

Assurance on a Greenhouse Gas Statement – Draft International Standard on Assurance Engagements 3410

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Introduction

Scope of this ISAE

1. This International Standard on Assurance Engagements (ISAE) deals with assurance engagements to report on a greenhouse gas (GHG) statement undertaken by assurance professionals, who have specialist skills, knowledge and experience in assurance concepts and processes developed through extensive training and practical application. (Ref: Para. A1-A2)
2. This ISAE may also provide guidance, adapted as necessary in the circumstances of the engagement, for assurance engagements under ISAE 3000 to report on:¹
 - (a) Statements of other emissions or removals, e.g. nitrogen oxides (NO_x) and sulphur dioxide (SO₂);
 - (b) Other GHG-related information, such as key performance indicators based on emissions data. (Ref: Para. A3)

Assertion-Based and Direct Reporting Engagements

3. The Assurance Framework notes that an assurance engagement may be either an “assertion-based” engagement or a “direct reporting” engagement.² Paragraph 13 of this ISAE requires an assurance engagement on a GHG statement to be an assertion-based engagement unless a direct reporting engagement is required by law or regulation and other conditions exist.

Reasonable Assurance and Limited Assurance Engagements

4. The Assurance Framework notes that an assurance engagement may be either a reasonable assurance engagement or a limited assurance engagement.³ Where the engagement is a limited assurance engagement, the requirements of this ISAE apply except as noted in paragraph 34.

Relationship with Other Professional Pronouncements

5. Paragraph 14 of this ISAE requires the assurance professional to comply with ISAE 3000 in addition to this ISAE. The Assurance Framework, which defines and describes the elements and objectives of an assurance engagement, provides context for understanding this ISAE and ISAE 3000.
6. ISAE 3000 includes requirements in relation to such topics as engagement acceptance, planning, evidence, using the work of experts, sampling, and documentation that apply to all assurance engagements, including engagements in accordance with this ISAE. In some cases, this ISAE includes additional requirements in relation to those topics.
7. ISAE 3000 also includes some requirements that are applicable only when they are appropriate in the context of the engagement. Where those requirements are appropriate

¹ ISAE 3000, “Assurance Engagements Other than Audits or Reviews of Historical Financial Information.”

² The International Framework for Assurance Engagements, paragraph 10.

³ The International Framework for Assurance Engagements, paragraph 11.

in the context of assurance on GHG statements, that fact is stated in the requirements section of this ISAE. See, for example, paragraph 18 of this ISAE.

8. Compliance with ISAE 3000 requires, among other things, that the assurance professional comply with the independence and other requirements of the International Federation of Accountants' *Code of Ethics for Professional Accountants* (IFAC Code).
9. International Standards on Auditing, while not directly applicable, may provide guidance to assurance professionals undertaking engagements under this ISAE.

Effective Date

10. This ISAE is effective for assurance engagements beginning on or after July 1, 2011. Earlier application is permitted.

Objectives

11. In conducting an assurance engagement with respect to a GHG statement, the objectives of the assurance professional are:
 - (a) To obtain the required level of assurance (reasonable or limited) about whether the GHG statement as a whole is free from material misstatement, whether due to fraud or error, thereby enabling the assurance professional to express a conclusion on whether the GHG statement is prepared, in all material respects, in accordance with the applicable criteria; and
 - (b) To report on the entity's GHG statement, and communicate as required by this ISAE, in accordance with the assurance professional's findings.

Definitions

12. For purposes of this ISAE, the following terms have the meanings attributed below:
 - (a) Assertions means representations by the entity, explicit or otherwise, that are embodied in the GHG statement, as used by the assurance professional to consider the different types of potential misstatements that may occur.
 - (b) Assurance professional means a professional accountant in public practice who has specialist skills, knowledge and experience in assurance concepts and processes developed through extensive training and practical application.
 - (c) Emissions means the GHGs that, during the relevant period, have been emitted to the atmosphere or would have been emitted to the atmosphere had they not been captured and channeled to a sink. Emissions can be categorized as:⁴
 - Direct emissions (also known as Scope 1 emissions), which are emissions from sources that are owned or controlled by the entity.
 - Indirect emissions, which are emissions that are a consequence of the activities of the entity, but which occur at sources that are owned or controlled by another entity. Indirect emissions can be further categorized as:

⁴ In terms of ISAE 3000, the entity's emissions, removals and emissions deductions are the "subject matter" of the assurance engagement.

- Scope 2 emissions, which are emissions associated with energy, including electricity, heating/cooling, and steam, that is transferred to and consumed by the entity.
 - Scope 3 emissions, which are all other indirect emissions. (Ref: Para. A4)
- (d) Emissions deduction means any item included in the entity's GHG statement that lowers the total reported for emissions and removals, but which is not a removal; it can include a variety of instruments or mechanisms such as offsets, performance credits, allowances, and contributions to a technology fund.
- (e) Emissions factor means a mathematical factor or ratio for converting units of an activity (for example, tonnes of fuel consumed, or tonnes of product produced) into an estimate of the quantity of GHGs associated with that activity.
- (f) Entity means the legal entity, economic entity, or the identifiable portion of a legal or economic entity, for example, a single factory or other form of facility, such as a land fill site, to which the emissions, removals and emissions deductions in the GHG statement relate.
- (g) GHG statement means a categorized listing disclosing an entity's emissions, removals and emissions deductions for a period (sometimes known as a statement of emissions and removals, or an emissions inventory), and explanatory notes including a summary of significant quantification and reporting policies.⁵
- (h) Greenhouse gases (GHGs) means carbon dioxide (CO₂) and any other gases required by the applicable criteria to be included in the GHG statement, such as: methane; nitrous oxide; sulphur hexafluoride; hydrofluorocarbons; perfluorocarbons; and chlorofluorocarbons. These other gases are often expressed in terms of carbon dioxide equivalents (CO₂-e).
- (i) Materiality – Information is material if its omission or misstatement could influence the decisions of intended users taken on the basis of the GHG statement. Materiality depends on the size of the item or error judged in the particular circumstances of its omission or misstatement.
- (j) Professional accountant in public practice means an individual who is a member of an IFAC member body irrespective of functional classification (e.g., audit, tax or consulting) in a firm that provides professional services. This term is also used to refer to a firm of professional accountants in public practice.
- (k) Quantification means the process of attributing a quantity of GHGs to a particular source or sink. (Ref: Para. A5)
- (l) Removal means GHGs the entity has removed from the atmosphere, or emissions the entity has prevented from being released to the atmosphere, during the period.⁶ (Ref: Para. A6)
- (m) Risk assessment procedures means the assurance procedures performed to obtain an understanding of the entity and its environment, including the entity's internal

⁵ In terms of ISAE 3000, the GHG statement is the “subject matter information” of the assurance engagement.

⁶ In terms of ISAE 3000, the entity's emissions, removals and emissions deductions are the “subject matter” of the assurance engagement.

control, to identify and assess the risks of material misstatement, whether due to fraud or error, at the GHG statement and assertion levels.

- (n) Sink means a physical unit or process that removes GHGs from the atmosphere.
- (o) Source means a physical unit or process that releases GHGs into the atmosphere.
- (p) Type of emissions or removals means a grouping of emissions or removals based on, for example, source of emission, type of gas, region, or facility.

Requirements

Direct Reporting Engagements

13. An assurance professional shall not accept an assurance engagement to report on a GHG statement that is a direct reporting engagement unless it is required by law or regulation, and:
 - (a) The assurance professional does not perform the measurement of the entity's emissions removals or emissions deductions;
 - (b) The entity accepts its responsibility for measuring the entity's emissions, removals and emissions deductions; (Ref: Para A7)
 - (c) The entity accepts its responsibility for making the representations required by ISAE 3000,⁷ and the auditor has reason to believe the entity will have a reasonable basis for those representations.

ISAE 3000

14. In addition to this ISAE, the assurance professional shall comply with ISAE 3000. (Ref: Paras.A8, A15-A19, A28, A40, and A45-A52)

Ethical Requirements

15. The assurance professional shall comply with relevant ethical requirements, including those pertaining to independence, relating to assurance engagements. (Ref: Para. A9-A10)

Acceptance and Continuance

16. In order to establish whether the preconditions for an assurance engagement are present, the assurance professional shall, in addition to the matters noted in ISAE 3000:⁸
 - (a) Determine whether:
 - (i) The assurance professional has a sufficient understanding of the quantification and reporting of emissions, removals and emissions deductions to: (Ref: Para. A11-A13)
 - Accept responsibility for the engagement;
 - Determine whether to use the work of an assurance professional's expert; and

⁷ ISAE 3000, paragraph xx.

⁸ ISAE 3000, paragraph xx.

- If using the work of an assurance professional's expert, determine whether that work is adequate for the assurance professional's purposes;
- (ii) The scope of the GHG statement or the assurance engagement will be so limited that either is unlikely to be useful to intended users, considering, in particular whether it is reasonable in the circumstances to: (Ref: Para. A14)
 - Exclude from the GHG statement significant emissions or removals that have been, or could readily be, quantified; or
 - Exclude from the assurance engagement significant emissions or removals that are included in the GHG statement; and
- (b) Obtain the agreement of the entity that it acknowledges and understands its responsibility:
 - (i) In the case of an assertion-based engagement, for stating in its GHG statement the applicable criteria it has used, and who developed them;
 - (ii) In the case of an assertion-based engagement, to acknowledge to intended users its responsibility for the preparation of its GHG statement in accordance with the applicable criteria; and
 - (iii) For such internal control as the entity determines is necessary to enable the preparation of a GHG statement that is free from material misstatement, whether due to fraud or error.

Assessing the Suitability of the Applicable Criteria

17. Criteria provide the benchmark for quantifying and reporting the entity's emissions, removals and emissions deductions. As part of determining whether the applicable criteria are suitable, as required by ISAE 3000, the assurance professional shall determine that they encompass at a minimum:⁹ (Ref: Para. A20-A22)
- (a) Identification of the organizations or facilities to be included in the entity's GHG statement, or the method for determining the organizations or facilities to be included; (Ref: Para. A23)
 - (b) The GHGs to be accounted for;
 - (c) Quantification methods to be used and, when choices between different methods are allowed, or entity-specific methods are used, a requirement to disclose the method used and the rationale for doing so; and
 - (d) Disclosure of:
 - (i) The method used for determining which organizations or facilities to include in the entity's GHG statement if the applicable criteria allow a choice between different methods; (Ref: Para. A23)
 - (ii) The method used to determine which Scope 1, Scope 2, and Scope 3 emissions have been included in the GHG statement; (Ref: Para. A24-A27)

⁹ ISAE 3000, paragraph xx.

- (iii) Separate disclosure of emissions and removals attributable to each material type of emission and removal included in the GHG statement, and separate disclosure of each material emissions deduction;
- (iv) Any significant interpretations made in applying the applicable criteria in the entity's circumstances; and
- (v) Changes, if any, in the matters mentioned in this paragraph or in other matters that materially affect the comparability of the GHG statement from the previous reporting period.

Materiality

18. ISAE 3000 requires, when appropriate in the context of the engagement, that the assurance professional perform a number of procedures with respect to materiality.¹⁰ Those procedures are appropriate in the context of assurance on a GHG statement. (Ref: Para. A29-A34)

Identifying, Assessing and Responding to the Risks of Material Misstatement

Risk Assessment Procedures

19. ISAE 3000 requires, when appropriate in the context of the engagement, that the assurance professional's risk assessment procedures include analytical procedures, and observation and inspection.¹¹ Including analytical procedures,¹² and observation and inspection, is appropriate in the context of assurance on a GHG statement.

The Entity and Its Environment

20. In obtaining an understanding of the aspects of the entity and its environment that are relevant to the engagement, as required by ISAE 3000, the assurance professional shall obtain an understanding of the following:¹³
- (a) Relevant industry, regulatory, and other external factors including the applicable criteria.
 - (b) The nature of the entity, including:
 - (i) The organizations or facilities included in the GHG statement and the nature of their operations, which determine: (Ref: Para. A23)
 - the types of emission sources and removal sinks;
 - the contribution of each to the entity's overall emissions and removals; and
 - elements of the uncertainties associated with the quantities reported in the GHG statement.

¹⁰ ISAE 3000, paragraphs xx, yy and zz.

¹¹ ISAE 3000, paragraph xx.

¹² These may include substantive analytical procedures required by paragraph 26 of this ISAE.

¹³ ISAE 3000, paragraph xx.

- (ii) Changes in the nature or extent of operations, including whether there have been any mergers, acquisitions, or sales of emission sources or removal sinks, or outsourcing of functions with significant emissions or removals that may require adjustment of the entity's baseline or disclosure in the GHG statement; and changes in the frequency or nature of incidents such as shut downs, compared to previous periods.
- (c) The entity's selection and application of emissions, removals and emissions deductions quantification methods and reporting policies, including the reasons for changes thereto and the potential for double-counting of emissions, removals or emissions deductions. The assurance professional shall evaluate whether the entity's emissions, removals and emissions deductions quantification methods and reporting policies are appropriate for its operations and consistent with the applicable criteria and quantification and reporting policies used in the relevant industry.
- (d) The entity's objectives and strategies, and those related business risks that may result in risks of material misstatement. (Ref: Para. A35)
- (e) The review of emissions, removals and emissions deductions by the entity.

Internal Control

21. ISAE 3000 requires, when appropriate in the context of the engagement, that the assurance professional perform a number of procedures with respect to internal control.¹⁴ It is appropriate in the context of assurance on a GHG statement for the assurance professional to perform those procedures. (Ref: Para. A36)

Identifying and Assessing Risks at the Assertion Level

22. ISAE 3000 requires, when appropriate in the context of the engagement, that the assurance professional identify and assess the risks of material misstatement at the assertion level.¹⁵ Identification and assessment of the risks of material misstatement at the assertion level is appropriate in the context of assurance on a GHG statement. (Ref: Para. A37-A39)

Risks that Require Special Consideration

23. ISAE 3000 requires, when appropriate in the context of the engagement, that the assurance professional determine whether any of the risks identified are, in the practitioner's judgment, a significant risk.¹⁶ It is appropriate in the context of assurance on a GHG statement for the assurance professional to determine whether any of the risks identified are, in the practitioner's judgment, a significant risk.
24. In exercising judgment as to which risks are significant risks, the assurance professional shall consider at least the following:
- (a) Whether the risk is a risk of fraud or intentional misstatement in the GHG

¹⁴ ISAE 3000, paragraphs xx, yy and zz.

¹⁵ ISAE 3000, paragraph xx.

¹⁶ ISAE 3000, paragraph xx.

statement, or a risk of omission of a potentially significant source or sink; (Ref: Para. A41(a))

- (b) Whether the risk is related to recent significant economic, regulatory or other developments; (Ref: Para. A41(b))
- (c) The nature of operations related to the risk; (Ref: Para. A41(c))
- (d) The complexity of quantification methods related to the risk; (Ref: Para. A41(d))
- (e) Whether the risk involves complexity in determining the organizational boundary; (Ref: Para. A23)
- (f) Whether the risk involves related parties;
- (g) Whether the risk involves Scope 3 emissions; (Ref: Para. A41(e))
- (h) Whether the risk involves significant emissions, removals or emissions deductions that are outside the normal course of business for the entity, or that otherwise appear to be unusual; or the degree of subjectivity in the measurement of emissions, removals and emissions deductions related to the risk, especially those measurements involving significant estimation uncertainty. (Ref: Para. A41(f))

Substantive Procedures Responsive to Significant Risks

25. ISAE 3000 requires, when appropriate in the context of the engagement, that the assurance professional perform tests of details when the approach to a significant risk consists only of substantive procedures.¹⁷ It is appropriate in the context of assurance on a GHG statement for the assurance professional to perform tests of details when the approach to a significant risk consists only of substantive procedures.

Substantive Analytical Procedures

26. ISAE 3000 requires, when appropriate in the context of the engagement, that the assurance professional perform substantive analytical procedures.¹⁸ It is appropriate in the context of assurance on a GHG statement for the assurance professional to perform substantive analytical procedures.¹⁹ (Ref: Para. A42-A44)

Evaluation of Misstatements Identified during the Engagement

27. ISAE 3000 requires, when appropriate in the context of the engagement, that the assurance professional perform a number of procedures with respect to the evaluation of misstatements identified during the engagement.²⁰ It is appropriate in the context of assurance on a GHG statement for the assurance professional to perform those procedures.

¹⁷ ISAE 3000, paragraph xx.

¹⁸ ISAE 3000, paragraph xx.

¹⁹ These may include analytical procedures performed as risk assessment procedures as required by paragraph 19 of this ISAE.

²⁰ ISAE 3000, paragraphs xx, yy and zz.

Written Representations

28. In addition to the written representation required by ISAE 3000, the auditor shall request management to provide a written representation that it has communicated to the auditor all deficiencies in internal control relevant to the engagement of which management is aware.²¹

Preparing the Assurance Report

Forming the Assurance Conclusion

29. The assurance professional shall evaluate whether the GHG statement is prepared, in all material respects, in accordance with the applicable criteria. This evaluation shall include consideration of the qualitative aspects of the entity's quantification methods and reporting practices, including indicators of possible bias in judgments made in preparing the GHG statement.
30. In particular, the assurance professional shall evaluate whether, in view of the applicable criteria:
- (a) The GHG statement adequately discloses the significant quantification methods and reporting policies selected and applied;
 - (b) The quantification methods and reporting policies selected and applied are consistent with the applicable criteria and are appropriate;
 - (c) Estimates made in preparing the GHG statement are reasonable;
 - (d) The information presented in the GHG statement is relevant, reliable, complete, comparable and understandable;
 - (e) The GHG statement provides adequate disclosures to enable the intended users to understand the information conveyed;
 - (f) The terminology used in the GHG statement is appropriate; and
 - (g) The GHG statement achieves fair presentation, including consideration of:
 - (i) The overall presentation, structure and content of the GHG statement; and
 - (ii) Whether the GHG statement, including the explanatory notes, represents the underlying emissions, removals and emissions deductions in a manner that achieves fair presentation.
31. The assurance professional shall evaluate whether the GHG statement adequately refers to or describes the applicable criteria. (Ref: Para. A53-A55)

Assurance Report Content

32. The assurance report shall include the following basic elements: (Ref: A56)
- (a) A title that clearly indicates the report is an independent assurance report.
 - (b) The addressee of the assurance report.
 - (c) Identification of the GHG statement and, if any sources or sinks are not covered by

²¹ ISAE 3000, paragraph xx.

the assurance professional's conclusion, identification of those sources or sinks, and a statement that the assurance professional has not performed any assurance procedures with respect to them and that, therefore, no conclusion on them is expressed.

- (d) If the GHG statement includes emissions deductions, identification of those emissions deductions, and either a statement of the assurance professional's responsibility with respect to them, or a statement that the assurance professional has not performed any assurance procedures with respect to them and that, therefore, no conclusion on them is expressed. (Ref: Para. A57)
- (e) A statement of the uncertainties inherent in emissions, removals and emissions deductions quantification and reporting.
- (f)
 - (i) Identification of the applicable criteria;
 - (ii) Identification of how intended users can access those criteria;
 - (iii) If those criteria are available only to specific intended users, or are relevant only to a specific purpose, a statement restricting the use of the assurance report to those intended users or that purpose; and
 - (iv) If established criteria need to be supplemented by disclosures in the explanatory notes for those criteria to be suitable, identification of the relevant note(s).
- (g) A description of the entity's and the assurance professional's responsibilities.
- (h) A statement that the engagement was performed in accordance with ISAE 3410, "Assurance on a Greenhouse Gas Statement."
- (i) A statement that the IFAC Code and ISQC 1 have been complied with.
- (j) A summary of the assurance professional's procedures.
- (k) The assurance professional's conclusion, expressed in the positive form,²² about whether the GHG statement is presented fairly, in all material respects, in accordance with the criteria identified in paragraph 32(f)(i).
- (l) If the assurance professional expresses an opinion that is other than unqualified, a clear description of all the reasons therefor.
- (m) The date of the report.
- (n) The name of the assurance professional or the assurance professional's firm.
- (o) The name of the city where the office that has responsibility for the engagement is.

Other Reporting Requirements

33. ISAE 3000 requires, when appropriate in the context of the engagement, that the assurance professional communicate certain deficiencies in internal control to those charged with governance and management.²³ It is appropriate in the context of assurance

²² In the case of a limited assurance engagement, the assurance professional's conclusion is expressed in the negative form. See paragraph 34.

²³ ISAE 3000, paragraphs xx-yy.

on a GHG statement for the assurance professional to communicate deficiencies in internal control to those charged with governance and management as described in ISAE 3000.

Limited Assurance Engagements

34. In the case of a limited assurance engagement, the requirements of this ISAE apply except that: (Ref: Para. A58)
- (a) The assurance professional need not:
 - (i) Perform procedures in addition to inquiry of the entity's personnel to obtain an understanding of controls that are relevant to the engagement;²⁴ or (Ref: Para. A59)
 - (ii) Perform tests of details other than inquiry of the entity's personnel when the approach to a significant risk consists only of substantive procedures,²⁵ unless it is necessary to do so to enable the assurance professional to report; and (Ref: Para. A60)
 - (b) The assurance professional's conclusion shall be expressed in the negative form.²⁶ (Ref: Para. A61)

Application and Other Explanatory Material

Introduction

Assurance Professionals (Ref: Para. 1)

- A1. This ISAE has been written within the context of a range of measures taken to ensure the quality of assurance engagements undertaken by professional accountants in public practice, such as those taken by IFAC member bodies in accordance with IFAC's Member Body Compliance Program and Statements of Membership Obligations.²⁷
- A2. "Although some professional accountants deliver a wide range of accounting and business-related services, others will choose to specialize in one or more areas. No one professional accountant can master all areas of accountancy. Specialization is necessary to ensure services can be provided by professional accountants having sufficient depth of knowledge and expertise."²⁸ One area of specialization is assurance. Competence in this area requires specialist skills, knowledge and experience in assurance concepts and processes developed through extensive training and practical application.

²⁴ Refer to paragraph 21 of this ISAE and ISAE 3000, paragraph yy.

²⁵ Refer to paragraph 25 of this ISAE and ISAE 3000, paragraph yy.

²⁶ Refer to paragraph 32(k) of this ISAE.

²⁷ ISAE 3000, paragraphs xx-yy.

²⁸ International Education Standard (IES) 8, "Competence Requirements for Audit Professionals."

Key Performance Indicators Based on GHG Data (Ref: Para. 2(b))

- A3. An example of a key performance indicator based on GHG data is the weighted average of emissions per kilometer of vehicles manufactured by an entity during a period, which is required to be calculated and disclosed by law or regulation in some jurisdictions.

Definitions

Scope 3 Emissions (Ref: Para. 12(c))

- A4. Scope 3 emissions may include emissions associated with, for example, employee business travel; outsourced activities; consumption of fossil fuel or electricity required to use the entity's products; extraction and production of materials purchased as inputs to the entity's processes; and transportation of purchased fuels. Scope 3 emissions are discussed further in paragraphs A25-A27.

Quantification (Ref: Para. 12(k))

- A5. GHG sources may be quantified by direct measurement (or direct monitoring) of GHG concentration and flow rates using continuous emissions monitoring or periodic sampling; or by measuring a surrogate activity, such as fuel consumption, and calculating emissions using, for example, mass balance equations,²⁹ entity-specific emissions factors, or average emissions factors for a region, source, sector or process.

Removal (Ref: Para. 12(l))

- A6. Removal may be achieved by storing GHGs in geological or biological sinks. Removal of GHGs the entity would have otherwise emitted to the atmosphere are ordinarily accounted for on a gross basis, i.e., both the source and the sink are disclosed in the GHG statement.

Direct Reporting Engagements (Ref: Para. 13(b))

- A7. It is not necessary that management or employees of the entity perform the measurement of the entity's emissions, removals and emissions deductions; for example, the entity may engage an external management's expert to do this. The assurance professional may assist the entity in compiling the GHG statement from measurements performed by others.

ISAE 3000 (Ref: Para 14)

- A8. In terms of ISAE 3000, the entity's emissions, and removals and emissions deductions are the "subject matter" of the assurance engagement, and the GHG statement is the "subject matter information" of the assurance engagement.

Ethical Requirements (Ref: Para. 15)

- A9. The IFAC Code adopts a threats and safeguards approach to independence. Compliance with the fundamental principles may potentially be threatened by a broad range of circumstances. Many threats fall into the following categories:

²⁹ That is, equating the amount of a substance entering and exiting a defined boundary, for example, the amount of carbon in a hydrocarbon based fuel entering a combustion device equals the amount of carbon exiting the device in the form of carbon dioxide.

- Self-interest, for example, undue dependence on total fees from the entity.
- Self-review, for example, performing another service for the entity that directly affects the GHG statement, such as involvement in the quantification of the entity's emissions, removals or emissions deductions.
- Advocacy, for example, acting as an advocate on behalf of the entity with respect to the interpretation of the applicable criteria.
- Familiarity, for example, a member of the engagement team having a long association, or close or immediate family relationship, with an employee of the entity who is in a position to exert direct and significant influence over the preparation of the GHG statement.
- Intimidation, for example, being pressured to reduce inappropriately the extent of work performed in order to lower fees, or being threatened with withdrawal of the assurance professional's registration by a registering authority that is associated with the entity's industry group.

A10. Safeguards created by the profession, legislation or regulation, or safeguards in the work environment, may eliminate or reduce such threats to an acceptable level.

Understanding the Quantification and Reporting of Emissions, Removals and Emissions Deductions (Ref: Para. 16(a)(i))

A11. In some cases, an assurance engagement on a GHG statement may be quite straightforward. This may be the case for instance when a service entity has no Scope 1 emissions and is reporting only Scope 2 emissions using an emissions factor specified in regulation, applied to electricity consumption at a single location. In this case, the assurance engagement may focus largely on the system used to record and process electricity consumption figures identified on invoices, and arithmetical application of the specified emissions factor. General GHG skills, knowledge or experience that may, nonetheless, be expected in such cases include:

- Understanding climate science, including the scientific processes that relate GHGs to global warming.
- Understanding who the intended users of the information in the entity's GHG statement are, and how they use that information.
- Understanding emissions trading schemes, when relevant, including how reported emissions, removals and emissions deductions are interpreted by market participants and affect market mechanisms.
- Knowledge of applicable laws and regulations that affect how the entity should report its emissions, removals and emissions deductions, and may also, for example, impose a limit on the entity's emissions.
- Knowledge of the applicable criteria, including, for example:
 - Appropriate application of emissions factors.
 - Identifying those aspects of the criteria that call for significant or sensitive estimates to be made, or for the application of considerable judgment.
 - Methods used for determining which entities' emissions, removals and emissions deductions are to be included in the GHG statement.

- Which emissions deductions are permitted to be included in the entity's GHG statement.

A12. In many other cases, however, an assurance engagement on a GHG statement requires specialist skills, knowledge and experience in the quantification and reporting of emissions, removals and emissions deductions. Particular areas of expertise that may be relevant in such cases include:

Information systems expertise

- Understanding how emissions, removals and emissions deductions information is generated, including the assessment of controls over how data is initiated, recorded, processed, corrected as necessary, collated and reported in a GHG statement.

Scientific expertise

- Mapping the flow of materials through a production process, and the accompanying processes that create emissions, including identifying the relevant points at which source data are gathered. This may be particularly important in considering whether the entity's identification of emissions sources is complete.
- Analyzing chemical and physical relationships between inputs, processes and outputs, including emissions and removals; and relationships between emissions, removals and other variables. The capacity to understand and analyze these relationships will often be important in designing analytical procedures that are sufficiently robust to identify a material misstatement.
- Identifying the components of uncertainty and the effect of uncertainty on the GHG statement.
- Experience with specific industries and related emissions creation and removal processes. Procedures for Scope 1 emissions quantification vary greatly depending on the industries and processes involved, for example, the nature of electrolytic processes in aluminum production; combustion processes in the production of electricity using fossil fuels; and chemical processes in cement production are all different.
- The operation of physical sensors and other quantification methods, and the selection of appropriate emissions factors.

A13. The IFAC Code requires the assurance professional to agree to provide only those services that the professional accountant in public practice is competent to perform,³⁰ and ISQC 1 requires the firm to establish policies and procedures for the acceptance and continuance of client relationships and specific engagements, designed to provide the firm with reasonable assurance that it will only undertake or continue relationships and engagements where the firm is competent to perform the engagement and has the capabilities, including time and resources, to do so.³¹

Scope of the GHG Statement and the Assurance Engagement (Ref: Para. 16(a)(ii))

A14. Examples of circumstances where the reasons for excluding known emissions sources or

³⁰ The IFAC Code, paragraph 210.7

³¹ ISQC 1, paragraph 26.

removals from the GHG statement, or excluding disclosed emission sources or removals from the assurance engagement, may not be reasonable in the circumstances include where:

- The entity has significant Scope 1 emissions but only includes Scope 2 emissions in the GHG statement.
- The entity is a part of a larger legal entity that has significant emissions, removals or emissions deductions that are not being reported on because of the way the organizational boundary has been determined, and this is likely to mislead intended users.

Assessing the Appropriateness of the Subject Matter (Ref: Para. 14)

A15. ISAE 3000 requires the assurance professional to determine whether the subject matter is appropriate.³² In terms of ISAE 3000, the quantity of the entity's emissions, removals and emissions deductions is the "subject matter" of the engagement. An appropriate subject matter is, amongst other things, capable of consistent evaluation or measurement against suitable criteria.³³ GHG quantification is unavoidably subject to both scientific and estimation uncertainty. Scientific uncertainty arises because of incomplete scientific knowledge in the field of GHGs. Estimation uncertainty may arise because of:

- The inherent uncertainty in quantifying inputs, such as activity data and emission factors, that are used by mathematical models to estimate emissions and removals (sometimes known as measurement, or parameter, uncertainty).
- The inability of such models to precisely characterize under all circumstances the relationships between various inputs and the resultant emissions and removals (sometimes known as calculation, or model, uncertainty).
- The fact that uncertainty increases as emissions and removals quantities with different levels of measurement and calculation uncertainty are aggregated (sometimes known as propagation, or aggregation, uncertainty).

A16. The mere existence of scientific and estimation uncertainty does not mean the quantity of the entity's emissions and removals are not capable of consistent measurement against suitable criteria.

A17. Because intended users may not understand the uncertainties associated with the quantification of emissions, and removals and emissions deductions if they are not adequately explained, it may be appropriate to include in the explanatory notes a discussion of the nature of the uncertainties that affect the GHG statement. This is particularly so where the intended users did not determine the criteria to be used. For example, a GHG statement may be available to a broad range of intended users even though the criteria used were developed for a particular regulatory purpose.

A18. It may also be appropriate to include in the explanatory notes a quantification of uncertainties, particularly where information included in the explanatory notes or in other information accompanying the GHG statement includes comparisons of emissions, removals or emissions deductions, such as period-on-period comparisons, or comparison

³² ISAE 3000, paragraph xx.

³³ Assurance Framework, paragraph 37, and ISAE 3000, paragraph 33.

to a baseline. The smaller the differences that result from such comparisons, the more important it is that users be informed of the uncertainty inherent in the quantification.

- A19. Regardless of what, if any, disclosures regarding uncertainties are included in the explanatory notes, uncertainty is a characteristic of the subject matter that paragraph 32(e) requires to be mentioned in the assurance report to ensure readers of that report are aware of it.³⁴

Assessing the Suitability of the Criteria

Specifically Developed and Established Criteria (Ref: Para. 17)

- A20. Suitable criteria exhibit the following characteristics: relevance, completeness, reliability, neutrality, and understandability. Criteria may be “specifically developed” or they may be “established,” i.e., embodied in laws or regulations, or issued by authorized or recognized bodies of experts that follow a transparent due process.³⁵
- A21. Specifically developed criteria may be appropriate when, for example, the entity has very specialized machinery or is aggregating emissions, removals and emissions deductions information from different jurisdictions where the established criteria used in those jurisdictions differ. Special care may be necessary when assessing the neutrality and other characteristics of specifically developed criteria, particularly if they are not substantially based on established criteria generally used in the entity’s industry or region, or are inconsistent with such criteria.
- A22. Even established criteria will ordinarily need to be supplemented by disclosures, in the explanatory notes of the GHG statement, of specific boundaries, methods, assumptions, emission factors, etc. In some cases, established criteria may not be suitable, even when supplemented by disclosures in the explanatory notes of the GHG statement. Some established criteria may be developed for application in particular circumstances, and be unsuitable for application in other circumstances. For example, criteria that include emissions factors for a particular region may render misleading information if used for emissions in another region; or criteria that are designed to report only on particular regulatory aspects of emissions may be unsuitable for reporting to intended users other than the regulator that developed the criteria.

Organizations or Facilities Included in the GHG Statement (Ref: Para. 17(a), 17(d)(i), 20(b)(i) and 24(e))

- A23. Determining which organizations or facilities to include in the entity’s GHG statement is known as determining the entity’s organizational boundary. In some cases, the applicable criteria may allow a choice between different methods for determining the entity’s organizational boundary, for example, the criteria may allow a choice between the equity share approach and the control approach. Determining the entity’s organizational boundary may require the analysis of complex organizational structures such as joint ventures, partnerships, and trusts, and complex or unusual contractual relationships. For example, a facility may be owned by one party, operated by another, and process materials solely for another party. Determining which party is responsible for reporting

³⁴ See also ISAE 3000, paragraph 49(c).

³⁵ Assurance Framework, paragraphs 36-37, and ISAE 3000, paragraph 20.

the facility's emissions in such a situation may be difficult, particularly if all three parties are reporting and each uses different criteria.

Scope 1, Scope 2 and Scope 3 Emissions (Ref: Para. 17(d)(ii))

- A24. Criteria commonly call for all material Scope 1 emissions, Scope 2 emissions, or both Scope 1 and Scope 2 emissions, to be included in the GHG statement. Where some Scope 1 or Scope 2 emissions sources have been excluded, it is important that the explanatory notes disclose the basis for determining which sources are included and which are excluded, particularly if the sources that are included are not likely to be the largest sources for which the entity is responsible.
- A25. While some criteria require the reporting of specific Scope 3 emissions, more commonly the inclusion of Scope 3 emissions is entirely optional because the full extent of indirect emissions for nearly any entity would be impossible to quantify as it includes all sources both up and down the entity's supply chain. Where some Scope 3 emissions sources have been included, it is important that the basis for selecting which sources to include is reasonable, and that the explanatory notes disclose:
- (a) That because of the nature of Scope 3 emissions, it is not practicable for an entity to include all Scope 3 emissions in its GHG statement; and
 - (b) The basis for selecting those Scope 3 emissions sources that have been included, particularly if they are not likely to be the largest sources for which the entity is responsible.
- A26. In some cases, the source data used to quantify Scope 3 emissions may be maintained by the entity. For example, the entity may keep detailed records as the basis for quantifying emissions associated with employee air travel. In some other cases, the source data used to quantify Scope 3 emissions may be maintained in a well controlled and accessible source outside the entity. Where this is not the case, however, it may be unlikely that the assurance professional will be able to obtain sufficient appropriate evidence with respect to Scope 3 emissions sources. In such cases, it may be appropriate to exclude those Scope 3 emissions sources from the assurance engagement.
- A27. It may also be appropriate to exclude Scope 3 emissions sources from the assurance engagement where the quantification methods commonly in use are imprecise or lead to large variations in reported emissions. For example, various quantification methods for estimating the emissions associated with air travel are commonly in use, and can give widely varying quantifications even when identical source data is used. If such Scope 3 emissions sources are included in the assurance engagement, it is important that the quantification methods used are selected objectively and that they are fully described along with the uncertainties associated with them.

Planning (Ref: Para. 14)

- A28. When establishing the overall engagement strategy, as required by ISAE 3000, it may be relevant to consider the emphasis given to different aspects of the design and implementation of the GHG information system.³⁶ For example, in some cases the entity may have to be particularly conscious of the need for adequate internal control to ensure

³⁶ ISAE 3000, paragraph xx.

the reliability of reported information, while in other cases the entity may have focused more on accurately determining the scientific, operational or technical characteristics of the information to be gathered.

Materiality (Ref: Para. 18)

- A29. The assurance professional's determination of materiality is a matter of professional judgment, and is affected by the assurance professional's perception of the common information needs of intended users as a group. The possible effect of misstatements on specific individual users, whose needs may vary widely, is not considered. In this context, it is reasonable for the assurance professional to assume that intended users:
- (a) Have a reasonable knowledge of GHG related activities, and a willingness to study the information in the GHG statement with reasonable diligence;
 - (b) Understand that GHG statements are prepared to levels of materiality;
 - (c) Recognize the uncertainties involved in the quantification of emissions, removals and emissions deductions;³⁷ and
 - (d) Make reasonable decisions on the basis of the information in the GHG statement.
- A30. Judgments about materiality are made in light of surrounding circumstances, and are affected by both quantitative and qualitative factors.
- A31. Quantitative factors include not only the quantity of GHGs to be disclosed for a particular type of emission, removal or emissions deductions, but also how that type relates in quantitative terms to the entity's total reported emissions, removals and emissions deductions, and how the GHG statement presents relevant information, for example, whether it includes comparisons as discussed in paragraph A18.
- A32. Qualitative factors may include, for example: the source of an emission; the type of gas involved; the uncertainties associated with quantification; the context in which the information in the GHG statement will be used (for example, whether the information is for use in an emissions trading scheme, is for submission to a regulator, or is for inclusion in a widely distributed sustainability report); and the types of decisions that intended users likely to make.
- A33. In some cases, the applicable criteria may set a threshold for measurement, or parameter, uncertainty, and may refer to this materiality. For example, the criteria may state an expectation that total emissions are measured with a 5% "materiality threshold." Where this is the case, the threshold set by the criteria provides a frame of reference to the assurance professional in determining materiality for the engagement.
- A34. If, in the specific circumstances of the entity, there is one or more element for which misstatements of lesser amounts than materiality for the subject matter information as a whole could reasonably be expected to influence the decisions of users taken on the basis of the subject matter information, ISAE 3000 requires the assurance professional to determine the materiality level or levels to be applied to particular elements of the subject matter information. In the case of assurance on a GHG statement there may be particular types of emissions, removals, emissions deductions or disclosures for which

³⁷ See paragraphs A15-A19.

misstatements of lesser quantities than materiality for the GHG statement as a whole could reasonably be expected to influence the decisions of users taken on the basis of the GHG statement. These may include, for example, gases that, as well as contributing to climate change, are ozone depleting; or processes that are particularly controversial, such as the use of oil sands.

Identifying, Assessing and Responding to the Risks of Material Misstatement

Objectives and Strategies (Ref: Para. 20(d))

- A35. Consideration of the entity's climate change strategy, if any, and associated regulatory, physical and reputational risk, may assist the assurance professional to identify risks of material misstatement in the GHG statement. For example, if the entity has made commitments to become carbon neutral, this may provide an incentive to understate emissions and overstate removals and emissions deductions so the target will appear to be achieved within a declared timeframe. Conversely, if the entity is expecting to be subject to a regulated emissions trading scheme in the future, this may provide an incentive to overstate emissions and understate removals and emissions deductions in the meantime to increase the opportunity for it to receive a larger permit quota at the outset of the scheme.

Control Activities Relevant to the Engagement (Ref: Para. 21)

- A36. The assurance professional's judgment about whether particular control activities are relevant to the engagement may be affected by the level of sophistication, documentation and formality of the entity's information system, including the related business processes, relevant to reporting emissions, removals and emissions deductions. As reporting of emissions, removals and emissions deductions evolves, it can be expected that so too will the level of sophistication, documentation and formality of information systems and related control activities relevant to the recording, processing and reporting of emissions, removals and emissions deductions. In immature information systems, particular control activities are likely to be more rudimentary, less well documented, and may only exist informally. When this is the case, it is less likely the assurance professional will judge it necessary to understand particular control activities in order to assess the risks of material misstatement at the assertion level and design further assurance procedures responsive to assessed risks. In some regulated schemes, on the other hand, the information system and control activities may be required to be formally documented and their design approved by the regulator. Even in some of these cases, however, not all relevant data flows and associated controls may be documented. For example, it may be more likely that control activities with respect to source data collection from continuous monitoring are sophisticated, well documented, and more formal than control activities with respect to subsequent data processing and reporting.

The Use of Assertions (Ref: Para. 22)

- A37. In representing that the GHG statement is in accordance with the applicable criteria, the entity implicitly or explicitly makes assertions regarding the recognition, quantification, presentation and disclosure of the various emissions, removals and emissions deductions, and related disclosures.
- A38. Assertions used by the assurance professional to consider the different types of potential misstatements that may occur fall into the following three categories and may take the following forms:

- (a) Assertions about emissions, removals and emissions deductions for the period subject to assurance:
 - (i) Occurrence—emissions, removals and emissions deductions that have been recorded have occurred and pertain to the entity.
 - (ii) Completeness—all emissions, removals and emissions deductions that should have been recorded have been recorded.³⁸
 - (iii) Accuracy—the quantification of emissions, removals and emissions deductions has been recorded appropriately.
 - (iv) Cutoff—emissions, removals and emissions deductions have been recorded in the correct reporting period.
 - (v) Classification—emissions, removals and emissions deductions have been recorded as the proper type.
- (b) Assertions about presentation and disclosure:
 - (i) Occurrence and responsibility—disclosed emissions, removals, emissions deductions and other matters have occurred and pertain to the entity.
 - (ii) Completeness—all disclosures that should have been included in the GHG statement have been included.
 - (iii) Classification and understandability—emissions, removals and emissions deductions information is appropriately presented and described, and disclosures are clearly expressed.
 - (iv) Accuracy and quantification—emissions, removals and emissions deductions quantification and other information included in the GHG statement is disclosed fairly.
 - (v) Consistency and comparability—changes in quantification methods have been adequately disclosed, and the presentation of historical emissions, removals and emissions deductions data takes account of any significant structural changes in the entity.

A39. The assurance professional may use the assertions as described above or may express them differently provided all aspects described above have been covered.

Causes of Risks of Material Misstatement (Ref: Para. 14)

A40. ISAE 3000 requires the assurance professional to identify and assess the risks of material misstatement.³⁹ Examples of causes of risks of material misstatement that may be relevant include:

- (a) Selection of an inappropriate quantification method, for example, calculating emissions using an emissions factor when using a more accurate direct measurement method would be more appropriate. Selecting an appropriate quantification method is particularly important when the method has been changed. This is because intended users may often be interested in emissions, removals and

³⁸ See paragraphs A15.1-A16 for a discussion of completeness with respect to various Scopes.

³⁹ ISAE 3000, paragraph xx.

emissions deductions trends over time, or relative to a baseline. Some criteria may require that quantification methods are only changed when a more accurate method is to be used.

- (b) Incorrect application of a quantification method, such as, not calibrating meters or reading them sufficiently frequently, or use of an incorrect emissions factor. For example, an emissions factor may be predicated on an assumption of continuous use and is not appropriate to use after a shut down.
- (c) Human error in measurement or calculation, which may be more likely to occur if personnel are unfamiliar with, or not well trained regarding, emissions, removals and emissions deductions processes or data recording.
- (d) Omission of one or more emissions sources or removals sinks. Sources and sinks that are less obvious may be more likely to be overlooked, such as GHG leakages (fugitive emissions).
- (e) Omission of a particular GHG (for example, methane).
- (f) Changes in operations or boundaries, for example, introduction of new processes, or the sale, acquisitions or outsourcing of emissions sources or removal sinks.
- (g) Undue reliance on a poorly designed information system which may have few effective controls.
- (h) Double counting of an emission source, removals sink or emissions deduction, perhaps due to inadequate coordination in the identification of sources and sinks at a complex installation.
- (i) Manual adjustment of otherwise automatically recorded activity levels, for example, manual input may be required if a flare meter becomes overloaded.
- (j) Changes in quantification methods or input variables, for example, if the quantification method used is based on the carbon content of biomass, and the composition of the biomass used changes during the period.

Risks that Require Special Consideration (Ref: Para. 24)

A41. Examples of causes of risks that may require special consideration include:

- (a) Incentives for intentional misstatement in the GHG statement, which may arise if, for example, those who are directly involved with, or have the opportunity to influence, the emissions, removals and emissions deductions reporting process have a significant portion of their compensation contingent upon achieving aggressive GHG targets. As noted in paragraph A35, other incentives to either under or overstate emissions, removals and emissions deductions may result from the entity's climate change strategy, if any, and associated regulatory, physical and reputational risks.
- (b) Significant economic, regulatory or other developments, for example, increases in renewable energy targets may lead to increased risk of misclassification of sources at an electricity generator.
- (c) When the nature of the entity's operations is complex (for example, it involves multiple and disparate sites and processes), is discontinuous (for example, peak load electricity generation), or results in few or weak relationships between the

entity's emissions and other measurable activity levels (for example, a cobalt nickel plant). In such cases, the opportunity for meaningful analytical procedures may be significantly reduced.

- (d) Complexity in quantification methods, for example, extensive or complex mathematical manipulation of source data, such as the need to use complex mathematical models, or extensive use of state conversion factors, such as those to convert measures of liquid to measures of gas, or unit conversion factors, such as those to convert imperial measures to metric measures.
- (e) The inclusion of Scope 3 emissions where the source data used in quantification are not maintained by the entity, or where quantification methods commonly in use are imprecise or lead to large variations in reported emissions.⁴⁰
- (f) Significant non-routine emissions, removals and emissions deductions, or judgmental matters are a source of greater risk relative to routine, non-complex emissions, removals and emissions deductions that are subject to systematic quantification and reporting. Non-routine emissions, removals and emissions deductions are those that are unusual, in size or nature, and that therefore occur infrequently, for example one-off events such as a plant malfunction or major leak. Judgmental matters may include the development of subjective estimates for which there is significant estimation uncertainty. Risks of material misstatement may be greater because of matters such as:
 - Greater management intervention to specify the quantification methods or reporting treatment.
 - Greater manual intervention for data collection and processing.
 - Complex calculations or quantification methods and reporting principles.
 - The nature of non-routine emissions, removals and emissions deductions, which may make it difficult for the entity to implement effective controls over the risks.
 - Quantification methods and reporting principles for estimates may be subject to differing interpretation.
 - Required judgments may be subjective or complex.

Analytical Procedures (Ref: Para. 26)

A42. In many cases, the fixed nature of physical or chemical relationships between particular emissions or removals and other measurable phenomena allows for the design of powerful analytical procedures, both as risk assessment and substantive procedures, for example, the relationship between fuel consumption and carbon dioxide and nitrous oxide emissions.

A43. Similarly, a reasonably predictable relationship may exist between emissions or removals and financial information, for example, the relationship between Scope 2 emissions from electricity and the general ledger balance for electricity purchases.

⁴⁰ Refer paragraphs A24-A27.

A44. Analytical procedures may be particularly effective when disaggregated data is readily available, or when the assurance professional has reason to consider the data to be used is reliable, such as when it is extracted from a well controlled source. In some cases, data to be used may be captured by the financial reporting information system, or be entered in another information system in parallel with the entry of related financial data, and some common input controls applied. For example, the quantity of fuel purchased as recorded on suppliers' invoices may be input under the same conditions that relevant invoices are entered into an accounts payable system.

Using the Work of an Expert (Ref: Para. 14)

Using the Work of an Assurance Professional's Expert

A45. In nearly all cases, the assurance work will be performed by a multi-disciplinary team that includes assurance professional's experts. Assurance professional's experts may be employed by the assurance professional's firm, or engaged by that firm, perhaps as part of a strategic alliance or ongoing subcontracting arrangement with an organization of experts (such as a firm of consulting engineers). ISAE 3000 includes a number of requirements with respect to using the work of assurance professional's experts, including the requirement for the assurance professional to obtain a sufficient understanding of the field of expertise of the assurance professional's expert to enable the assurance professional to:⁴¹

- (a) Determine the nature, scope and objectives of that expert's work for the assurance professional's purposes; and
- (b) Evaluate the adequacy of that work for the assurance professional's purposes.

A46. Considering the areas of information systems and scientific expertise noted in paragraph A12 may assist the assurance professional in identifying the areas in which an understanding of the field of expertise of the assurance professional's expert is required.

Using the Work of a Management's Expert

A47. If information to be used as evidence has been prepared using the work of a management's expert, ISAE 3000 also includes a requirement for the assurance professional, to the extent necessary, having regard to the significance of that expert's work for the assurance professional's purposes, to:⁴²

- (a) Evaluate the competence, capabilities and objectivity of that expert;
- (b) Obtain an understanding of the work of that expert; and
- (c) Evaluate the appropriateness of that expert's work as evidence for the relevant assertion.

A48. A broad range of circumstances may threaten objectivity of a management's expert, for example, self-interest threats, advocacy threats, familiarity threats, self-review threats and intimidation threats. Safeguards may reduce such threats, and may be created either by external structures (for example, the management's expert's profession, legislation or

⁴¹ ISAE 3000, paragraphs xx-yy.

⁴² ISAE 3000, paragraph xx.

regulation), or by the management's expert's work environment (for example, quality control policies and procedures).

A49. Although safeguards cannot eliminate all threats to a management's expert's objectivity, threats such as intimidation threats may be of less significance to an expert engaged by the entity than to an expert employed by the entity, and the effectiveness of safeguards such as quality control policies and procedures may be greater. Because the threat to objectivity created by being an employee of the entity will always be present, an expert employed by the entity cannot ordinarily be regarded as being more likely to be objective than other employees of the entity.

A50. When evaluating the objectivity of an expert engaged by the entity, it may be relevant to discuss with the entity and that expert any interests and relationships that may create threats to the expert's objectivity, and any applicable safeguards, including any professional requirements that apply to the expert; and to evaluate whether the safeguards are adequate. Interests and relationships creating threats may include:

- Financial interests.
- Business and personal relationships.
- Provision of other services.

Other Information (Ref: Para. 14)

A51. A GHG statement may be published as a stand alone document, or with other information, for example, it may be included as part of an entity's annual report or sustainability report, or included with information such as that noted below. ISAE 3000 requires the assurance professional to perform specific procedures when the GHG statement is published with other information.⁴³ Other information may include:

- (a) A strategic analysis, including:
 - (i) A statement of the entity's position on climate change.
 - (ii) An explanation of all significant actions the entity is taking to maximize opportunities and minimize risks associated with climate change.
 - (iii) Emissions reduction targets and an analysis of performance against those targets.
 - (iv) A description of the entity's assessment of future movements in direct and indirect emissions for timescales over which the entity typically plans its strategies and assesses risks and opportunities, including detailed information on trends and factors likely to affect the assessment; and
 - (v) A description of corporate governance actions taken to address climate change.
- (b) Regulatory risks from climate change, including an analysis of the material legal and financial effects that current and prospective climate change-related regulation may have on the entity's business and operations.

⁴³ ISAE 3000, paragraph xx.

- (c) Physical risks from climate change, including a qualitative overview of the entity's current and potential material exposure to direct and indirect physical risks due to climate change.

A52. In some cases, the entity may publish emissions, removals or emissions deductions information that is calculated on a different basis from that used in preparing the GHG statement. For example, the other information may be prepared on a “like-for-like” basis whereby emissions are recalculated to omit the effect of non-recurring events, such as the commissioning of new plant or the closing down of a facility. The assurance professional may seek to have such information removed if the methods used to prepare it would be disallowed by the criteria used to prepare the GHG statement.

Forming the Assurance Conclusion (Ref: Para. 31)

A53. The preparation of the GHG statement by the entity requires the inclusion of an adequate description of the applicable criteria in the explanatory notes. That description is important because it advises intended users of the framework on which the GHG statement is based.

A54. A description that the GHG statement is prepared in accordance with particular criteria is appropriate only if the GHG statement complies with all the requirements of those criteria that are effective during the period covered by the GHG statement.

A55. A description of the applicable criteria that contains imprecise qualifying or limiting language (e.g., “the GHG statement is in substantial compliance with the requirements of XYZ”) is not an adequate description as it may mislead users of the GHG statement.

Assurance Report Content

Illustrative Assurance Report (Ref: Para. 32(a))

A56. Example wording of an assurance report on a GHG statement is included at Appendix 1.

Purchased Offsets (Ref: Para. 32(d))

A57. The wording of the statement to be included in the assurance report if the GHG statement includes emissions deductions can vary considerably depending on the circumstances. If the GHG statement includes an emissions deduction for offsets purchased during the period, the following example wording may be appropriate:

The GHG statement includes as a deduction from [*the entity*]'s emissions, the following offsets: [*identification of purchased offsets included in the GHG statement*]. We have checked that these offsets were purchased during the year, and that the description of them in the GHG statement is a reasonable summary of the purchase contracts and related documentation. We have not, however, performed any assurance procedures regarding the external providers of these offsets, and express no opinion about whether the claimed greenhouse gas reductions have been, or will be, achieved.

Limited Assurance Engagements

Engagement Acceptance and Continuance (Ref: Para. 34)

A58. The acceptance and continuance requirements with respect to a limited assurance engagement are identical to those for a reasonable assurance engagement. It is, therefore,

not appropriate to accept a limited assurance engagement in circumstances where a reasonable assurance engagement would not be accepted because, for example, the applicable criteria are not suitable, or the assurance professional doubts that sufficient appropriate evidence will be available because the entity's information system is immature. Similarly, if the assurance professional is aware of circumstances that would lead to a modified reasonable assurance report, those circumstances would also lead to a modified limited assurance report.

Internal Control (Ref: Para. 34(a)(i))

A59. ISAE 3000 requires the assurance professional to design and perform tests of controls if the assurance professional's assessment of risks of material misstatement at the assertion level includes an expectation that the controls are operating effectively (i.e., the assurance professional intends to rely on the operating effectiveness of controls in determining the nature, timing and extent of substantive procedures). It is not expected in a limited assurance engagement that the assurance professional's assessment of risks of material misstatement at the assertion level will include such an expectation; it is therefore not expected in a limited assurance engagement that the assurance professional will perform tests of controls.

Other Procedures (Ref: Para. 34(a))

A60. ISAE 3000 requires performance of "other procedures" if the assurance professional becomes aware of a matter that leads the assurance professional to question whether a material modification should be made to the GHG statement.⁴⁴ Such other procedures may include those mentioned in paragraph 34(a).

Illustrative Assurance Report (Ref: Para. 34(b))

A61 Example wording for an assurance report on a GHG statement is included at Appendix 2.

⁴⁴ ISAE 3000, paragraph 37.

Appendix 1

(Ref: Para. A56)

Example Assurance Report for a Reasonable Assurance Engagement

Independent Reasonable Assurance Report on ABC's Greenhouse Gas Statement

To: addressee

Section 1: Report on GHG statement (*this heading not needed if this is the only section*)

We have undertaken a reasonable assurance engagement of the accompanying GHG statement of ABC for the year to December 31, 20X1, which comprises the Statement of Emissions and Removals (and Emissions Deductions, where applicable) and the Explanatory Notes on pages xx – yy, including the summary of significant quantification and reporting policies in Note 1. The GHG statement includes xxx tonnes of CO_{2-e} attributable to Scope 3 emissions. These emissions were not included in our engagement.

[Include a paragraph regarding emissions reductions, under a separate heading if appropriate in the circumstances]

ABC's Responsibility for the GHG Statement

ABC is responsible for the preparation and fair presentation of the GHG statement in accordance with *[established criteria]*, applied as explained in Note 1 to the Statement of Emissions and Removals (and Emissions Deductions, where applicable). This responsibility includes the design, implementation and maintenance of internal control relevant to the preparation and fair presentation of a GHG statement that is free from material misstatement, whether due to fraud or error.

Independence and Quality Control

We have complied with the International Federation of Accountants' *Code of Ethics for Professional Accountants*, which includes comprehensive independence and other requirements founded on fundamental principles of integrity, objectivity, professional competence and due care, confidentiality and professional behavior.

We have complied with International Standard on Quality Control 1, which requires us to establish and maintain a comprehensive system of quality control including documented policies and procedures regarding compliance with ethical requirements, professional standards and applicable legal and regulatory requirements; and assignment to the engagement of individuals of integrity who have appropriate competence and capabilities.

Our Responsibilities

Our responsibility is to express an opinion on the GHG statement based on our assurance engagement. We conducted our reasonable assurance engagement in accordance with International Standard on Assurance Engagements 3410, "Assurance on a Greenhouse Gas Statement," issued by the International Auditing and Assurance Standards Board.

That standard requires that we plan and perform this engagement to obtain reasonable assurance about whether the GHG statement is free from material misstatement.

A reasonable assurance engagement with respect to a GHG statement involves performing procedures to obtain evidence about the quantification of emissions and removals (and emissions deductions, where applicable), and about the other information disclosed as part of the statement. The procedures selected depend on the assurance professional's judgment, including the assessment of the risks of material misstatement in the GHG statement, whether due to fraud or error. In making those risk assessments, we considered internal control relevant to the entity's preparation and fair presentation of the GHG statement in order to design assurance procedures that are appropriate in the circumstances. Our engagement also included:

- Assessing the suitability in the circumstances of the criteria used by ABC in preparing the GHG statement, in this case [*established criteria*], applied as explained in Note 1 to the Statement of Emissions and Removals (and Emissions Deductions, if applicable);
- Evaluating the appropriateness of quantification methods and reporting policies used and the reasonableness of necessary estimates made by ABC; and
- Evaluating the overall presentation of the GHG statement.

We believe that the evidence we have obtained is sufficient and appropriate to provide a basis for our opinion.

Unavoidable Uncertainty in the Quantification of Emissions and Removals (and Emissions Deductions, Where Applicable)

Greenhouse gas quantification is unavoidably subject to both scientific and estimation uncertainty. Scientific uncertainty arises because of incomplete scientific knowledge in the field of greenhouse gases. Estimation uncertainty can arise because of:

- The inherent uncertainty in quantifying inputs, such as activity data and emission factors, that are used by mathematical models to estimate emissions and removals (sometimes known as measurement, or parameter, uncertainty);
- The inability of such models to precisely characterize under all circumstances the relationships between various inputs and the resultant emissions and removals (sometimes known as calculation, or model, uncertainty); and
- The fact that uncertainty can increase as emission and removal quantities with different levels of measurement and calculation uncertainty are aggregated (sometimes known as propagation, or aggregation, uncertainty).

The effect of these unavoidable uncertainties, and the actions taken by ABC to reduce them as far as practicable, are explained in Note 2 to the GHG statement.

Conclusion

The GHG statement includes xxx tonnes of CO₂-e attributable to Scope 3 emissions (and emissions deductions, where applicable). These emissions were not included in our engagement and accordingly we express no opinion about them. In our opinion, the remainder of the GHG statement presents fairly, in all material respects, the greenhouse gas emissions and removals (and emissions deductions, where applicable) of ABC for the year to December 31, 20X1 in accordance with the [*applicable criteria*] applied as explained in Note 1 to the Statement of Emissions and Removals (and Emissions Deductions, where applicable).

Section 2: Report on Other Legal and Regulatory Requirements (applicable for some engagements only)

(Form and content of this section will vary depending on the nature of the assurance professional's other reporting responsibilities.)

[Assurance professional's signature]

[Date of the assurance professional's assurance report]

[Assurance professional's address]

Appendix 2

(Ref: Para. A61)

Example Assurance Report for a Limited Assurance Engagement

Independent Limited Assurance Report on ABC's Greenhouse Gas Statement

To: addressee

Section 1: Report on GHG statement (*this heading not needed if this is the only section*)

We have undertaken a limited assurance engagement of the accompanying GHG statement of ABC for the year to December 31, 20X1, which comprises the Statement of Emissions and Removals (and Emissions Deductions, where applicable) and the Explanatory Notes on pages xx – yy, including the summary of significant quantification and reporting policies in Note 1. The GHG statement includes xxx tonnes of CO_{2-e} attributable to Scope 3 emissions. These emissions were not included in our engagement.

[include a paragraph regarding emissions reductions, under a separate heading if appropriate in the circumstances]

ABC's Responsibility for the GHG Statement

ABC is responsible for the preparation and fair presentation of the GHG statement in accordance with *[established criteria]*, applied as explained in Note 1 to the Statement of Emissions and Removals (and Emissions Deductions, where applicable). This responsibility includes the design, implementation and maintenance of internal control relevant to the preparation and fair presentation of a GHG statement that is free from material misstatement, whether due to fraud or error.

Independence and Quality Control

We have complied with the International Federation of Accountants' *Code of Ethics for Professional Accountants*, which includes comprehensive independence and other requirements founded on fundamental principles of integrity, objectivity, professional competence and due care, confidentiality and professional behavior.

We have complied with International Standard on Quality Control 1, which requires us to establish and maintain a comprehensive system of quality control including documented policies and procedures regarding compliance with ethical requirements, professional standards and applicable legal and regulatory requirements; and assignment to the engagement of individuals of integrity who have appropriate competence and capabilities.

Our Responsibilities

Our responsibility is to express a limited assurance conclusion on the GHG statement based on our engagement. We conducted our limited assurance engagement in accordance with International Standard on Assurance Engagements 3410, "Assurance on a Greenhouse Gas Statement," issued by the International Auditing and Assurance Standards Board.

That standard requires that we plan and perform this engagement to obtain limited assurance about whether the GHG statement is free from material misstatement.

A limited assurance engagement with respect to a GHG statement consists of making inquiries, primarily of persons responsible for matters related to ABC's emissions and removals (and emissions deductions, where applicable), and applying analytical procedures. A limited assurance engagement is substantially less in scope than a reasonable assurance engagement and consequently does not enable us to obtain assurance that we would become aware of all significant matters that might be identified in a reasonable assurance engagement. Accordingly, we do not express a reasonable assurance opinion.

Unavoidable Uncertainty in the Quantification of Emissions and Removals (and Emissions Deductions, Where Applicable)

Greenhouse gas quantification is unavoidably subject to both scientific and estimation uncertainty. Scientific uncertainty arises because of incomplete scientific knowledge in the field of greenhouse gases. Estimation uncertainty can arise because of:

- The inherent uncertainty in quantifying inputs, such as activity data and emission factors, that are used by mathematical models to estimate emissions and removals (sometimes known as measurement, or parameter, uncertainty);
- The inability of such models to precisely characterize under all circumstances the relationships between various inputs and the resultant emissions and removals (sometimes known as calculation, or model, uncertainty); and
- The fact that uncertainty can increase as emission and removal quantities with different levels of measurement and calculation uncertainty are aggregated (sometimes known as propagation, or aggregation, uncertainty).

The effect of these unavoidable uncertainties, and the actions taken by ABC to reduce them as far as practicable, are explained in Note 2 to the GHG statement.

Limited Assurance Conclusion

The GHG statement includes xxx tonnes of CO_{2-e} attributable to Scope 3 emissions (and emissions deductions, where applicable). These emissions were not included in our engagement and accordingly we express no conclusion about them. Based on our limited assurance engagement, nothing has come to our attention that causes us to believe that the remainder of the GHG statement does not presents fairly, in all material respects, the greenhouse gas emissions and removals (and emissions deductions, where applicable) of ABC for the year to December 31, 20X1 in accordance with the *[applicable criteria]* applied as explained in Note 1 to the Statement of Emissions and Removals (and Emissions Deductions, where applicable).

Section 2: Report on Other Legal and Regulatory Requirements (applicable for some engagements only)

(Form and content of this section will vary depending on the nature of the assurance professional's other reporting responsibilities.)

[Assurance professional's signature]

[Date of the assurance professional's assurance report]

[Assurance professional's address]