, including:

- external assurance providers;
- organizations involved in developing environmental reports;
- organizations internally assuring their environmental reports;
- organizations involved in training relating to the assurance of environmental reports;
- voluntary and mandatory environmental reporting programme administrators, regulators, investors, finance and insurance communities and stock exchanges;
- other interested parties who wish to read environmental reports.

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Environmental management — Guidelines on the assurance of environmental reports

1 Scope

This document gives principles and guidelines for assuring the environmental information an organization includes in its environmental reports.

This document is applicable to assuring other types of reports in principle provided that special consideration is paid to identifying the competence needed by the assurance provider.

2 Normative references

There are no normative references in this document.

3 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 Terms related to assurance

3.1.1

assurance

result of a process of *validation* (3.1.12) and/or *verification* (3.1.13) to provide confidence as to the degree of reliance that can be placed on an *environmental report* (3.3.1)

3.1.2

assurance engagement

arrangements made by an *assurance client* (3.1.4) and an *assurance provider* (3.1.7) to provide *assurance* (3.1.1) of an *environmental report* (3.3.1)

Note 1 to entry: In this document, the term “arrangement” includes contractual agreements as well as activities carried out to provide assurance.

3.1.3

level of assurance

degree of confidence that can be placed by the *intended user* (3.3.3) on the content of the *environmental report* (3.3.1)

Note 1 to entry: The level of assurance may be expressed in qualitative or quantitative terms.

3.1.4

assurance client

organization (3.4.1) or person requesting *assurance* (3.1.1)

Note 1 to entry: The assurance client can be the reporting organization or any other organization that has the regulatory or contractual right to request assurance.

3.1.5

assurance criteria

standards, protocols or requirements used as a reference against which *assurance evidence* (3.1.6) is compared

Note 1 to entry: The requirements can be voluntary, contractual or legal.

[SOURCE: ISO 9000:2015, 3.13.7, modified — Adapted from “audit criteria” and Note 1 to entry has been added.]

3.1.6

assurance evidence

information, including data, records or statements of fact, that is verifiable, or other information relevant to the *assurance criteria* (3.1.5)

Note 1 to entry: Assurance evidence can be qualitative or quantitative.

3.1.7

assurance provider

organization (3.4.1) undertaking *assurance engagements* (3.1.2)

Note 1 to entry: An assurer is an individual participating in assurance engagements.

3.1.8

assurance report

document that describes the *assurance engagement* (3.1.2) and the results

3.1.9

assurance statement

declaration by the *assurance provider* (3.1.7) of the outcome of the *assurance engagement* (3.1.2)

Note 1 to entry: The assurance statement provides a summary description of the assurance activities undertaken and an opinion as to the *level of assurance* (3.1.3) that can be placed on the *organization's* (3.4.1) *environmental report* (3.3.1).

Note 2 to entry: The assurance statement does not, of itself, afford contractual or other legal guarantees.

3.1.10

claim

information declared by the reporting *organization* (3.4.1)

Note 1 to entry: For the purpose of this document, “claim” relates to *environmental information* (3.2.4) provided in the *environmental report* (3.3.1).

Note 2 to entry: The claim can represent a situation at a point in time or could cover a period of time.

Note 3 to entry: The claim should be clearly identifiable and capable of consistent evaluation or measurement against specified requirements by an *assurance provider* (3.1.7).

[SOURCE: ISO/IEC 17029:2019, 3.1 modified — “reporting organization” has replaced “client”, Notes 1 and 4 to entry have been deleted and a new Note 1 to entry has been added. Note 3 modified by replacing “a validation body/verification body” with “an assurance provider”.]

3.1.11

competence

ability to apply knowledge and skills to achieve intended results

[SOURCE: ISO 9000:2015, 3.10.4, modified — Notes 1 and 2 to entry have been deleted.]

3.1.12 validation

confirmation of a *claim* (3.1.10), through the provision of objective evidence, that the requirements for a specific intended future use or application have been fulfilled

Note 1 to entry: Objective evidence can come from real or simulated sources.

Note 2 to entry: Validation is considered to be a process to evaluate the reasonableness of the assumptions, limitations, and methods that support a claim about the outcome of future activities.

Note 3 to entry: Validation is applied to claims regarding an intended future use based on projected information (confirmation of plausibility).

[SOURCE: ISO/IEC 17029:2019, 3.2, modified — Note 4 to entry has been deleted.]

3.1.13 verification

confirmation of a *claim* (3.1.10), through the provision of objective evidence, that specified requirements have been fulfilled

Note 1 to entry: For this document, a claim relates to data or other information in an *environmental report* (3.3.1).

Note 2 to entry: Verification includes processes to determine whether historical data or other information in an environmental report are/is materially correct.

[SOURCE: ISO/IEC 17029:2019, 3.3, modified — Notes 1 and 2 to entry have been replaced and Note 3 to entry has been deleted.]

3.1.14 risk

effect of uncertainty

Note 1 to entry: An effect is a deviation from the expected — positive or negative.

Note 2 to entry: Uncertainty is the state, even partial, of deficiency of information related to, understanding or knowledge of, an event, its consequence, or likelihood.

Note 3 to entry: Risk is often characterized by reference to potential “events” (as defined in ISO Guide 73:2009, 3.5.1.3) and “consequences” (as defined in ISO Guide 73:2009, 3.6.1.3), or a combination of these.

Note 4 to entry: Risk is often expressed in terms of a combination of the consequences of an event (including changes in circumstances) and the associated “likelihood” (as defined in ISO Guide 73:2009, 3.6.1.3) of occurrence.

3.2 Terms related to environmental sustainability

3.2.1 environment

surroundings in which an *organization* (3.4.1) operates, including air, water, land, natural resources, flora, fauna, humans and their interrelationships

Note 1 to entry: Surroundings can extend from within an organization to the local, regional and global system.

Note 2 to entry: Surroundings can be described in terms of biodiversity, ecosystems, climate or other characteristics.

[SOURCE: ISO 14001:2015, 3.2.1]

3.2.2 environmental aspect

element of an *organization's* (3.4.1) activities or products or services that interacts or can interact with the *environment* (3.2.1)

[SOURCE: ISO 14001:2015, 3.2.2, modified — Notes 1 and 2 to entry have been deleted.]

3.2.3

environmental impact

change to the *environment* (3.2.1), whether adverse or beneficial, wholly or partially resulting from an *organization's* (3.4.1) *environmental aspects* (3.2.2)

[SOURCE: ISO 14001:2015, 3.2.4]

3.2.4

environmental information

facts provided or learned related to the *organization's* (3.4.1) *environmental performance* (3.2.5)

Note 1 to entry: The term “environmental information” is a type of *claim* (3.1.10)

3.2.5

environmental performance

measurable results related to the management of *environmental aspects* (3.2.2)

Note 1 to entry: Results can be measured against the *organization's* (3.4.1) environmental policy, environmental objectives or other criteria, using indicators.

[SOURCE: ISO 14001:2015, 3.4.11, modified — “measurable results” has replaced “performance” and “For an environmental management system” has been removed from the Note 1 to entry.]

3.2.6

sustainability

state of the global system, including environmental, social and economic aspects, in which the needs of the present are met without compromising the ability of future generations to meet their own needs

Note 1 to entry: The environmental, social and economic aspects interact, are interdependent and are often referred to as the three dimensions of sustainability.

Note 2 to entry: Sustainability is the goal of *sustainable development* (3.2.7).

[SOURCE: ISO Guide 82:2019, 3.1]

3.2.7

sustainable development

development that meets the environmental, social and economic needs of the present without compromising the ability of future generations to meet their own needs

Note 1 to entry: Derived from the Brundtland Report^[13].

[SOURCE: ISO Guide 82:2019, 3.2]

3.3 Terms related to reporting

3.3.1

environmental report

information on the *environmental performance* (3.2.5) of an *organization* (3.4.1) over a specified period of time

Note 1 to entry: The environmental report may also include information on the organization's management of other related matters.

Note 2 to entry: The information may take the form of a standalone environmental report or may be included in a *sustainability* (3.2.6) or integrated report.

Note 3 to entry: The environmental report may contain information on the past performance of the organization, including its environmental impacts, and information related to initiatives, challenges and future directions.

3.3.2**interested party**

person or *organization* (3.4.1) that can affect, be affected by, or perceive itself to be affected by a decision or activity

EXAMPLE Customers, communities, suppliers, regulators, non-governmental organizations, investors and employees.

Note 1 to entry: Interested parties can also be referred to as “stakeholders”.

[SOURCE: ISO 14001:2015, 3.1.6, modified — Note 1 to entry has been replaced.]

3.3.3**intended user**

person or *organization* (3.4.1) that relies on the assured *environmental report* (3.3.1) to make decisions

Note 1 to entry: The intended user can be the *assurance client* (3.1.3), regulators, the financial community or other *interested parties* (3.3.2), such as local communities, government departments or non-governmental organizations.

3.3.4**material, adj**

significant to *intended users* (3.3.3)

Note 1 to entry: Material applies to issues or matters that the *environmental report* (3.3.1) addresses that may influence the decisions of the intended users, including misstatements or the aggregation of misstatements or omissions in the environmental report.

3.3.5**materiality process**

process used by the reporting *organization* (3.4.1) to determine what is *material* (3.3.4)

Note 1 to entry: In the context of this document, the materiality process is used to determine what is relevant to include in the *environmental report* (3.3.1).

3.3.6**reporting boundary**

extent of *environmental information* (3.2.4) reported from within the *organizational boundary* (3.4.2) as well as any *material* (3.3.4) environmental information related to operations and activities outside the organizational boundary

3.3.7**reporting process**

methods and processes used to obtain information for inclusion in an *environmental report* (3.3.1)

3.4 Terms related to organizations**3.4.1****organization**

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

Note 1 to entry: The concept of organization includes, but is not limited to sole-trader, company, corporation, firm, enterprise, authority, partnership, charity or institution, or part or combination thereof, including (an) operating unit(s), whether incorporated or not, public or private.

Note 2 to entry: An organization that is the subject of an *environmental report* (3.3.1) that is being assured is referred to as “the reporting organization”.

[SOURCE: ISO 14001:2015, 3.1.4, modified — “including (an) operating unit(s)” and Note 2 to entry have been added.]

3.4.2

organizational boundary

grouping of activities or facilities in which an *organization* (3.4.1) exercises control

4 Principles

4.1 General

The principles set out below apply to the assurance engagement and assurance providers and assurers.

4.2 Principles for assurance engagement

The following principles apply to assurance engagement.

a) Evidence-based approach.

Assurance evidence should be verifiable. It will, in general, be based on samples of the information available since assurance activities are conducted during a finite period of time and with finite resources. An appropriate use of sampling should be applied, since this is closely related to the confidence that can be placed in the assurance statement and to the level of assurance achieved. The assurance provider should exercise due professional care and judgement in validating and/or verifying evidence, especially in the case of qualitative information.

b) Consistency.

The assurance provider should follow a consistent approach throughout the assurance engagement. Where changes in the assurance engagement are necessary, any associated effects on the assurance activities and intended outcomes should be determined and explained in the assurance statement.

c) Confidentiality.

Information should not be used inappropriately for personal gain by those involved in the assurance engagement or in a manner detrimental to the legitimate interest of the assurance client or reporting organization. This concept includes the proper handling of sensitive or confidential information.

d) Risk-based approach.

The assurance provider should apply a risk-based approach to the assurance engagement.

NOTE Further details are given in 5.2.6.

4.3 Principles for assurance providers

The following principles apply to assurance providers and assurers.

a) Integrity and ethical conduct.

Those involved in the assurance engagement should:

- 1) perform their work with honesty, diligence, and responsibility;
- 2) exercise discretion in the use and protection of information acquired in the course of their duties.

b) Competence and due professional care.

Those involved in the assurance engagement should:

- 1) have the necessary competence needed to perform the work that is required;
- 2) demonstrate competence while performing the work;

- 3) exercise due professional care.
- c) Independence and impartiality.

Those involved in the assurance engagement should:

- 1) be independent from those involved in generating and compiling the information that is being assessed;
- 2) be sensitive to any influences that could be exerted on their judgement while carrying out assurance activities;
- 3) perform their work in an impartial manner, i.e. remain fair and unbiased in all their dealings.
- d) Fair presentation.

The assurance statement should truthfully and accurately reflect the work that was performed by the assurance provider and be presented with clarity.

5 Guidelines on planning and performing the assurance engagement

5.1 General

Prior to seeking assurance of its environmental report, an organization should consider the context in which the assurance engagement is sought, the costs of assurance and the value it can add to the reporting organization and intended users.

The assurance engagement should aim to assess and communicate the reliability of the claims in an environmental report, which in turn increases the confidence of the users in the reported information. The ability to provide such assurance relies upon the validation and/or verification of reported information, which may require a review of the processes used by the reporting organization to determine the information needed and to collect, analyse and report it.

The nature and degree of validation and/or verification can vary (see [Figure 1](#)). It may include assurance of:

- information, ranging from simple checks for calculation errors in aggregated data to extensive sampling and examination of sources of information;
- processes for the collection of information, including the adequacy and effectiveness of data collection systems and internal processes for quality control;
- the processes applied to determine what is material to include in an environmental report.

The assurance statement should document the nature and degree of assurance activities performed.

Increased confidence can be placed on the reliability of an environmental report that has been subject to an assurance engagement based on validation and/or verification of both environmental information and the reporting processes. This will ensure that reported information is consistent with applicable reporting principles (e.g. accuracy, reliability, stakeholder inclusiveness) and meets agreed assurance criteria.

Where the assurance engagement involves historical data or other information relating to past events or results, the process applied is termed “verification”. Examples of situations where verification may be undertaken include where an environmental report provides:

- quantified data related to past environmental performance;
- information on the achievement of environmental objectives;
- explanations of methods implemented to manage environmental aspects;

- details of positive or negative impacts resulting from an organization's activities.

In some circumstances, organizations may elect to include in their environmental reports information on anticipated future environmental performance. Where the assurance engagement extends to such information, the process applied is termed "validation". Examples of situations where validation may be undertaken include where a report provides:

- forecasts of future environmental performance;
- predictions of resultant environmental impacts;
- commitments to specific actions or initiatives (validation would extend to the feasibility of the commitments).

The assurance engagement should consider:

- the organization's context, its environmental impacts and its interactions with interested parties;
- the reporting organization's methodology for determining materiality, including whether it is based on recognized standards, frameworks or other defined processes; the methodology should be repeatable, appropriate to the organization's complexity and the scale of its environmental impacts and should be consistently applied;
- the extent to which the environmental report addresses relevant issues that could influence the decisions of the intended users; reporting frameworks refer to these as "material issues" or "materiality issues";
- the scale of any errors in the environmental report that could influence the decisions of the intended users; reporting frameworks refer to these as "material misstatements".

An overview of the components of an assurance engagement is given in [Figure 2](#).

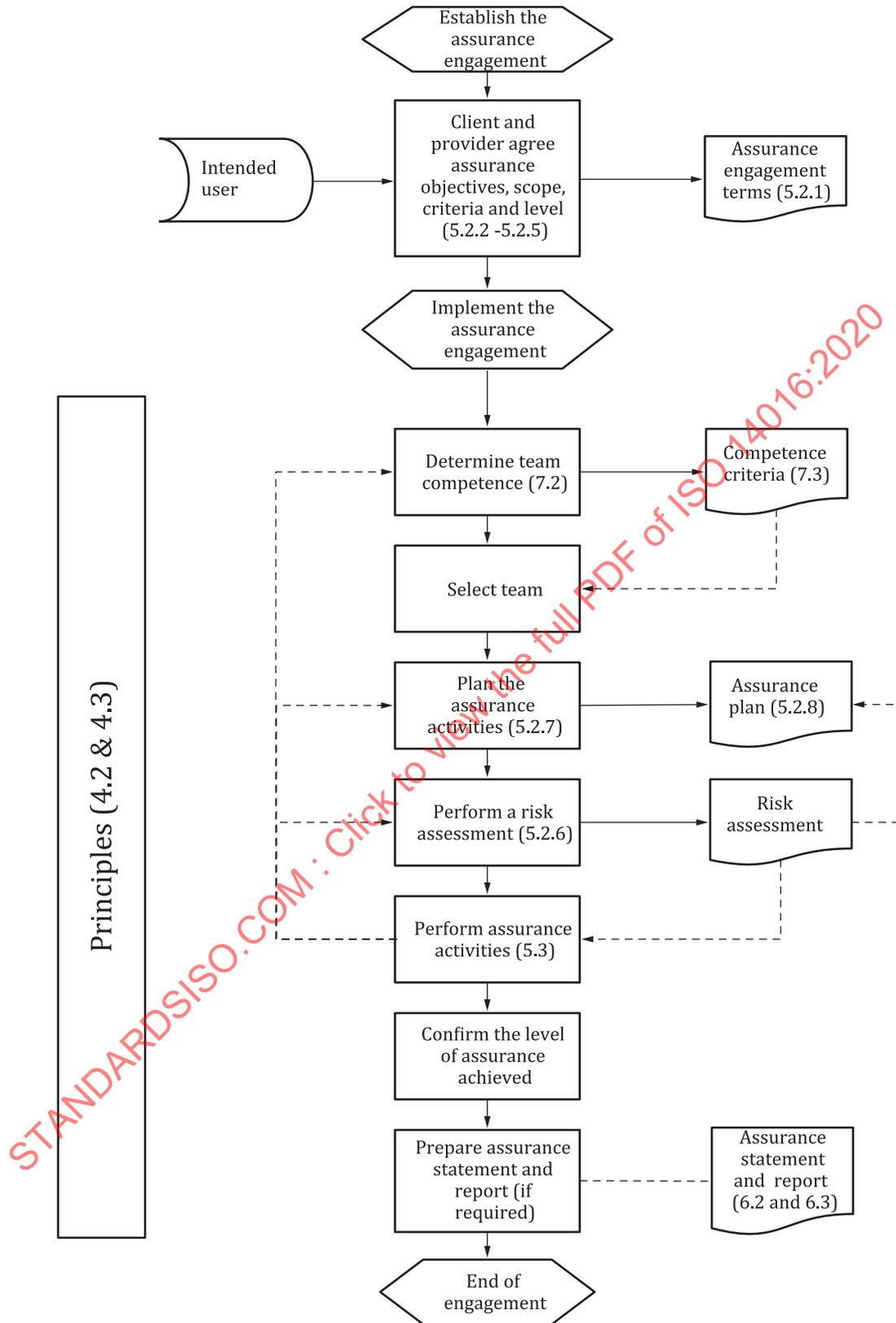


Figure 2 — Overview of the components of an assurance engagement

5.2 Planning the assurance engagement

5.2.1 Agreeing on the terms of the assurance engagement

The assurance provider may advise the assurance client on the appropriateness of the scope and the terms of the assurance engagement.

The assurance engagement can be influenced by other parties who should make their requirements known to the assurance client. These can include an intended user, such as a regulatory body or other entity. The assurance client and the assurance provider should discuss as needed and agree on the structure of the assurance statement.

An assurance engagement for environmental reporting may be one component of a broader assurance engagement that addresses other related but non-environmental report elements (e.g. part of a broader sustainability report or part of a broader financial report). In such a case, the assurance engagement should identify the overall context within which the environmental assurance will be used.

An assurance statement should include an explanation of limitations of the assurance activities conducted. An assurance report may include a more detailed explanation of limitations of the assurance activities conducted, or it may refer to agreed limitations within the assurance engagement agreement. Client agreement on limitations of the assurance engagement at the commencement of the work helps to eliminate later confusion.

As appropriate, the assurance provider should identify any potential liabilities associated with legal requirements related to the assurance engagement.

Prior to the start of the assurance activities, the assurance client and assurance provider should agree on the terms of the engagement, including:

- a) the assurance objectives, scope and criteria;
- b) the requirements for the assurance statement and/or assurance report;
- c) the intended user(s) (e.g. investors, shareholders, employees, customers, regulatory bodies, governmental and non-governmental organizations);
- d) the milestones, time frames, and progress reporting requirements;
- e) confidentiality;
- f) a declaration of independence from the assurance provider identifying any conflicts of interest or bias;
- g) a reference to the level of assurance required in terms of the intended use of the assurance report;
- h) any constraints with the potential to impact on the assurance activities (e.g. restricted access to sites or third-party data, commercial confidentiality);
- i) any potential legal implications.

The terms of the assurance engagement should be documented and contain sufficient detail to enable the assurance provider to plan the resources required to undertake the assurance activities and meet the requirements within the defined time frame and to operate at an agreed level of independence.

Where possible, there should be a commitment by the reporting organization to cooperate with the assurance provider in the execution of the assurance engagement.

Where the assurance provider is made aware that there could be significant changes in the methods of collecting, documenting or reporting information from previous reporting periods, they should consider the implications of these changes in planning the assurance activities.

If circumstances change, (e.g. in relation to the expectations of intended users or the assurance provider's understanding of the engagement), it may be necessary to change the terms of the assurance engagement. These should be agreed with the assurance client. Where an agreement cannot be reached, the assurance engagement may be terminated, taking account of compliance obligations.

5.2.2 Assurance objective(s)

The assurance objectives in relation to the environmental report and reporting processes define what is to be accomplished by the assurance engagement. In establishing the assurance objectives, the assurance client may take into account the assurance provider's recommendations. Assurance objectives relate to the extent to which an environmental report meets the needs of the intended user(s) (e.g. balance, clarity, comparability, timeliness, outcomes of future activities).

Assurance objectives provide the framework for the evaluation of specified criteria, such as the accuracy or completeness of reported information and the reliability of the data collection, analysis and reporting processes.

Examples of types of assurance objectives include:

- a) to assess fulfilment of environmental reporting requirements as defined or influenced by interested parties;
- b) to determine whether one or more elements of the environmental report meet data quality and materiality thresholds;
- c) to confirm that the metrics used in the environmental report are relevant to the reporting organization's environmental performance;
- d) to assess if an environmental report provides sufficient quality, detail and content to enable the intended user to form an opinion and make decisions;
- e) any specific additional requirements for the assurance engagement (e.g. benchmarking of the organization in relation to peer organizations or industry sectors)

In order to improve the credibility of the environmental report, an assurance client may also request assurance providers to make recommendations for improvement of, for example:

- the integrity of data collection, management (e.g. aggregation), analysis and environmental reporting processes and systems;
- the reporting organization's analysis of feedback from previous reports and the relevance for interested parties;
- the methodology used to determine materiality;
- the consultation of interested parties.

The provision of any recommendations should not affect the agreed level of independence of the assurance provider.

If an objective of the assurance engagement cannot be achieved, then the assurance provider should agree with the client a modified objective or scope. If a modified objective or scope cannot be agreed, then the assurance provider should recommend termination of the assurance engagement, taking account of compliance obligations.

5.2.3 Scope of the assurance engagement

The scope of the assurance engagement describes the extent and boundaries of the assurance engagement. The scope of the assurance engagement should be consistent with the assurance objectives and be documented.

In determining the scope of the assurance engagement, consideration should be given to what is material to the organization, its reporting boundaries and organizational boundaries. For example, something material within one part of the organization's boundary (e.g. polluted soil) may not be relevant within another.

An assurance engagement can have aligned scopes for assurance activities for both environmental information and reporting processes. However, circumstances can exist where the scopes are not aligned (see [Figure 1](#)), for example, where compliance obligations impose specific approaches for certain categories of information, such as greenhouse gas disclosures. This can influence the ability to determine an appropriate level of assurance. Any non-alignment of the scopes of assurance activities for environmental information and reporting processes should be reflected in the assurance statement.

When determining the scope, as a minimum, consideration should be given to the following areas:

- a) the functional, physical, ownership or operating boundaries of the reporting organization;
- b) the reporting organization's processes for determining the scope and content of the environmental report, including the timeliness of environmental reports and the reporting periods;
- c) the reported information that is being evaluated; this may involve any combination of data and information types;
- d) the data collection, analysis and information systems used to generate the content of the environmental report; this may involve multiple information systems at various locations;
- e) the processes to address needs and expectations of interested parties;
- f) the intended user(s) and its (their) respective reporting requirements;
- g) any reporting standards or frameworks used in the preparation of the environmental report and in the course of the assurance engagement;
- h) the materiality process and the resulting material issues;
- i) any constraints and limitations to the scope of the assurance engagement.

The scope of the assurance engagement should be documented in sufficient detail to allow agreement with the assurance client.

Any changes (and their rationale) in the scope of the assurance engagement should be documented and agreed with the assurance client.

5.2.4 Determining the assurance criteria

When planning the assurance engagement, the assurance client and assurance provider should agree on the criteria to be used. The assurance criteria should be consistent with the assurance objective. The assurance criteria will be used to assess the environmental report. The criteria will take into account any reporting principles from the reporting frameworks and standards applied by the reporting organization (see [Annex A](#)). When providing assurance of environmental reports against established frameworks and standards, assurance providers assess the degree to which these principles have been applied by the reporting organization.

The assurance criteria should be appropriate to the reporting process, the content of the environmental report, in whole or part, to be assured, and the level of assurance to be achieved.

Sources of assurance criteria can include, but are not limited to, the following:

- a recognized framework or standard for environmental reporting, e.g. Global Reporting Initiative (GRI), International Finance Corporation (IFC), Asian Development Bank (ADB), European Bank for Reconstruction and Development (EBRD), EU Eco-Management and Audit Scheme (EMAS), stock exchanges, CDP (formerly known as the Carbon Disclosure Project);

- a recognized framework for the engagement of interested parties, e.g. AA1000SES;
- a recognized framework for the determination of materiality;
- a recognized framework for governance structures, e.g. OECD guidelines;
- compliance obligations, e.g. legal requirements;
- criteria developed by the reporting organization or the intended user;
- AA1000AS, a methodology for sustainability-related assurance engagements;
- ISAE 3000, which provides a process for assuring non-financial reports.

5.2.5 Level of assurance

5.2.5.1 General

The level of assurance provided by the assurance engagement is a function of the objectives and scope of the validation and/or verification activities, the assurance criteria, the resources available and the process followed. It can be influenced by the time spent and the sampling regime that was used by the assurance provider. Increasing levels of assurance allow intended users of environmental reports to place increased reliance on their contents. Reporting frameworks and standards define the levels of assurance. Two commonly used levels are limited assurance and reasonable assurance.

A specific level of assurance should be determined to provide confidence to the assurance client as to the degree of reliance that can be placed on the environmental report. In selecting an appropriate level of assurance, the assurance client and assurance provider should consider the requirements of the intended user(s), the complexity of the assurance engagement, and the extent of the reporting organization's information systems and controls. Examples of factors that can influence the appropriate level of assurance include the reporting criteria, the intended use(s) of the environmental report (e.g. legal, fiduciary or environmental performance improvement), the organizational context and associated environmental impacts.

The assurance activities should proceed only when the assurance provider determines that sufficient and appropriate information is available to support the level of assurance selected. If sufficient and appropriate information is not available for the assurance provider to reach the level of assurance, the assurance provider may need to modify the assurance engagement in order to fulfil the assurance objectives.

The level of assurance may be expressed in quantitative or qualitative terms and based on the concept of risk such as those developed by the accountancy profession, where the terms "limited" or "reasonable assurance" are used. Other risk-based approaches used in assurance include:

- applying increasingly rigorous methods where higher levels of assurance are to be achieved (e.g. more complex or sector specific checklists, more intensive sampling regimes);
- adopting an approach where components of the environmental report are assessed at different assurance levels.

The required level of assurance will influence the nature, timing and extent of the assurance activities. With higher assurance levels, the amount of resources required to make a determination of the assurance level increases.

Environmental reports intended to be used for regulatory purposes can require a higher level of assurance than those used for internal performance management. Different levels of assurance can be applied to different components of a single environmental report.

Examples of assurance engagements providing different levels of assurance are given in [5.2.5.2](#) to [5.2.5.4](#).

5.2.5.2 Example 1

The reporting organization is reporting for the first time and has a limited data set for consideration. The reporting process is not integrated with the environmental management system.

Characteristics:

- data do not cover all processes and aspects/impacts;
- materiality has been assumed;
- the report is intended to open channels of communications and promote endeavours;
- case studies are likely to be positive towards practices or performance;
- lack of benchmarks;
- lack of systematic or comprehensive data.

If all are true, overall a low level of assurance is achievable at most. However, if one or more of the data sets have reliable sources and robust processes, then a higher level of assurance can be achieved by using more thorough validation and/or verification methods, for those data sets only.

If only a portion of the reporting organization's environmental information can be assured, the assurance provider should limit the scope of the assurance engagement to only that portion of the reporting organization's environmental report.

5.2.5.3 Example 2

The reporting organization has a mature environmental management system (meeting the requirements of ISO 14001) based on a thorough understanding of the context in which the organization operates, including its interested parties. The organization communicates its environmental performance based on the principles that the data are consistent with information generated within the environmental management system and are reliable.

Characteristics:

- relationships have been developed with interested parties;
- data are available but are not necessarily of consistent quality for all environmental aspects/impacts;
- internal assurance for environmental information has been established;
- top management are involved;
- there is a documented risk assessment;
- continual environmental performance improvement can be demonstrated.

Overall in this scenario, a higher level of assurance can be achievable than in the previous example. For data sets that have reliable sources and assured processes, a higher level of assurance can be achievable for those data sets only, by applying appropriate validation and/or verification methods.

5.2.5.4 Example 3

The reporting organization has a high brand reputational risk and high risks to the environment.

Characteristics:

- the organization, its activities, products and services are under high levels of scrutiny from interested parties;

- it is subject to external reporting requirements;
- it has been reporting for a number of years on a wide range of key indicators;
- it has mature data collection and information management processes.

In this scenario, a higher level of assurance can be desirable for data associated with the higher profile risks. The assurance provider can be engaged in an iterative process in parallel with the development of the environmental report.

5.2.6 Risk assessment

Prior to conducting the assurance activities, the assurance provider should conduct a risk assessment to identify the critical elements of the reporting process and the environmental report that need to be included in the assurance engagement to ensure the accuracy and relevance of the assurance statement and to reduce the likelihood of resultant material misstatement. The risk assessment can require a change to the assurance scope and objectives and is considered in planning the assurance activities. The level of detail of the risk assessment process may vary with the organization's purpose, complexity, scale and impacts as well as its compliance obligations.

A risk assessment will help the assurance provider prioritize the approach to providing assurance. The level and depth of the risk assessment activity should be determined by the environmental report complexity, the intended user(s) requirements, and the level of assurance sought. The assurance provider should use recognized methods of risk assessment informed by the level of assurance to be met.

In selecting the items that should be included in the risk assessment, the assurance provider should be aware of the links between the organization's context, interested parties, environmental impacts, materiality and environmental performance.

The risk assessment should include consideration of the following, as applicable:

- a determination of the organization's context;
- an identification of the interested parties and the degree of consultation with them;
- a determination of environmental aspects and related environmental impacts;
- a determination of materiality;
- the intended user(s);
- the degree of complexity when determining the organizational boundaries;
- the likelihood of omission of a potentially significant environmental impact;
- the level of detail of the available documentation;
- the nature of operations specific to an organization, facility, project, product or service;
- the nature of the quantification methods;
- the quality, sources and processes for interpreting the data;
- the governance structure;
- the organization's compliance obligations;
- the maturity of the organization's reporting process;
- the organization's data quality assurance processes;
- the methods used to implement and monitor performance.

The outcome of the risk assessment should be documented and used to direct the assurance activities.

NOTE Guidelines for risk management, including risk assessment, are provided in ISO 31000.

5.2.7 Information gathering methods and techniques

The assurance provider should determine the information gathering methods and techniques needed to fulfil the assurance objectives. Information may include verifiable data and other forms of information that provide the basis for findings and conclusions. Data and other information can be real or simulated, historical or based on future activities.

In determining the methods and techniques, the assurance provider should consider the risk of a resultant material misstatement or nonconformity within the assurance report. These risks can be related to:

- a) the outcome of the risk assessment;
- b) the appropriateness of resources for the assurance engagement;
- c) the sampling to be undertaken;
- d) identification of constraints and limitations;
- e) identification of the competence of the assurance team for the assurance engagement.

In planning the assurance activities, the assurance provider identifies the sources of relevant information to be collected and their associated processes and determines the method of verification to be used. The sources of information and their associated processes selected may vary according to the scope and complexity of the assurance engagement.

Methods of collecting information may include the following:

- interviews;
- observations;
- review of relevant information.

Only information that can be verified or validated should be accepted as evidence to determine whether assurance criteria have been met. Where the assurance provider expects the amount of verifiable information to be low, professional judgement should be used to determine the degree of reliance that can be placed upon that evidence.

The assurance provider should identify where the sampling of information is needed. Sampling takes place when it is not practical or cost effective to examine all the available information during an assurance engagement, e.g. information is too numerous or too dispersed geographically to justify the examination of every item in the population. The assurance provider should determine the extent of data and information sufficient for planning purposes. This can require a site visit.

The assurance provider may consider the use of either judgement-based sampling or statistical sampling. Judgement-based sampling relies on the knowledge, skills and experience of the assurance provider's team. Statistical sampling design uses a sample selection process based on probability theory.

When selecting sampling methods, consideration should be given to the quality of the available data, as sampling insufficient and inaccurate data will not provide a useful result. The selection of an appropriate sample should be based on both the sampling method and the type of data required, e.g. to infer a particular behaviour pattern or draw inferences across a population.

The risk associated with sampling is that the samples may not be representative of the population from which they are selected, and thus the assurance provider's conclusion could be biased and different to one which would be reached if the whole population, or a different sample, was examined. There can be other risks depending on the variability within the population to be sampled and the method chosen.

When a statistical sampling plan is developed, the level of sampling risk that the assurance provider is willing to accept is an important consideration.

5.2.8 Assurance plan

Prior to its implementation, the assurance provider should prepare an assurance plan of sufficient detail, considering the risks of potential resultant material misstatement or nonconformity within the assurance statement. In preparing the plan, the following should be taken into account:

- a) the assurance objectives, scope and criteria;
- b) any confidentiality requirements.

The assurance plan should address:

- the extent to which internal and external interested parties were involved in planning and participating in the assurance engagement, if within the scope;
- an identification of the assurance client, reporting organization and assurance provider's representatives;
- the results of the risk assessment;
- any assurance standards applied in the engagement;
- the assurance activities scheduled, including dates and durations;
- the progress reporting requirements and milestones;
- the competence requirements of the assurance team;
- the resource requirements (e.g. human, financial, technological);
- details of how the assurance engagement is to be used to achieve the specified level of assurance, including methods for information gathering;
- details of representative sampling plans to be used;
- the assurance statement and any assurance reporting requirements;
- the terms of the assurance engagement, reference documents, checklists, protocols and other working documents to be used;
- the requirements for information, as appropriate, to support the assurance statement.

The assurance plan should be documented.

If, in the course of preparing the assurance plan, it becomes evident that the assurance objectives are unattainable or the assurance scope is not appropriate, the terms of the assurance engagement should be renegotiated.

The assurance provider should forward the plan to the assurance client for review and agreement prior to commencement of the assurance activities or when the plan is modified.

5.3 Performing assurance activities

The assurance provider should follow the assurance plan and undertake the assurance activities agreed with the assurance client. If, during the implementation of the plan, the assurance provider becomes aware of any new or changed circumstances, the plan should be modified.

When conducting assurance activities, information relevant to the assurance objectives, scope and criteria should be collected, for example, by means of a document review, sampling, observation

and interviewing, and evaluated against the assurance criteria, depending on the required level of assurance. The resulting evidence is used to determine whether the assurance criteria have been met.

Assurance can require an evaluation of the reporting organization's decision-making process for selecting data points, the means by which the data were collected, how data integrity was ensured, how the data were stored and how they were interpreted before they were used in an environmental report.

Assurance of the data reported can require an evaluation of specific data points to confirm that the reported values are an acceptable reflection of performance. The data can be presented as raw data, transformed data, aggregated data, normalized data, information processes and non-quantified information.

If, during the collection of evidence, the assurance provider becomes aware of any new or changed circumstances that change the risk assessment outcome, this should be addressed.

The assurance provider should ensure that it has gathered sufficient evidence to meet the assurance objectives, including to confirm the agreed level of assurance and to provide the basis for preparing the assurance statement. The assurance provider should retain sufficient records to be able to demonstrate that the plan was followed and, where deviations occurred, the rationale for those deviations.

Where the assurance provider is not satisfied that sufficient evidence has been gathered to meet the assurance objectives or scope, the assurance provider should determine any additional activities that may be needed to obtain the relevant evidence, in agreement with the assurance client. In the event that insufficient further evidence is obtained, this should be explained in the assurance statement and/or assurance report.

6 Assurance statement and reporting

6.1 General

In accordance with the terms of the assurance engagement, the assurance provider may prepare one or both of the following:

- an assurance statement that can be made available to the public and incorporated into the environmental report that has been assured;
- an assurance report that provides an explanation of the assurance activities performed and can expand on the contents of the assurance statement.

6.2 Assurance statement

An assurance statement should include, as a minimum, the following information:

- a) a description of the environmental report that is being assured and the particular criteria against which it has been prepared;
- b) acknowledgement that the reported subject matter is the responsibility of the reporting organization and that the assurance statement is the responsibility of the assurance provider;
- c) the objectives of the assurance engagement, including the level of assurance required by the assurance client;
- d) the scope of the assurance engagement and its appropriateness in the context of the environmental report;
- e) the nature and source(s) of assurance criteria used in evaluating the environmental report, developing findings and reaching conclusions;
- f) a brief description of the assurance activities undertaken and any standards or frameworks typically followed in the course of the assurance engagement, including the extent to which internal

and external interested parties were involved in planning and participating in the assurance activities, if within the scope;

- g) identification of the assurers and any limitation of independence from those preparing the environmental report and the reporting organization;
- h) the conclusions reached regarding the assurance objectives, including:
 - 1) an indication of the level or levels of assurance;
 - 2) the degree to which the environmental report addresses material issues;
 - 3) any constraints, limitations or reservations;
- i) the name and signature of the assurance provider and the date of the assurance statement.

An assurance statement can be used to support the reliance an intended user could place on the content of an environmental report. An assurance report can be used for internal purposes by the reporting organization to indicate areas where environmental performance can be improved or externally to demonstrate an organization's commitment to environmental sustainability.

In addition to stating the level of assurance achieved, an assurance statement is provided to enable the intended user(s) to understand how the assurance engagement was conducted, by whom, and any limitations in the performance of the assurance activities.

The assurance statement normally forms a separate part of the environmental report and is supported by the content of the assurance report, if one is requested by the assurance client. Where the assurance client is not the reporting organization, the assurance statement may only be included in the environmental report with the agreement of the assurance client.

Effective assurance statements are complete, concise and written in language appropriate to the intended user(s).

6.3 Assurance report

In addition to the assurance statement, a detailed assurance report should also be prepared if required by the assurance client, for internal use or to provide interested parties with greater confidence in the assurance.

The assurance report may contain additional information needed to support the assurance statement, including:

- a) the assurance statement;
- b) any constraints, limitations or reservations;
- c) details of the assurance team and their competence;
- d) suggestions for improvement to the environmental report and/or the reporting process.

The primary user of the assurance report is normally the assurance client. The assurance report serves to provide additional detail on any element of the assurance statement as agreed with the assurance client. It may also include additional requirements determined by the assurance client as specified in the assurance engagement.

6.4 Considering subsequent information

If facts that could affect the level of assurance provided in the assurance statement and/or assurance report are made known to the assurance provider after the assurance statement and/or assurance report has been issued, the assurance provider should assess the need for appropriate action.