

## Greenhouse Gas Protocol Standards Update Process

### Detailed Summary of Responses from Corporate Standard Stakeholder Survey (DRAFT)

December 2023

## Executive summary

**Background on the *Corporate Standard*:** The *Greenhouse Gas Protocol: A Corporate Accounting and Reporting Standard, Revised Edition* (“*Corporate Standard*”) published in 2004, provides requirements and guidance for companies and other organizations preparing a greenhouse gas (GHG) emissions inventory. It was designed with the following objectives in mind:

- To help companies prepare a GHG inventory that represents a true and fair account of their emissions through the use of standardized approaches and principles
- To simplify and reduce the costs of compiling a GHG inventory
- To provide business with information that can be used to build an effective strategy to manage and reduce GHG emissions
- To provide information that facilitates participation in voluntary and mandatory GHG programs
- To increase consistency and transparency in GHG accounting and reporting among various companies and GHG programs

**Updating the *Corporate Standard*:** The *Corporate Standard* was revised once (in 2004) after being first published in 2001. Since publication of the Revised Edition, the *Corporate Standard* has been used by thousands of organizations and there have been many important developments in GHG accounting and reporting. These include new regulations which mandate climate-related disclosures, a steep increase in the adoption of science-based and net-zero targets, and research on the use and impact of the guidance and standards. To ensure the GHG Protocol continues to effectively support and enable these developments, the GHG Protocol began a formalized process in 2022 to update the *Corporate Standard*. This process, the next steps of which are outlined below, is guided by the principle of providing robust GHG accounting standards and guidance for organizations to measure progress towards science-based, net-zero targets aligned with the global 1.5°C goal. In addition, a key goal of the update is to harmonize and align with accounting rules developed by major regulatory and voluntary disclosure and target-setting programs and initiatives.

**Corporate Standard Stakeholder Survey background:** The GHG Protocol Secretariat solicited written feedback on the *Corporate Standard* through an online survey between November 2022 and March 2023. This survey was one of four conducted to gather feedback on various options for updating or maintaining the current suite of GHG Protocol corporate standards and guidance. The Corporate Standard Stakeholder Survey received 375 responses in addition to over 40 detailed proposals from stakeholders explaining whether they wanted the standard changed and why. Survey respondents included companies, consultants, industry groups, non-governmental organizations, academia, and government institutions, among others.

**Corporate Standard Stakeholder Survey summary:** This summary report provides an overview of responses from all survey respondents and highlights common themes. This summary report will be used to inform further stakeholder discussions around key updates to the *Corporate Standard* and related GHG Protocol standards. Most survey respondents expressed satisfaction (somewhat satisfied or very satisfied) with the *Corporate Standard*. Further, most survey respondents expressed that minor updates were needed to the *Corporate Standard*. The following summarizes major feedback themes from the survey.

- **General feedback** related to the objectives and the accounting and reporting principles introduced in the *Corporate Standard* and alignment and interoperability with other standards and reporting programs
- Feedback on **organizational boundaries** and how organizations select an approach for consolidating GHG emissions
- Feedback on **operational boundaries** and how organizations identify emissions within its operations, categorize them as direct and indirect emissions, the scopes of indirect emissions included in the GHG inventory
- Feedback on **tracking emissions over time** and how organizations choose a base year, recalculate base year emissions and set a significance threshold for recalculation
- Feedback on **verification/assurance** and how organizations obtain a third-party assessment of the completeness and accuracy of reported GHG information and whether the information was prepared in accordance with the *Corporate Standard*
- **Miscellaneous feedback on data and reporting** considering data quality, calculation methodology, reporting and tools
- **Cross-cutting feedback on the GHG Protocol** related to the governance structure, including the standard development and update process and the GHG Protocol standard and guidance document structure.

**Next steps:** The GHG Protocol Secretariat encourages all interested stakeholders to read the full draft summary report. If you or your organization completed the survey and believe that the main feedback in your original response is not accurately reflected in the draft summary report, you are invited to provide feedback on this draft summary report [here](#) by January 24<sup>th</sup> 2024. This will help ensure that the GHG Protocol update process appropriately captures all major points raised in the stakeholder survey process. The GHG Protocol secretariat will then publish a final summary report shortly thereafter.

The summary report will support the development of specific workplans for *Corporate Standard* updates and related GHG Protocol standards, to be developed through Technical Working Groups and other committees as part of the standards development process. In addition, the GHG Protocol Secretariat will continue to solicit new information and review relevant new research studies related to the *Corporate Standard* as they become available throughout the update process.

The next phase of stakeholder engagement will center on evaluation of proposals including follow up discussions with submitters of proposals if needed to better understand proposed changes. The results of these sessions and this summary of survey responses will help inform the initial topics and deliberations for the Technical Working Groups.

The GHG Protocol's standards update process is open and transparent, and we encourage our stakeholders to engage in the process through our governing bodies. In November 2023, Greenhouse Gas Protocol [launched a new governance structure](#), which includes a Steering Committee, an Independent Standards Board and multiple Technical Working Groups. We are currently accepting applications for membership in our governing bodies. Applications are due January 15, 2024. More details about the different bodies and information on how to apply can be found [here](#). It is anticipated that the Technical Working Groups will be constituted by the end of Q1 2024, and the Independent Standards Board and the Steering Committee will be fully constituted by the end of Q2 2024. The final Corporate Standard and supporting documents are anticipated to be published by the end of 2025. If you'd like to receive email updates from GHG Protocol, we encourage you to [subscribe here](#).

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## Background

Since the publication of the [\*Greenhouse Gas \(GHG\) Protocol's Corporate Accounting and Reporting Standard, Revised Edition\*](#) ("*Corporate Standard*") in 2004, there have been many important developments in GHG accounting and reporting and GHG emission management. Among these are the trend toward science-based and net-zero targets, new regulations which mandate climate-related disclosures, use of the standards by thousands of companies, and academic research on their use and impact.

Between November 2022 and March 2023, GHG Protocol collected stakeholder input via four online surveys and an invitation to submit proposals related to the current standards. This feedback covered the GHG Protocol's *Corporate Standard, Scope 2 Guidance, Scope 3 Standard* and *Calculation Guidance* documents, and market-based accounting (including accounting for mitigation impacts, market-based methodologies, project-based accounting, etc.). The stakeholder feedback will inform the scope of the updates that GHG Protocol makes to its standards and guidance.

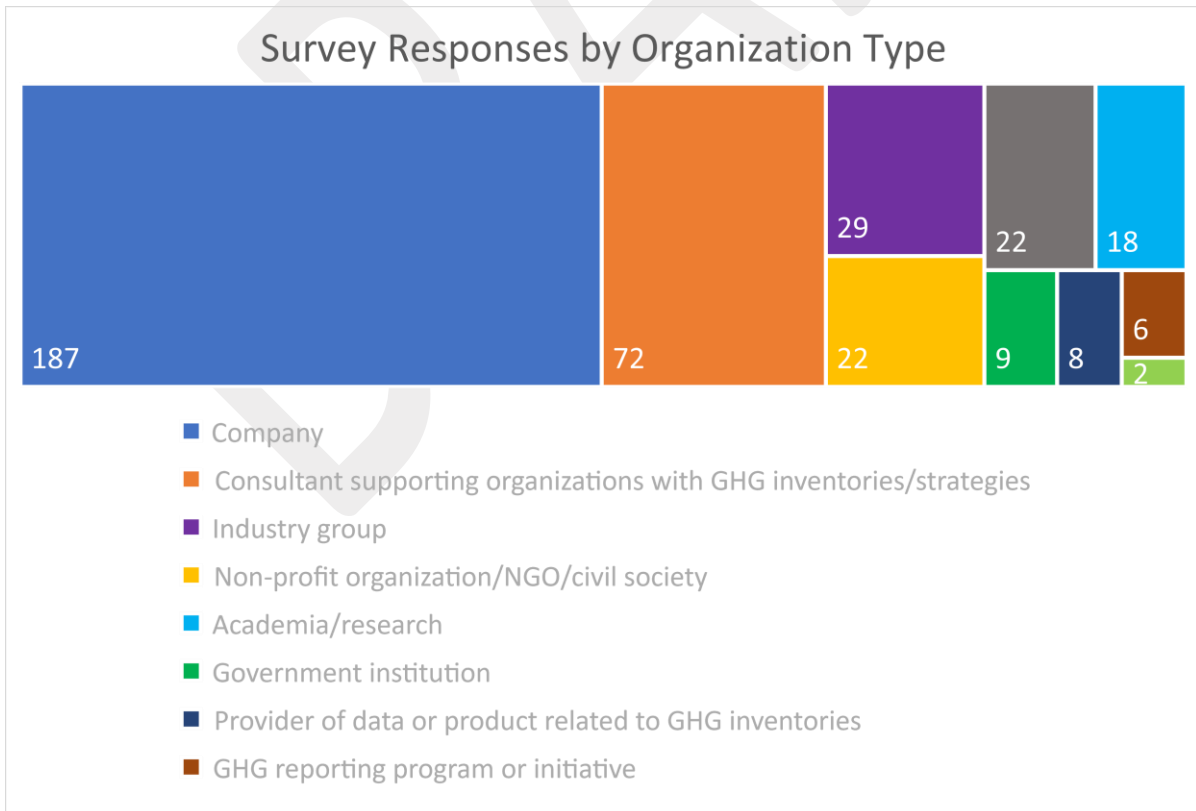
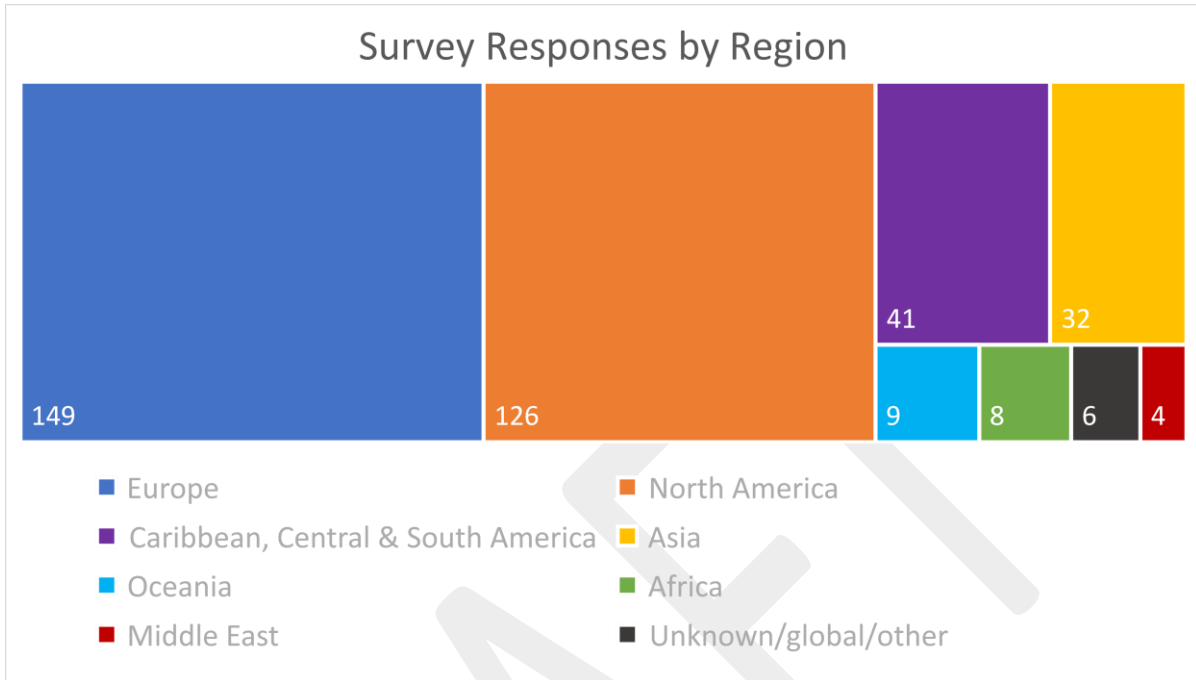
The aim of any updates will be to align with best practice approaches to ensure the GHG Protocol 'corporate suite' of standards and guidance for scope 1, scope 2 and scope 3 are effective in providing a rigorous and credible accounting foundation for organizations to measure, plan and track progress toward science-based and net-zero targets in line with the global 1.5°C goal. Any future updates will seek harmonization and alignment with accounting rules under development through major disclosure initiatives.

This report summarizes stakeholder feedback from the *Corporate Standard* Stakeholder Survey. The GHG Protocol Secretariat received 375 responses to the survey. Some the feedback received intersects with topics covered in the other three surveys, and well as with the *Land Sector and Removals Guidance* document currently under development. Some responses appeared to present a given organization's official position on topics covered, while others represented the opinions of individuals working within organizations.

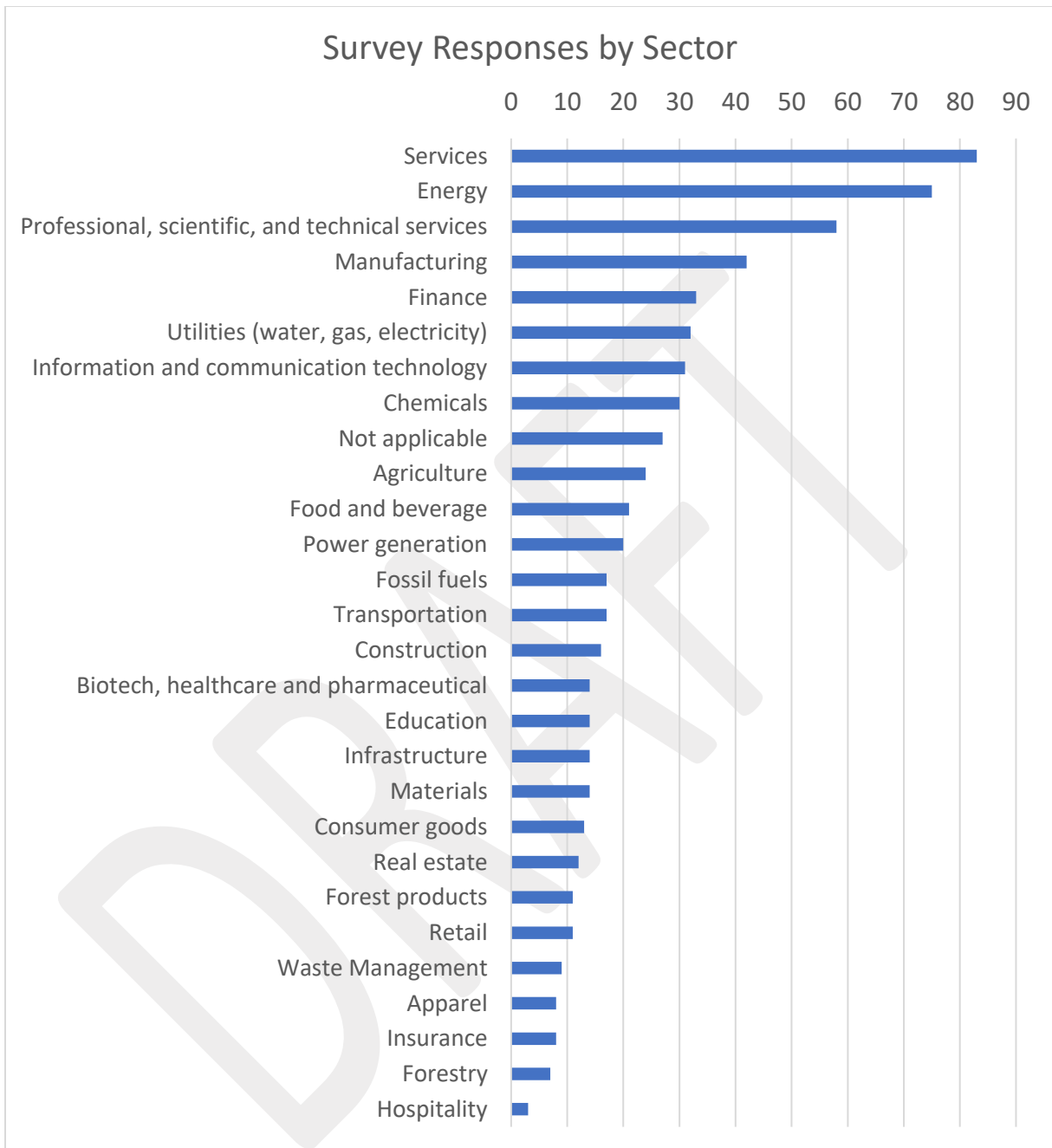
It was noted that most survey respondents expressed satisfaction (somewhat satisfied or very satisfied) with the *Corporate Standard*. Further, most survey respondents expressed that minor updates were needed to the *Corporate Standard*.

Responses detailed by respondent type are shown in the figures below. A voluntary sampling approach was used for the survey, meaning respondents self-selected for participation. It's therefore recognized that the responses provided may not comprehensively represent the broader landscape of potential feedback on the *Corporate Standard*. There are likely gaps in both geographical representation (with 75% of respondents from Europe and North America) and sectoral representation. In

addition, stakeholders submitted over 40 proposals related to the *Corporate Standard*. Proposals that opted for public attribution can be found [here](#).







*Note:* The Corporate Standard Stakeholder Survey allowed respondents to select multiple sectors, and therefore, the sum of selected sectors does not correspond with the total survey responses received.

In preparing this report, every effort was made to achieve completeness in reflecting the range of feedback provided and no major feedback received was intentionally omitted. Feedback is reported without any evaluation on the part of the GHG Protocol Secretariat and as such, none of the suggestions or recommendations included reflect in any way the opinion of the Secretariat. Some factual information regarding what is



currently included in the *Corporate Standard*, other GHG Protocol standards and guidance, and some external standards cited is provided in some instances for context.

Acknowledgement of feedback as summarized in this document does not guarantee that any ideas or recommendations proposed will be included in the scope of work for potential *Corporate Standard* updates. Prospective updates will be evaluated in line with the GHG Protocol mission, objectives and decision-making criteria (to be further developed in consultation with the Steering Committee and Independent Standards Board). These include the GHG Protocol accounting and reporting principles of accuracy, completeness, consistency, relevance and transparency; alignment with the latest climate science; supporting ambitious climate goals and actions in line with the global 1.5°C goal; and feasibility.

## A. General feedback

### A.1. Feedback on the objectives of the *Corporate Standard*

#### **Current objectives of the *Corporate Standard***

The introduction to the *Corporate Standard* introduces five objectives that the standard was designed to facilitate (quoted from page 3):

- “To help companies prepare a GHG inventory that represents a true and fair account of their emissions, through the use of standardized approaches and principles”
- “To simplify and reduce the costs of compiling a GHG inventory”
- “To provide business with information that can be used to build an effective strategy to manage and reduce GHG emissions”
- “To provide information that facilitates participation in voluntary and mandatory GHG programs”
- “To increase consistency and transparency in GHG accounting and reporting among various companies and GHG programs”

“Both business and other stakeholders benefit from converging on a common standard. For business, it reduces costs if their GHG inventory is capable of meeting different internal and external information requirements. For others, it improves the consistency, transparency, and understandability of reported information, making it easier to track and compare progress over time.”

#### **Stakeholder feedback on the objectives of the *Corporate Standard***

Some respondents suggested the *Corporate Standard* revisit its objectives and purpose, noting that emissions reporting has evolved substantially since the standard was most

recently updated in 2004. These respondents noted that not only is there increasing global urgency around greenhouse gas reductions, but greenhouse gas data is being used by a growing array of stakeholders to assess the contribution of individual companies to global warming and to measure their success in transitioning to lower carbon business models. Further, some respondents suggested that the increasing integration of sustainability information – including greenhouse gas emissions data – with financial information, as well as its increasing prominence, requires standards with enhanced rigor, flexibility and/or clarity. In consideration of these developments, some stakeholders suggested the GHG Protocol consider strategic, structural, and technical changes to maintain the quality and relevance of its guidance in light of its increasing importance to a broader group of stakeholders.

A stated objective of the *Corporate Standard* is “to help companies prepare a GHG inventory that represents a true and fair account of their emissions”; many respondents suggested advancing this objective further. These respondents often indicated that important elements of a true and fair representation include accuracy, credibility, and comparability of emissions. These respondents suggested accuracy to be considered an ongoing refinement process and the *Corporate Standard* should encourage and enable organizations to continuously improve the accuracy of their inventories over time. Further, these respondents suggested that more standardized metrics and measurement methodologies are critical to enable accurate and consistent inventories, thus improving credibility and comparability. Therefore, these respondents suggested the *Corporate Standard* objectives be updated to prioritize inventory accuracy and standardization of measurement.

Many respondents suggested the *Corporate Standard* revisit its objective and purpose to include conditions of comparability. Some suggested that doing so would better align with financial accounting standards. As greenhouse gas emissions reporting is increasingly being presented alongside financial information, and financial information oftentimes being used to compare organizations, respondents noted an existing need and expectation for greenhouse gas emission reporting to also be used for this purpose. Some respondents specifically highlighted the importance of comparability for an array of different stakeholder groups (e.g., investors, customers, employees, etc.) that rely on the *Corporate Standard* to compare the emissions profile across organizations. Other respondents suggested the *Corporate Standard* should reinforce that the standard is not currently designed for company-to-company comparison.

Some respondents suggested the *Corporate Standard* should focus on providing rules to account for GHG emissions only and should not replace the regulating role of governments. These respondents suggested that this will enhance the global comparability across companies while ensuring the *Corporate Standard* maintains utility even when local, regional, or global regulations/standards change.

Some respondents suggested the GHG Protocol revisit its objectives and purpose with more specific recognition of the needs of multiple stakeholders and without bias or tailoring for a particular user group. Some said that given continuous development in the emissions reporting environment, it is critical that GHG Protocol recognize that its standards are referenced by multiple constituencies beyond the scientific community, further supporting the need to prepare standards through a lens of stakeholder neutrality. These respondents suggested developing a statement of purpose reflective of a broader mission and expanded usage alongside financial reporting would ensure that the GHG Protocol remains relevant and flexible as reporting frameworks continue to evolve.

Some respondents noted that some users may assume/expect that the *Corporate Standard* is appropriate for multiple purposes that it may not be suitable for. These respondents suggested clarifying the appropriate purpose for which the *Corporate Standard* should be used, and to signpost users to other standards, methodologies, and guidance that are appropriate for other purposes. These respondents also suggested clarifying that the *Corporate Standard* is less appropriate or not sufficient by itself for identifying climate-related risks and opportunities or quantifying the consequences of interventions, including those aimed at reducing emissions.

## A.2. Feedback on the accounting and reporting principles of the *Corporate Standard*

### **Current accounting and reporting principles of the *Corporate Standard***

Chapter 1 of the *Corporate Standard* describes five principles intended to underpin all aspects of GHG accounting and reporting (paraphrased from page 7):

- **Relevance:** Ensure the GHG inventory appropriately reflects the company's GHG emissions and serves the needs of internal and external stakeholders
- **Completeness:** Account for and report on all GHG emissions sources and activities with the inventory boundary, disclosing and justifying any exclusions
- **Consistency:** Use consistent methodologies to facilitate meaningful comparisons of emissions over time and documenting methodological changes
- **Transparency:** Address all issues in a factual and coherent manner, based on a clear audit trail, disclosing relevant assumptions, and making appropriate reference to methodologies and data sources used
- **Accuracy:** Ensure that quantification of GHG emissions is not systematically over nor under actual emissions and that uncertainties are reduced as far as practicable

## **Stakeholder feedback on the accounting and reporting principles of the *Corporate Standard***

Some respondents suggested that the GHG Protocol should revisit the accounting and reporting principles based on the stated objectives. This will require revisiting the objectives of the *Corporate Standard* to understand both preparers' and users' needs to balance potential objectives such as (1) comparability between entities or (2) tracking an entity's GHG emissions over time. For example, when the *Corporate Standard* was issued, a primary objective was "to help companies prepare a GHG inventory that represents a true and fair account of their emissions, through the use of standardized approaches and principles". This objective may have resulted in entities having more options on how to account and report GHG emissions, which may impact the ability for users to compare GHG emissions across entities. Many respondents indicated there is increasing demand from stakeholders, including investors, for comparability across entities and expect this to continue as GHG reporting becomes mandatory in various jurisdictions. Those respondents suggested introducing a new principle of comparability, often indicating that increasing comparability would require limiting the optionality currently included in the standard.

Conversely, some respondents suggested that the GHG Protocol prioritize the use of the best available and most precise data across all scopes because that data best reflects the specific circumstances of an organization, which an inventory is designed to reflect. While this may not result in comparing inventories across organizations, these respondents suggested that prioritizing comparability while reporting using the lowest quality data will reduce the value of emission inventories in decision-making.

Some respondents suggested that "relevance" should be reconsidered as a principle for GHG accounting. They noted that it can be vague and many organizations take it to mean that they only need to report scope 3 categories that they choose to calculate and thus exclude many applicable categories. These respondents also noted that some organizations approach GHG quantification with a compliance mindset, and may default to a bare minimum approach to reporting. These respondents suggested that an update to the relevance principle is needed to address the variation in motivations among reporting organizations, noting that while organizations should be guided to include what is relevant, they should also be held accountable to quantifying critical activities for their sector in relation to their peers. Some respondents requested that the relevance principle be reworded so that it cannot be used as a justification for exclusion of material emissions categories or activities by organizations, and organizations need to quantify what is being deemed immaterial in the context of their inventory.

Some respondents suggested that the *Corporate Standard* introduce the principle of materiality. Some referred to the Science-Based Targets Initiative (SBTi) maximum threshold of 5% (used for setting scope 1 and 2 targets) for companies to exclude

immaterial emission sources in inventories when evaluating target coverage. These respondents indicated their belief that not all companies in all sectors should be responsible for completing all scopes and categories of emissions to the highest level of rigor if that scope/category is not a “material” category to the company’s overall GHG footprint. Further, these respondents suggested that not only do companies need and want more explicit direction for how to complete their GHG inventories, but that this lack of guidance around materiality also becomes an issue for verification and auditing purposes.

Some respondents suggested incorporating additional core principles, guiding principles, and due process procedures from the Financial Accounting Standards Board’s Generally Accepted Accounting Principles of the United States of America (U.S. GAAP) or the International Accounting Standards Board’s International Financial Reporting Standards (IFRS) to further standardize accounting and reporting practices and ensure equity for all sectors. For example, respondents noted core principles of U.S. GAAP include sincerity and prudence, which require accounting to be fact-based and unbiased and due process standards include encouraging broad public participation in the standards-setting process.

Some respondents suggested that the *Corporate Standard* introduce the principle of conservativeness, noting its inclusion in the draft *Land Sector and Removals Guidance* and suggestion that the *Corporate Standard* would also benefit from its inclusion.

### A.3. Feedback on referencing third-party standards

Some respondents noted that certain sectors are developing supplemental guidance outside of the GHG Protocol. Leveraging the work of other organizations may have been an effective strategy for the GHG Protocol as it sought to expand its available guidance. Ultimately, however, to be the premier standard setter for greenhouse gas emissions reporting, some respondents suggested the importance for GHG Protocol to control the development of its standards, thus avoiding potential bias that may be inherent in standards developed by industry groups or others interested in promulgating a specific viewpoint. These respondents suggested that ensuring all standards and guidance produced by the GHG Protocol, subject to its own due process, would ensure that its suite of standards are robust, independent, and fit for purpose across a broad spectrum of users.

### A.4. Feedback on alignment and interoperability

An overarching feedback theme from many respondents was for greater alignment and interoperability between GHG Protocol standards, voluntary climate reporting programs, and emerging mandatory climate disclosure regulations. This included feedback to eliminate inconsistencies between the GHG protocol standards and guidance documents themselves (e.g., the *Corporate Standard* states scope 3 disclosure is optional while the



*Scope 3 Standard* states scope 3 is required; the *Scope 2 Guidance* introduces a dual reporting approach and the concept of quality criteria; and the *Corporate Standard* references six greenhouse gases while the *Scope 2 Guidance* and *Scope 3 Standard* reference seven).

This also included suggestions for collaboration, harmonization and enabling interoperability with voluntary reporting and target setting programs, other third party-standards, and regulatory reporting programs. Programs cited by respondents included [CDP](#), [Global Reporting Initiative \(GRI\)](#), [Science-Based Targets Initiative \(SBTi\)](#), [Partnership for Carbon Accounting Financials \(PCAF\)](#), [International Organization for Standardization \(ISO\)](#), [United States Environmental Protection Agency \(US EPA\)](#), [International Sustainability Standards Board \(ISSB\)](#), [EU Corporate Sustainability Reporting Directive \(CSRD\)](#) and the Securities and Exchange Commission’s proposed rule: [The Enhancement and Standardization of Climate-Related Disclosures for Investors](#) (SEC’s Proposed Climate Rule). Respondents suggested that the *Corporate Standard* should have a primary responsibility to establish baseline expectations with respect to the identification and measurement of GHG emissions. There are, however, other aspects of reporting greenhouse gas emissions, including materiality, organizational boundaries, presentation (e.g., number of years to be presented, disaggregation of greenhouse gases, scopes to be presented), required disclosures, verification and attestation, and similar matters that may be dictated by other frameworks. For example, the regulatory reporting programs (ISSB, CSRD and the SEC’s Proposed Climate Rule) all reference the *Corporate Standard* in some manner for identification and measurement but provide their own guidance on other matters.

To be most useful to the widest range of preparers, standard setters, regulators, and other stakeholders, some respondents recommended that the *Corporate Standard* continue to structure guidance such that its identification and measurement considerations are foundational and applicable in both voluntary and mandatory GHG reporting schemes. These respondents suggested the identification and measurement foundation should be coupled with supplemental guidance that could be applied in the absence of requirements specified by a regulator or another standard setter. These “building blocks” should provide sufficient guidance to support consistent and high-quality disclosures for those not reporting under prescriptive frameworks. For example, respondents suggested the supplemental guidance would include information on the assessment of materiality and acceptable forms of attestation as well as requirements for organizational boundaries, presentation, and disclosure. This change in structure and approach would enhance the *Corporate Standard* interoperability with emerging required reporting frameworks, minimizing incremental costs and effort for preparers while continuing to provide sufficient guidance for voluntary reporters.

## B. Feedback on organizational boundaries

### B.1. Current organizational boundary requirements

Chapter 3 of the *Corporate Standard* (pages 17-18) requires companies to account for their consolidated GHG data according to either the equity share, operational control or financial control approaches.

- Under the equity share approach, a company accounts for GHG emissions from operations according to its share of equity in the operation.
- Under the control approaches, a company accounts for 100% of the GHG emissions from operations which it has control. Control can be defined in either financial control or operational control.
  - A company has financial control over the operation if the former has the ability to direct the financial and operating policies of the latter with a view to gaining economic benefits from its activities.
  - A company has operational control over an operation if the former or one of its subsidiaries has the full authority to introduce and implement its operating policies at the operation.

Based on the results of the *Corporate Standard* Stakeholder Survey, the majority of respondents whose organizations have a GHG inventory indicated that their organization utilizes the operational control approach (82%) to define organizational boundaries, followed by financial control approach (14%) and equity share approach (4%). As mentioned, these survey results should not be interpreted as being representative of all companies that report GHG emissions.

### B.2. Feedback in support of maintaining current organizational boundary requirements and guidance

There was a relatively even split among survey respondents who were in favor of revisiting current organizational boundary requirements and guidance in the *Corporate Standard* versus maintaining the current approach.

Respondents in support of maintaining current organizational boundary requirements often cited the need to maintain flexibility and to enable interoperability for voluntary and regulatory reporting usage. Some respondents also noted the added burden resulting from organizational boundary changes, noting that the adoption of a required approach and/or adjustment to existing approaches would potentially result in added time and resources for reconfiguration.



### B.3. Overview of feedback for revisiting organizational boundaries

Feedback in favor of revisiting current organizational boundary requirements and guidance was varied and included suggestions such as:

- Requiring one consolidation approach (operational control, financial control, equity share and/or a new approach aligned with financial accounting)
- Creating a new optional consolidation approach aligned with financial accounting
- Adjusting and/or clarifying existing consolidation approaches
- Developing more guidance, such as on how to apply the consolidation approaches and interactions with the handling of leased assets

### B.4. Feedback proposing to require one consolidation approach

Many respondents suggested an adjustment in the requirements from having three consolidation approaches to requiring a single consolidation approach. Among these respondents, feedback was mixed on which consolidation approach to require. Different respondents proposed requiring the operational control approach, the financial control approach, the equity share approach, or a new approach aligned with financial accounting.

Some respondents suggested that organizational boundaries are the first point of fracture among businesses influencing comparability. Some noted that the use of different approaches threatens the alignment in reporting with peers, as well as creates barriers to comparing the environmental performance of companies for various stakeholder groups (e.g., investors, procurement managers, employees, customers, management, etc.) looking to evaluate and reward strong climate action. Some respondents suggested that requiring one consolidation approach, at least at a sector level, would gain consistency in reporting and support wider aggregation possibilities. Further, some argued the current optionality allows for double counting across scopes 1 and 2.

#### **Requiring the operational control approach**

Respondents in favor of requiring the operational control approach often suggested that it was the approach most commonly used by organizations (noted both by organizations and by consultants on behalf of their clients). Thus, these respondents often suggested that requiring the operational control approach would minimize the burden on organizations needing to shift consolidation approaches back to a base year. Some respondents also noted that many entities have set climate goals and targets using operational control boundaries under the GHG Protocol, rather than financial control, equity share or consolidated financial statement boundaries.

### **Requiring the financial control and/or equity share approach**

Respondents in favor of requiring the financial control and/or equity share approaches often suggested this as a way to more closely align with consolidation methods established by financial accounting frameworks. Some respondents, however, suggested further changes needed to fully align with financial accounting frameworks (discussed in further detail below). Some also suggested that requiring financial control and/or equity share approaches would streamline reporting, provide clearer definitions of scopes and coverage, and could limit double counting of scopes 1 and 2 between different organizations. Further, some respondents suggested that financial control and/or equity share approaches better reflect reality for certain organizations (e.g., financial institutions, large multinational organizations with ownership stakes in many other organizations).

### **Requiring a new approach aligned with financial accounting**

Some respondents suggested requiring a single consolidation approach aligned with financial accounting (described further in section B.5). These respondents commonly noted that most of the mandatory reporting initiatives (e.g., SEC Proposed Climate Rule, CSRD, ISSB), in some manner, require that the organizational boundary consolidation approach for greenhouse gas emissions reporting be consistent with the that used in financial accounting. This feedback for alignment with the financial statements is consistent with the responses from survey respondents that suggest overall alignment between financial reporting and sustainability reporting, where possible, would provide more useful and actionable information. As such, some survey respondents recommended that the GHG Protocol eliminate the current options available for the determination of organizational boundaries, coalescing around a model consistent with financial reporting for consistent application and enhanced comparability.

### **B.5. Feedback proposing the creation of a new consolidation approach option aligned with financial accounting**

Some respondents suggested that consolidation approaches should be updated to better align with financial accounting. To achieve this, some recommended developing a new consolidation approach (described below), with some among these advocating for this to be a single required approach. Other respondents provided feedback on updating the existing approaches for improved alignment (outlined further in B.6).

Some respondents suggested creating a new optional consolidation approach aligned with financial accounting for consolidation and leased assets. The processes of consolidation under financial accounting demand that all entities follow a strict set of accounting rules. All public companies in the United States must report financials according to the standards set forth by U.S. GAAP. For international reporting,

companies must also work within the procedures set forth by IFRS. Both U.S. GAAP ([ASC 810](#) and [ASC 842](#)) and IFRS ([IFRS 10](#), [IFRS 11](#) and [IFRS 16](#)) have distinct guidelines for entities reporting consolidated financial statements with subsidiaries (e.g., declaring minority interests, eliminating intragroup transactions and balances, preparing financial statements the same way for parent and subsidiary companies, etc.) and accounting treatment for leases.

Some respondents noted the increasing demand from stakeholders for comparability across entities with the expectation for this to continue as GHG reporting becomes mandatory in various jurisdictions. However, respondents also highlighted that GHG reporting is not prevalent in all jurisdictions and may remain voluntary in many jurisdictions for an extended period of time. The flexibility and optionality currently provided may ease application for preparers and encourage voluntary reporting. These respondents argued that optionality may also provide standard setters and regulators the flexibility to mandate approaches or options that best reflect the needs of their jurisdiction. Therefore, some suggested that the GHG Protocol should carefully consider input from stakeholders to understand the trade-offs between the benefits of increased comparability and the costs of reduced optionality and work with financial reporting standard setters and regulators to establish a balanced approach to the determination of organizational boundaries.

Some respondents noted that the determination of which entities should be included in a company's consolidated financial statements is based on a significant volume of generally accepted accounting principles that have developed over decades of standard setting. These respondents also noted that investors understand the concept of consolidated financial statements and rely on the knowledge that the primary information reported in the statements is prepared on the same basis, for the same group of entities. Therefore, they suggested that the general alignment of regulatory reporting requirements with the financial reporting guidance is reflective of the current direction of sustainability reporting. Additional benefits of alignment suggested by these respondents included:

- Ability to leverage the years of effort devoted to developing the current financial accounting consolidation models, allowing the *Corporate Standard* to focus on other pressing emissions reporting issues
- Ability to analyze GHG emissions data in the context of information from financial reporting (i.e., GHG intensity calculation using financial reporting metrics) which is currently required in some voluntary and regulatory reporting programs
- Ability to leverage existing ERP/consolidation/accounting systems, controls and entity hierarchy to gather activity data more efficiently and at a lower cost

## B.6. Feedback proposing to adjust existing consolidation approaches

### **Adjusting control approaches**

Some respondents suggested the *Corporate Standard* should clarify what is meant by operational control and add specific indicators to enable consistent application of this concept in practice. Some respondents recommended that the indicators of operational control should enable consistent application for complex ownership structures, veto rights, and general or limited partners. Some respondents recommended that the *Corporate Standard* add definitions of operational control for different types of assets (e.g., leases, licenses, franchises). Some respondents suggested the GHG Protocol consider if entities should disclose their judgments related to determining their organizational boundary in order to provide more transparency.

Some respondents recommended developing enhanced standards and guidance with sufficient flexibility to address the range of control situations. For example, some of these respondents suggested reconsidering guidance on multi-party arrangements – moving beyond a singular factor such as the party that operates the facility – so that the resulting reporting better reflects the party with the ability to influence decisions impacting emissions over time.

Some respondents also highlighted the diversity in practice when entities use the financial control method to set organizational boundaries. For example, in a leased asset scenario where the landlord owns the building and leases space to tenants, the landlord has financial control over the building, but the tenants may have financial control over the daily operations and utilities. Therefore, they suggested that more guidance is needed to improve consistency of the approach to determination of financial control in such cases and the treatment of utilities for both the lessor and lessees.

Lastly, some respondents suggested adjusting the definition of control to align with the party responsible for paying utility invoices, arguing this would create a driver for establishing energy efficiency and reducing GHG emissions.

### **Adjusting control and equity share approaches to align with financial reporting**

It was noted by many respondents that the terminology used in the *Corporate Standard* was outdated compared to terminology used for financial accounting under IFRS and U.S. GAAP. Some respondents suggested aligning or mapping to terminology used in financial accounting, to the extent possible, to help drive consistent and comparable reporting. Common examples provided included:

- U.S. GAAP uses terminology for consolidation of joint venture models such as Variable Interest Entities (VIEs) under Financial Accounting Standards Board's

ASC 810. Under U.S. GAAP, an entity first assesses whether a joint venture is a VIE to apply the consolidation model in ASC 810.

- Nuances under U.S. GAAP for a jointly controlled entity and whether it primarily conducts its operations through a legal entity.
- Under IFRS 11, a joint arrangement consists of an arrangement in which two or more parties have joint control (decisions about relevant activities require the unanimous consent of the parties that collectively control the arrangement).
- IFRS 11 establishes two types of joint arrangements: joint operations and joint ventures. A joint venture requires the use of a separate legal entity and the parties have rights to the net assets of the arrangement.

Some respondents suggested updating the text in Chapter 3 of the *Corporate Standard* to more clearly reflect financial statement accounting terminology, such as equity method investments and joint ventures. These respondents noted the text and related tables currently use the terms, “associated companies”, “non-incorporated joint venture”, “incorporated joint venture”, and “wholly owned and joint operations”; these terms do not exist within U.S. GAAP or IFRS accounting standards.

These respondents noted that while U.S. GAAP and IFRS are not always fully aligned across some of the relevant concepts, to the extent that the *Corporate Standard* refers to concepts that are used in these widely applied accounting frameworks, the *Corporate Standard* should use the same terminology and in the same manner as they are used in accounting frameworks in order to facilitate consistent application, avoid confusion and improve connectivity of reporting on financial and non-financial aspects of performance.

Some respondents also recommend including a more detailed and consistent definition of financial control to be used throughout the *Corporate Standard* to facilitate more consistent outcomes in application. These respondents often suggested revisiting the definition of financial control, noting inconsistencies within the standard and references different accounting concepts (control, risks and rewards, substance) oftentimes leading to different conclusions on whether financial control exists.

### **Expanding current consolidation approaches**

Additionally, some respondents suggested adjusting approaches to be more inclusive. These respondents suggested updating consolidation approaches to also consider where else the business “appears” in the public domain. For example, some referenced how a brand may license or have joint ventures that would not be within boundaries of equity share/control approaches alone, but a customer or end customer would not understand the boundaries when they see the company’s name on a product or service.

### **Allowing for a transition period**

Lastly, in the event that the existing approaches are adjusted, respondents recommended that the *Corporate Standard* consider allowing for one year of “clean-up”, or transition period, especially now where there will be support from forthcoming mandatory reporting legislation, which most often requires some level of verification or assurance. During this period, respondents suggested that organizations restate their historical amounts reported and their targets, while citing the *Corporate Standard* update process.

## B.7. Feedback requesting additional guidance

Many respondents suggested providing more guidance, including:

- Guidance related to leased asset classification. Some respondents suggested providing additional guidance, case studies and/or examples related to complex lease structures, ownership structures, and/or unique acquisitions/divestitures
- Guidance on how to evaluate different approaches when determining a consolidation approach for an organization’s inventory
- Providing updated examples including:
  - For specific sectors such as financial institutions, real estate investment trusts (REITs), vehicle rental companies, cellular network providers, IT software providers, utilities, oil and gas, mining
  - For specific use-cases such as investment funds, private equity, real estate owners, property managers, utilities with complex structures (e.g., generation, transmission, distribution, and customer end-use all within one company), long term power purchase agreements (with a variety of financing situations), transmission and distribution line losses (with various ownership models), electric storage (with various configurations), electric vehicles, electric vehicle charging (e.g., at home, at work, in a charging network), rental vehicles, arrangements for company vehicles (e.g., company provided fuel coupons), shared data centers, business travel for the national branch of an international organization, owned landfill sites with contractually sold methane, purchased steam or compressed air

## C. Feedback on operational boundaries

### C.1. Current operational boundary requirements

After an organization sets its organizational boundaries, it then sets its operational boundaries. This involves identifying emissions sources associated with its operations,



categorizing them as direct or indirect emissions, and choosing the types of direct and indirect emissions included in the GHG inventory.

Chapter 4 of the *Corporate Standard* defines three scopes for GHG accounting and reporting purposes:

- Scope 1 emissions which are the direct emissions from sources that are owned or controlled by the organization, including emissions from stationary combustion, from mobile combustion, from physical or chemical processing, and fugitive emissions
- Scope 2 emissions which are emissions from the generation of purchased energy consumed by the organization
- Scope 3 emissions which are all other indirect emissions that occur in the value chain of the organization, including both upstream and downstream emissions

Page 25 of the *Corporate Standard* states that “companies shall separately account and report on scopes 1 and 2 at a minimum”. Scope 3 emissions reporting is optional under the *Corporate Standard* but required under the *Scope 3 Standard*.

## C.2. Feedback to maintain the current approach to operational boundaries

Survey respondents expressed varied opinions on whether operational boundaries should be revisited in the *Corporate Standard*.

Respondents in favor of maintaining the current approach to operational boundaries often referenced the need to:

- Maintain flexibility for organizations
- Limit the burden on organizations
- Avoid having to establish new base year emissions
- Lower barriers to entry for organizations that are just getting started

## C.3. Overview of feedback for revisiting operational boundaries

Feedback proposing revisiting current requirements and guidance related to operational boundaries was diverse and covered suggestions such as:

- Aligning across standards and guidance, both internal and external to GHG Protocol
- Providing more clarity on inventory completeness, materiality and exclusions
- Requiring scope 3 emissions reporting under the *Corporate Standard*



- Providing further specificity on the treatment of avoided emissions, carbon removals, CO<sub>2</sub> emissions from the combustion of biofuels, use of market mechanisms, and climate impacts of land use changes in defining operational boundaries
- Providing more guidance, such as how to apply operational boundaries for different sectors and use cases and interactions with the handling of leased assets

Some of the items noted above intersect with areas for GHG Protocol updates addressed in other stakeholder surveys (e.g., Scope 3 Survey, Market Based Accounting Approaches Survey). They are addressed here vis-à-vis feedback regarding the *Corporate Standard*, but additional feedback in these areas can be found in summary reports for these surveys. Some issues are also addressed by the *Land Sector and Removals Guidance* currently under development by the GHG Protocol.

#### C.4. Feedback requesting alignment across standards and guidance

Some respondents indicated a need to better align requirements and terminology used for setting operational boundaries between different GHG Protocol standards and guidance documents (*Corporate Standard, Scope 3 Standard, Scope 2 Guidance, Land Sector and Removals Guidance*). This includes more explicitly addressing the optionality of scope 3 reporting in the *Corporate Standard* and acknowledging the difference between the *Corporate Standard* and *Scope 3 Standard* if optionality is maintained with upcoming revisions. For example, clarity is needed on how the term 'scope 3 activities', which is used in the *Corporate Standard*, relates to the scope 3 categories in the *Scope 3 Standard*.

Some respondents also suggested working together with other standard setters (ex. ISO, ISSB) to better facilitate common definitions used for operational boundaries. Better alignment with [ISO 14064-1](#), most recently updated in 2018, was specifically cited.

Some respondents suggested reframing the definition of operational boundaries in the *Corporate Standard*, by adopting the approach used by ISO, by using the EU's organization environmental footprint (OEF) method, or by shifting away from operational boundaries as a concept and defining inventory boundaries based entirely on financial rules.

#### C.5. Feedback requesting clarity on inventory completeness, materiality, and exclusions

Some respondents suggested updating the description of the completeness principle in the *Corporate Standard* to remove language implicitly allowing for exclusions so that companies cannot intentionally omit emissions sources. Some respondents noted that

with more companies committing to net-zero emissions targets, companies that under report emissions may be at a financial advantage by minimizing residual emissions to be neutralized. By tightening up on allowances for exclusions, these respondents recognized a need to allow for estimates.

Other respondents called for the addition of more prescriptive language to the *Corporate Standard* on how entities should evaluate acceptable exclusions to comply with the completeness principle. Some suggested including “shall” and “should” statements to ensure more consistent application of the completeness principle. Some respondents also suggested defining more specific materiality criteria and thresholds for completeness (ex. 95% of emissions for a given scope). Some of these respondents argued that better defined requirements would help facilitate comparability between different companies’ inventories. Some respondents requested more detailed guidance and illustrative examples for considering exclusions, including on how to estimate the scale of potential exclusions. Annex H of ISO 14064-1 was identified as a potential resource for developing criteria for evaluating the significance of emissions sources (particularly under scope 3).

### C.6. Feedback proposing to require scope 3 emissions reporting under the *Corporate Standard*

Many respondents were in favor of revisiting the operational boundary requirements to require scope 3 emissions reporting under the *Corporate Standard*. Suggested variations of a requirement to report scope 3 emissions included:

- Requiring scope 3 for all categories by all organizations
- Requiring scope 3 for relevant and/or significant categories
- Requiring scope 3 if it reflects a material fraction of total GHG inventory (scope 1, scope 2, and scope 3) emissions (e.g., greater than 40%)
- Requiring scope 3 if the reporting company is a large organization (e.g., based on revenue, turnover, purchasing volume, number of employees), or carving out exceptions for small organizations
- Requiring scope 3 or selected scope 3 categories for specific sectors (e.g., higher emitting sectors)
- Allowing a phased-in approach for scope 3 (required 1-3 years after reporting scope 1 and 2 or reported as soon as ‘practical’, or with expanded inclusion of scope 3 emissions sources over time)

Respondents in favor of requiring scope 3 emissions reporting often cited the urgent need to raise ambition. They noted that scope 3 is now widely understood to account for the majority of GHG inventory emissions that most companies have influence over

across their value chains that and managing these emissions is a necessity rather than an optional consideration. Many initiatives, pledges and commitments require organizations to cover all scopes including scope 3.

Additionally, some respondents highlighted that the text “Companies may want to focus on accounting for and reporting those activities that are relevant to their business goals, and for which they have reliable information” (page 29 of the *Corporate Standard*) can be misleading and may contribute to organizations calculating scope 3 categories that are easy but make a small proportion of their footprint (e.g., business travel).

Considering the complexity of scope 3 reporting, some respondents called for more specificity in defining boundaries. More prescriptive boundary requirements would help facilitate comparability between reporting companies and would serve to avoid situations where companies focus on scope 3 categories that are relatively minor parts of their portfolio. Some respondents recommended establishing not only lower bounds (or minimum requirements) but also upper bounds on what must be reported. One approach cited would be to require companies to only report emissions attributable to tier 1 suppliers or direct customers rather than accounting further up or down the value chain. Arguments for limiting the scope in this way included ensuring comparability between organizations, prioritizing higher quality data, managing the effort and cost involved, and focusing on areas where reporting companies have the greatest ability to influence emissions reductions. Some respondents recommended specific materiality thresholds for scope 3 reporting, ranging from 80 to 95% of a company’s scope 3 footprint. Others recommended establishing the materiality of scope 3 emissions sources on a sectoral basis, similar to what the Sustainability Accounting Standards Board (SASB) has done for wider sustainability reporting and potentially following the sector classifications used by SBTi.

The range of recommendations for defining either narrower or broader scope 3 boundaries also highlighted the tension between the accounting principles of completeness and accuracy. Some respondents prioritized completeness, arguing for flexibility in using secondary data sources and estimation methods to paint the fullest possible picture of emissions across a company’s value chain. Others, in calling for narrower bounds, questioned the utility of assessments based on secondary data and estimates to help facilitate decision-making as these approaches would be limited in enabling organizations to track changes in emissions over time. At the respective ends of the spectrum there were also varying viewpoints regarding whether double counting of scope 3 emissions sources among related entities is an issue to be concerned with.

A final area to note regarding scope 3 reporting requirements is a suggestion that some emissions sources currently classified as scope 3 should be reclassified as scope 1 or 2. Instances where this was cited relate to building operations and to transportation. Some respondents recommended that all energy use in buildings a company is using be

reported as scope 1 or 2 regardless of whether the emissions source would fall in or outside of the organizational boundary under a given consolidation approach. Related, some respondents proposed that energy emissions from teleworking be counted as scope 2. Similar to purchased heat, steam and cooling, there was a recommendation to classify emissions from the production of purchased compressed air as scope 2. Citing market shifts with more transportation services being outsourced, some respondents recommended that all transportation emissions be reported together, or at least that scope 3 transportation emissions be a reporting requirement. Some respondents suggested that retailing activities be more explicitly included in scope 3, potentially renaming Category 9 as “downstream transportation and retailing”. Finally, some respondents noted challenges in delineating scope 1 and scope 3 transportation emissions when well-to-wheel emissions factors are used.

### C.7. Feedback requesting additional operational boundary considerations

Some respondents suggested that avoided emissions and/or carbon removals be elevated to the same level as the emissions scopes in defining operational boundaries. Some respondents argued that operational boundary definitions be revisited to help incentivize the adoption of emerging decarbonization technologies like carbon capture, utilization and storage (CCUS) and alternative fuels like hydrogen and biomethane. Some respondents requested guidance for the application of market-based accounting for alternative fuels, such as the use of biomethane certificates. Other respondents cautioned against the inclusion of market-based instruments, citing the practice of companies using unbundled EACs to show reductions in scope 2 emissions. Others noted the potential for misinterpretation of text included in various parts of the *Corporate Standard* regarding offsets and suggested removing or revising this text to guard against companies including offsets in their inventory boundaries. (Note: a separate survey on the market-based accounting was also conducted and feedback on market-based approaches included here is based only on responses to the *Corporate Standard* survey.)

Some respondents highlighted limitations that they perceived in current operational boundary definitions in requiring consideration of the full spectrum of climate impacts for companies in or related to the forestry, agriculture and land sectors. Some suggested that accounting for emissions due to land use changes should be required. (Note: The *Land Sector and Removals Guidance* is currently under development by the GHG Protocol.)

Some respondents noted the potential that organizations may use administrative/contractual techniques to shift emissions into different scopes. A company with on-site fossil fuel generation may, through a third party, shift the emissions from that on-site generation from scope 1 into scope 2. Companies then often argue that they should be able to decarbonize those scope 2 emissions through

unbundled EAC purchases (while continuing to burn fossil fuels on site). Respondents suggested some cautions be written into the *Corporate Standard* around these types of practices.

Other considerations for the revisiting of operational boundary requirements cited include:

- Some respondents proposed that the current approach of accounting for CO<sub>2</sub> emissions from the combustion of biofuels separately from the scopes should be revisited.
- Some respondents suggested reconsidering requirements regarding GHGs not covered by the UNFCCC and whether they should be a reporting requirement and their emissions aggregated with those from GHGs covered by the UNFCCC.
- Some respondents suggested revising guidance to include black carbon.

## C.8. Feedback requesting additional guidance

### Scope 3

Respondents often noted that while organizations are permitted to report scope 3 GHG emissions under the *Corporate Standard* or under the *Scope 3 Standard*, the *Corporate Standard* is unclear as to what would constitute complete disclosure for scope 3 GHG emissions. Some respondents stated that there are differences among reporters of GHG emissions in their approach to inclusion of all or some scope 3 categories, and/or the inclusion of limited activities within a scope 3 category, including when scope 3 GHG emissions are optionally disclosed under the *Corporate Standard*. Some respondents recommended providing clarity on whether, when reporting scope 3 GHG emissions optionally under the *Corporate Standard*, an entity is required to report an entire scope 3 category, or if it is permitted to report only selected activities within a respective scope 3 category.

### Leased assets

Regarding leased assets, feedback from some respondents indicated the guidance on multi-tenant buildings and co-locations within the *Corporate Standard* is unclear or contradictory. Firstly, some respondents noted the definition of “operate the building” is unclear: for example, it is unclear whether the analysis differs if the tenant has thermostat control, chooses their own operating hours, or receives a separate bill from the landlord for utilities. Further, some respondents requested additional clarity regarding how the treatment of energy generation facilities may differ or be the same under operational or financial control approaches by the landlord or the tenant.

Some respondents recommended that the *Corporate Standard* consider providing further guidance and examples related to scenarios in which a tenant can demonstrate



they do not have control. Secondly, some respondents requested additional clarity regarding colocations and which entity (co-location vendor or client) should report scope 2 GHG emissions and any associated renewable energy purchases. For example, in a co-located data center, co-location clients may have operational control over their equipment and the associated energy usage, while the vendor may have control over lighting and cooling systems. It was suggested that the GHG Protocol aligns the *Scope 2 Guidance* and the *Corporate Standard* interpretations related to “operational control”. Additionally, if utilities are paid by the lessor and reimbursed by the lessee, some respondents suggested that it is unclear how to classify GHG emissions under the financial control model (e.g., triple net leases and utilities that are directly metered). Some respondents recommended the GHG Protocol consider the lessee practical expedients available under accounting standards that allow to combine the lease and non-lease components for financial reporting purposes and determine how the *Corporate Standard* should apply to GHG emissions in such cases.

In the case of leased assets, some respondents also suggested providing additional guidance to clarify the application of having authority to introduce and implement operating policies. For example:

- If the tenants operate the site on behalf of another party (their customers or vendors) but have the authority to implement operating policies, would there be any consideration around emission allocation?
- If the tenants operate the site for their revenue-generating activities following the landlord operating policy and have no/little authority to influence the operating policy, would this still be considered as operational control?

In addition, some respondents recommended that the *Corporate Standard* use IFRS Accounting Standards and U.S. GAAP definitions for financing and operating leases. Some respondents suggested that the GHG Protocol consider working with financial reporting standard setters and regulators to establish a balanced approach to treatment of GHG emissions from leased assets.

### **Sector and use case-specific guidance**

Some respondents highlighted the need for more sector-specific guidance in defining operational boundaries along with updated examples, including:

- Financial services and accounting for emissions across investment portfolios
- Agriculture, forestry, and land sectors and accounting of emissions related to land use changes
- Oil and gas, specifically in the case of service of charter contracts

- Aviation, and responsibility for the combustion of fuels that pass through airports but are used by airlines
- Accounting for downstream scope 3 emissions for B2B companies who produce intermediate products that may go to a variety of end uses
- Sectors that don't produce physical products and where the interests and responsibilities of different actors might overlap, such as sports and entertainment (teams/bands, venues, concessionaires, media)
- Electric vehicles and electric vehicle charging

### Additional guidance

Respondents also suggested providing more guidance, including:

- A need for more detailed scope 1 guidance analogous to what's been published for scope 2 and scope 3
- Guidance for reporting emissions from different GHGs, including GHGs not covered by the UNFCCC in instances where emissions factors are not disaggregated and the materiality of SF<sub>6</sub> and NF<sub>3</sub> which are not relevant to all industries
- Guidance related to leased asset classification of direct and indirect emissions for:
  - Lessee and lessor relationships
  - Franchisee and franchisor relationships
  - Licensee and licensor relationships
  - Fuel and energy related activities

## D. Feedback on tracking emissions over time

### D.1. Current requirements on tracking emissions over time

Chapter 5 of the *Corporate Standard*, "Tracking Emissions Over Time" introduces the following concepts and requirements:

- Setting a base year, which is a year chosen as a meaningful and consistent reference point for the comparison of emissions over time. It is often used as a basis for setting and tracking progress towards a target
- Recalculating base year emissions due to structural changes, changes in methodology, improvements in data or discovery of errors



- Defining significance thresholds, defined by the organization, which are used to assess triggers for a base year recalculation

The approach to tracking emissions over time described in the *Corporate Standard* is designed to enable consistent performance tracking over time and facilitate accounting for changes of emissions to the atmosphere vs. apparent changes due to methodological changes or structural changes.

## D.2. Feedback to maintain the current approach to tracking emissions over time

Opinions of survey respondents on whether to revisit *Corporate Standard* requirements and guidance on tracking emissions over time were mixed.

Respondents in support of maintaining the requirements in the *Corporate Standard* chapter 5 often referenced the value of the current approach, the need for organizations to have flexibility in establishing a base year, materiality thresholds and criteria, and recalculation policies. Some also noted that the current approach serves the purpose of tracking changes in emissions to the atmosphere over time, emphasizing the criticality of establishing and recalculating base year emissions.

## D.3 Overview of feedback on tracking emissions over time

Feedback in favor of revisiting the current approach in the *Corporate Standard* ranged from requests for guidance and minor changes to better align with the growing target setting landscape to proposing complementary or alternative approaches for tracking their emissions over time. Feedback proposing revisiting the current approach to tracking emissions over time included suggestions such as:

- Consideration of and potential alignment with target setting frameworks developed since the most recent publication of the *Corporate Standard* like SBTi
- Criteria and guidance for selection of a base year
- Significance thresholds and materiality criteria triggering a recalculation of base year emissions
- Guidance and considerations for the process of recalculating and reporting base year emissions
- Proposed complementary and alternative approaches to the base year comparison approach to tracking emissions over time
- Other areas where additional guidance was requested

## D.4. Feedback requesting alignment with target-setting frameworks

Since the last publication of the *Corporate Standard*, there has been considerable momentum with companies committing to ambitious emissions reduction targets and a corresponding development of standards and guidance via SBTi. SBTi has increased demand for guidance on base year recalculation, related to target monitoring, reporting and verification. Numerous respondents made reference to SBTi. Some of these suggested better aligning with SBTi in areas including base year selection and defining materiality thresholds, discussed further below. Related, some respondents urged to have this portion of the *Corporate Standard* updated in close consultation with SBTi. Others recommended keeping language in the *Corporate Standard* at a high level while referring to SBTi for further guidance. Others thought that guidelines for tracking emissions over time would be more appropriately placed in target setting standards than GHG accounting standards and proposed that the GHG Protocol defer to SBTi for defining standards and guidance in this domain. Others requested documentation to provide more clarity regarding the overlap and differences between GHG Protocol and SBTi.

Some respondents also cited potential alignment other standards documents in relation to tracking emissions over time including [PAS 2060 – Carbon Neutrality Standard and Certification from the British Standards Institution \(BSI\)](#) and the [European Sustainability Reporting Standards \(ESRS\) E1 – Climate Change](#).

## D.5. Feedback on base year selection

### **Current *Corporate Standard* requirements**

Page 36 of the *Corporate Standard* provides guidance for selecting a base year, stating that “companies should choose a base year as the earliest relevant point in time for which they have reliable data” and noting that some organizations have adopted 1990 as a base year to be consistent with the Kyoto Protocol.

### **Stakeholder feedback**

Many respondents highlighted diversity in practice when an organization selects multiple base years across scope 1, 2 and 3 emissions for tracking emissions over time. While the GHG Protocol *Scope 3 Standard* defines how an entity should select a base year in relation to their scope 3 GHG emissions (Section 9.1, page 100), the same clarity is not provided in the *Corporate Standard*. For example, some respondents pointed out that in the *Corporate Standard*, there is no guidance on whether a scope 3 base year should be consistent with the base year set for scope 1 and scope 2 GHG emissions. If optional scope 3 reporting continues to be allowed in the *Corporate Standard*, some respondents recommended clarifying what requirements are relevant to the scope 3 optional reporting, including when a base year is required, whether the selected base year can

be different from scope 1 and scope 2, and whether it can be different for each scope 3 category.

Some respondents suggested revising *Corporate Standard's* reference to 1990 as an example base year (page 36). 2015 was frequently proposed by these respondents as the earliest allowable base year (e.g., per SBTi), to be consistent with the Paris Agreement and facilitate sufficient forward-looking ambition. Some respondents recommended that *Corporate Standard* provide guidance regarding the earliest allowable base year. Some respondents also suggested the GHG Protocol consider more clearly defining “reliable data” in regard to its use in identifying a base year as “the earliest relevant point in time for which they have reliable data” (*Corporate Standard* page 36).

Additionally, some respondents noted that the steep drop in emissions caused by COVID-19 in a number of sectors (e.g. aviation) presents issues with the use of 2020 and/or 2021 as a sensible base year. Organizations that use average emissions over several consecutive years in place of a single base year could also see their inventories skewed if those consecutive years include 2020 and/or 2021. Some respondents called for the updated *Corporate Standard* to provide additional guidance to companies on how to deal with these anomalous years when selecting a base year.

Lastly, some respondents noted that the *Corporate Standard* does not provide guidance or acknowledge that base years may need to be re-established if an organization reaches its goals relative to its original base year. Respondents recommended including guidance for re-establishing a base year and adding disclosure requirements for this scenario.

## D.6. Feedback on significance threshold and materiality

### **Current *Corporate Standard* requirements**

Page 35 of the *Corporate Standard* states that “companies shall develop a base year recalculation policy” and “if applicable” state any “significance threshold” for triggering a base year recalculation. A “significance threshold” is a “qualitative and/or quantitative criterion used to define any significant change to the data, inventory, boundary, methods, or any other relevant factors”. Companies are required to determine and disclose “significance thresholds” for triggering base year recalculations. Page 37 further states that the *Corporate Standard* “makes no specific recommendations as to what constitutes ‘significant’”, but notes that some GHG programs may establish quantitative numerical thresholds. Chapter 10 of the *Corporate Standard* introduces the related concept of materiality in the context of verification and assurance, wherein “information is considered to be material if, by its inclusion or exclusion, it can be seen to influence any decisions or actions taken by users of it” and cites 5% as a “rule of thumb” materiality threshold (pages 69-70).

## Stakeholder feedback

Some respondents suggested removing the words "if applicable" regarding the establishment of a significance threshold as they believe that all entities should be required to do so as part of their policy to facilitate consistency. Some respondents suggested the *Corporate Standard* consider adding more specific disclosure requirements with respect to an entity's "significance threshold" as they believe it is unclear, as currently written, if the GHG Protocol requires disclosures for either or both quantitative and qualitative thresholds.

Many respondents requested more clarity on each type of situation in which the base year may be subject to recalculation under the *Corporate Standard*. More clarity was also requested regarding the frequency an organization should review for base year emissions changes (and to clarify if different for types of changes), including consideration of cumulative changes (and whether the same significance threshold applies).

Some respondents suggested that the *Corporate Standard* be more prescriptive in defining a numerical significance threshold to drive a more consistent recalculation approach among companies. Among these, some called for following SBTi defining a 5% threshold with a fixed timeframe of 5 years for review as SBTi does for targets. Others advocated for requiring more frequent review (every year).

Some respondents recommended providing/updating examples of qualitative and quantitative thresholds. Some respondents suggested that the GHG Protocol consider clarifying how materiality thresholds and significance thresholds should complement or affect one another, with some suggesting the *Corporate Standard* set threshold requirements. Respondents suggested that the *Corporate Standard* should include updated examples illustrating a quantitative significance threshold and whether a range could be appropriate as a significance threshold. Some respondents also recommended that the *Corporate Standard* provide further guidance on how items below the significance threshold should be aggregated for the purposes of assessing errors, data improvements, and structural changes. For example, data may have changed below the significance threshold, but over time, the aggregation of the change over time may be greater than a significance threshold.

Some respondents recommended reconsidering the significance threshold examples provided, citing a wide-ranging diversity in practice (2% to 10%). Some noted that they consider current guidance to be vague and that it could be better tied to a preparer's materiality overall. In the context of climate-related disclosure requirements that will be based on connectivity to the financial statements, some respondents suggested that examples of how to consider these significance thresholds for nonfinancial GHG emissions information would be helpful. Some recommended collaboration with the

ISSB, SEC and CSRD on the topic of significance thresholds and materiality for GHG emissions.

For qualitative thresholds, some respondents suggested that the GHG Protocol consider adding examples of what is meant by qualitative thresholds. Some also suggested explaining what may warrant a GHG emissions recalculation even if not quantitatively significant (greater than threshold). Additionally, some suggested it would be useful to provide guidance on how to treat a data change that is quantitatively significant but is not qualitatively significant.

When applying the significance threshold for base year recalculation, some respondents requested clarity on whether the threshold is applied to scopes 1 and 2 individually or in total, and how scope 3 is considered by category.

Some respondents requested more guidance and examples be provided related to the different drivers that may prompt a base year recalculation, including structural changes, data or methodological improvements, and discovery of error. More guidance was requested regarding what constitutes a structural change and situations like partial acquisitions/divestments, use of special purpose vehicles (SPVs), tolling models, and outsourcing of processes. For data and methodological improvements, some respondents suggested more prescriptive guidelines for triggering base year emissions recalculations across organizations. For example, requiring a recalculation with the release of a new IPCC Assessment Report and corresponding update to global warming potentials (GWPs) to stay up-to-date with the science and facilitate comparability between reporting organizations.

## D.7. Feedback on base year recalculation

### **Current *Corporate Standard* requirements**

Chapter 5 of the *Corporate Standard* establishes requirements for the recalculation of base year emissions, stating “base year emissions shall be retroactively recalculated to reflect changes in the company that would otherwise compromise the consistency and relevance of the reported GHG emissions information” (page 35). Cases that “shall trigger recalculation of base year emissions” include the following given that there has been a “significant impact” on the reporting company’s base year emissions (page 35):

- Structural changes involving “the transfer of ownership or control of emissions-generating activities operations from one company to another” including mergers, acquisitions, divestments, and outsourcing or insourcing of emitting activities
- Changes or improvements in calculation methodology or emissions factors or activity data



- Discovery or significant errors or cumulatively significant errors

Chapter 5 also specifies optional reporting for base year recalculations including “recalculated GHG emissions for all years between the base year and reporting year” and “all actual emissions as reported in respective years in the past” (page 38).

Finally, Chapter 5 provides guidance on the timing of recalculations, noting that “when structural changes occur during the middle of the year, the base year emissions should be recalculated for the entire year”, that “current year emissions should be recalculated for the entire year to maintain consistency with the base year recalculation”, and that “if it is not possible to make a recalculation in the year of the structural change (due to lack of data for an acquired company), the recalculation may be accrued out in the following year” (pages 37-38).

### **Stakeholder feedback**

Some respondents suggested the *Corporate Standard* consider addressing how to recalculate the base year when an acquisition occurs, and base year data is unavailable, noting that the current framing around the timing of base year calculation would allow entities to report unavailable data in a subsequent year. These respondents suggested that the GHG Protocol should clarify the circumstances when an entity may be able to claim that “it is not possible to make a recalculation” particularly in view of the potential requirement for entities to have this information assured. This will avoid the need for a difficult judgment to be exercised both by the preparer and the assurance provider whether the recalculation in the following year is an error.

Some respondents also suggested revisiting the GHG Protocol’s concept of “emissions profile over time”. Some suggested that the base year recalculation requirement should apply to all years presented in the GHG statement, and not just the base year, for progress tracking purposes. Some suggested that GHG Protocol consider stating explicitly which years should be disclosed in order to increase consistency and comparability. Some also recommended adding additional guidance on performance tracking against a target by clarifying what an entity should report as part of its performance each year.

Some respondents also recommended adjusting the base year recalculation requirement to align with the rules for financial reporting. Companies typically only change previous years’ reporting when significant mistakes (or fraud) are discovered or when calculation methods are changed. Under financial reporting, companies cannot change previous years’ reporting for changes in estimates. For example, changes in evaluation of the remaining useful life of an asset will not change the depreciation in previous years – only forward, as the depreciation method is the same, it is only the evaluation of asset lifetime that has changed. Similarly, some respondents suggested changes in emission estimates be applied prospectively.

Some respondents suggested that there be more specific disclosure requirements related to base year emissions recalculations, particularly regarding the reasons prompting recalculation. In some instances, respondents noted that updates to base year emissions due to structural changes versus methodological changes and errors should be reported separately to distinguish between changes in the emissions profile of the organization versus improvements in measurement.

#### D.8. Feedback proposing additional or alternative methods for tracking performance

Some respondents provided broad feedback on the overall approach described in the *Corporate Standard* entailing a base year emissions benchmark that requires recalculation with structural or methodological changes. This feedback ranged from highlighting challenges and limitations with implementing the approach to calls for greater flexibility and allowances for alternative or complementary approaches to tracking emissions over time.

A key practical challenge commonly raised was around developing an accurate representation of base year emissions for acquired assets or entities where records of emissions activities are either limited or non-existent. Some respondents requested further guidance on acceptable approaches for estimating base year emissions for acquired assets in the absence of primary data. Some respondents pointed to potential credibility issues with base year recalculations based on incomplete data and estimates. Others noted comparability challenges wherein emissions calculation methods and available data are improving, and these are not feasible to incorporate into base year emissions recalculations. The cost and level of effort associated with retrospective recalculations was also cited as a potential issue, noting that target setting and mitigation action should be forward-looking. Some respondents posed the question of whether base year emissions will have to be re-audited every time they are recalculated, again citing cost concerns. Some respondents also noted the potential for established targets and mitigation strategies to be disrupted with base year recalculations. Finally, some respondents noted potential misalignment between the approach and financial accounting principles and/or reporting frameworks where retrospective recalculation of baseline figures is not incorporated. Those respondents suggested a general update to reflect the latest financial accounting standards since the *Corporate Standard* was published.

Some respondents requested flexibility in the approach and advocated for the incorporation of performance-based reporting or emissions intensity metrics into how emissions are tracked over time. Some called for flexibility in approaches to serve the needs of different companies (either tracking against a base year or using performance metrics per a company's needs), while others viewed these as complementary approaches to be used in tandem. Some of these respondents requested additional



guidance on the development of performance metrics or suggested a standardization of performance metrics by sector.

Among other issues referenced, some consumers of emissions data noted that their primary concern is a company's risk exposure at a given point time and that the recalculation of base year emissions may complicate this. With companies increasingly committing to net-zero emissions targets (a target defined by a fixed amount of emissions at specified point time), targets are not always anchored to a base year. Some respondents noted this as a reason to make the establishment and recalculation of base year emissions optional.

Some respondents suggested differentiating between short-term and long-term climate impacts in tracking emissions over time. Some also noted that not only annual, but also cumulative emissions and removals from an established reference point be tracked over time. Finally, some respondents requested that tracking of avoided emissions over time be included.

## D.9. Feedback requesting additional guidance

Respondents also requested additional guidance related to:

- Year chosen as a base year, changing a base year, and whether different base years can be used for different emissions scopes
- More guidance on application of a recalculation, whether that recalculation applies to all scopes and/or all categories
- For structural changes or acquisitions, more guidance on how to recalculate a base year if historical information is not available for the newly acquired entity
- Requests for more guidance related to instances where multiple items below the significance threshold aggregate to a significant amount over time
- Guidance around emission factor changes, global warming potential value updates and data quality changes that may have a significant impact on the inventory and trigger a base year recalculation
- Guidance considering the current state of scope 3 accounting wherein companies are replacing spend with primary data methods
- Adding guidance related to subsidiaries tracking emissions over time (base year selection, significance threshold, recalculation) and how this should interact with the parent company
- Managing instances where emissions move from one scope to another as part of base year recalculation process

- Guidance for companies who acquire/divest from assets on a continuous basis (such as buying/selling of real estate assets) and when these should be considered as bought/sold goods versus structural changes, along with further guidance on capital goods considering emissions are not amortized
- Tracking value chain emissions over time considering that different value chain partners will be recalculating their base year emissions at different times
- Guidance (including quantitative and qualitative considerations) on how to assess errors to determine whether a material misstatement has occurred

## E. Feedback on verification and assurance

### E.1. Current guidance on verification and assurance

Verification (or assurance) is an objective assessment of the accuracy and completeness of reported GHG information and the conformity of this information prepared in accordance with the GHG Protocol *Corporate Standard*.

While the *Corporate Standard* does not currently require any form of verification or assurance, Chapter 10 provides guidance on the topic.

### E.2. Feedback in support of the current approach to verification and assurance

Similar to in the case of other topics covered, survey respondents expressed varying opinions on whether to maintain the current approach to verification and assurance in the *Corporate Standard* as opposed to revisiting it.

Respondents in favor of maintaining the current verification/assurance guidance within the *Corporate Standard* often suggested that regulatory organizations are already implementing assurance requirements, and that standard setting be deferred to these bodies. These respondents suggested that these bodies will have specific requirements, and that there is a risk of causing confusion by instituting stricter requirements; therefore, if the *Corporate Standard* were to implement a verification or assurance requirement, it could also be an added burden on organizations and a higher barrier to entry, particularly to SMEs or to companies beginning their reporting journey. Related, these respondents suggested that stricter verification or assurance requirements may disincentivize some companies from adopting the *Corporate Standard*. Some respondents also cited limited capacity on the part of service providers in keeping up with the increased demand for assurance. Some also noted that the resources allocated to verification could be better allocated toward decarbonization efforts.

### E.3 Overview of feedback on verification and assurance

Survey respondents in favor of revisiting the topic often recommended the adoption of some level of verification or assurance requirement in the *Corporate Standard*. Many respondents also requested clarifications to strengthen the existing chapter or further guidance on the topic.

### E.4. Feedback proposing to require verification/assurance

Respondents in favor of revisiting this topic often suggested some form of requirement for verification or assurance:

- Requiring it over all scopes or just scope 1 and 2, or with varying requirements for scopes 1 and 2 versus scope 3 and across scope 3 categories
- Requiring verification or limited assurance and/or reasonable assurance
- Requiring verification or assurance annually, or every other year, or every three years
- Requiring verification or assurance for larger organizations, organizations above a specified emissions threshold, or in specific sectors
- A tiered approach with different verification or assurance requirements for companies of different sizes or sectors, or which may feed into quality certifications
- Utilizing a phased-in approach

Reasons cited for adopting a verification and assurance requirement in the *Corporate Standard* included:

- Better transparency, comparability, and confidence in data included in reports prepared in line with the *Corporate Standard*
- An increase in scope 3 emissions reporting and the need for high-quality data from suppliers
- Observed shortcomings and inconsistencies of current assurance processes in facilitating inventories of sufficient quality
- Keeping up with the trend in mandatory reporting requirements and positioning the GHG Protocol to better prepare companies for external audits
- Elevating the GHG Protocol to also serve as a verification standard
- Whereas many companies may be increasingly subject to verification and assurance requirements as part of compliance programs, establishing a standard

and guidance on the topic can also serve as a resource to companies not subject to any regulatory programs.

Some respondents suggested that a verification and assurance standard and guidance document be published separately from the *Corporate Standard*, noting that organizations providing verification and assurance services would represent a different audience to reporting organizations. In this instance, guidance on internal controls and preparing for external verification may remain in the *Corporate Standard*.

### E.5. Feedback requesting updates and clarifications

Some respondents provided suggestions for updating the current guidance to provide clearer definitions or specifications including:

- Clearer distinctions between verification and assurance, and between internal controls versus external processes
- More detailed descriptions on what different levels of assurance (e.g., limited, reasonable) represent and detailing the related procedures to be performed by an assurance provider
- More clarity around the concept of materiality and materiality thresholds
- Updates to consider verification or assurance parameters for scope 3 emissions (e.g., materiality thresholds), with some noting that scope 3 reporting may not incorporate audit quality data
- More clarity on principles and parameters for internal quality control and verification or assurance
- How and when historical data should be re-assured when there are historical recalculations (i.e. due to structural or methodological changes)

Some respondents also recommended revisiting this topic to focus on providing organizations with guidance related to data credibility (including sufficient and appropriate supporting documentation) and establishing a strong internal control environment in order to prepare for external assurance (instead of focusing the section on the external assurance principles themselves). Furthermore, assurance standards have been developed since the *Corporate Standard* was first released and the GHG Protocol may reference those instead of detailing what a verifier or assurance provider should do. Some examples respondents suggested not including in the GHG Protocol and are better left to verification or assurance standards included:

- Removing the 'rule of thumb' materiality threshold of 5% for the work performed by the assurance provider (page 70 of the *Corporate Standard*). Some respondents noted that materiality within an assurance engagement is defined

by the assurance provider of the engagement, taking into account many factors. Some respondents suggested that there may be some confusion in the interpretation of this statement as it is often taken as the basis for applying a threshold of 5% for the materiality of exclusions from the inventory boundary. The *Corporate Standard* does not give a threshold of exclusions. In fact, its completeness principle states that in order to conclude an exception is below a materiality threshold, the emissions would have to be quantified and should therefore be reported and not excluded. Respondents proposed that it would be beneficial to reinforce that this is not a threshold of exclusions, and that companies should include 100% of calculated/estimated emissions in their inventory as per the completeness principle.

- The *Corporate Standard* states that verifiers may need to visit a number of sites and that site visits should be representative of the organization as a whole (page 71). Some respondents expressed that in a limited assurance engagement, the sites do not necessarily need to be representative of the organization as a whole. Site visits are normally used to gain an understanding of the GHG reporting process on a site level and as a response to any identified risks.

Some respondents also recommended updating guidance on this topic to include the so-called “three lines of defense model”, where an organization would determine its need for external assurance after having implemented this model with clear roles for data gathering (line 1), internal control measures (line 2), and, optionally, internal audit (line 3).

Lastly, in response to data quality challenges, some respondents suggested the *Corporate Standard* be updated to indicate that reporting of Scope 3 emissions should not require the development of audit-quality data.

## E.6. Feedback requesting additional guidance

Many respondents also noted that entities are increasingly seeking external assurance over their GHG emissions information to enhance confidence and trust in reported information. Some jurisdictions are introducing mandatory assurance of GHG emissions information. This reinforces the importance of the GHG Protocol’s work to ensure that the GHG Protocol standards are developed with the characteristics of suitable criteria.

These respondents suggested providing more guidance related to:

- The appropriate verification or assurance standards, such as the American Institute of Certified Public Accountants (AICPA) attestation standards, the International Standard on Assurance Engagements (ISAE), IAASB standards and ISO standards. Specific standards often cited included AICPA [SSAE No. 18 Attestation Standards](#), [ISAE 3410: Assurance engagements on greenhouse gas](#)

[statements](#), IAASB exposure draft [ISSA 5000 General Requirements for Sustainability Assurance Engagements](#) and ISO [14064-3: Specification with guidance for the verification and validation of greenhouse gas statements](#).

- Guidance on how verification and assurance align with regulatory requirements such as from the SEC in the US, CSRD in the EU, and FSA in Japan.
- The qualifications for an appropriate third-party verifier or assurance provider including if they need to be a professional auditor and if they need to be independent.
- How organizations can prepare in advance of obtaining third-party verification or assurance and guidelines for process documentation.

Some respondents suggested that organizations should obtain third-party verification or assurance from professional auditors that are independent of the organization. In these instances, respondents suggested the *Corporate Standard* provide more guidance on determining independence or refer to existing assurance standards for guidance on this topic.

Some respondents suggested the GHG Protocol consider establishing a best practice criteria or program with certification for verifying or assuring GHG reporting. Others noted existing programs and standards for verification and assurance providers.

## F. Feedback on data and reporting

Many respondents requested updated and expanded clarifications and new guidance on how to perform emission calculation steps in a variety of circumstances. Feedback was also provided with suggestions related to emerging technologies, types of data, and other topics. This feedback often coincided with feedback on the reporting requirements of the *Corporate Standard* and requests for additional tools and resources.

### F.1. Feedback on data quality and calculation methodology

#### **Current *Corporate Standard* guidance on data quality and calculation methodology**

Chapter 6 of the *Corporate Standard* provides guidance for the identification of GHG emissions sources and calculation of emissions once the inventory boundary has been established. The chapter details the following steps for calculating emissions:

1. **Identification of GHG emissions sources** (page 41) with reference to scope 1 sources (stationary combustion, mobile combustion, process emissions and fugitive emissions), scope 2 sources (“from the consumption of purchased electricity, heat, or steam”) and scope 3 sources (“from a company’s upstream



and downstream activities as well as emissions associated with outsourced/contract manufacturing, leases, or franchises not included in scope 1 or scope 2)

2. **Selection of a GHG emissions calculation approach** (page 42), describing the range of calculation methods available from direct monitoring to the “most common approach” of applying documented emission factors and specifying that “companies should use the most accurate calculation approach available to them and that is appropriate for their reporting context”
3. **Collection of activity data and selection of emission factors** (page 42), mentioning generalized sources of activity data (ex. “purchased quantities of commercial fuels” for scope 1, metered electricity consumption for scope 2) and noting that “in most cases, if source- or facility-specific emission factors are available, they are preferable to more generic or general emission factors”
4. **Application of calculation tools** (pages 42-45), referencing cross-sector and sector-specific calculation tools provided on the GHG Protocol website
5. **Rolling-up of GHG emissions to corporate level** (pages 45-47), describing both centralized and decentralized approaches for rolling emissions data and calculations from individual facilities to the corporate level

Chapter 7 of the *Corporate Standard* provides guidance on managing inventory quality for putting into practice the accounting and reporting principles of relevance, completeness, consistency, transparency and accuracy. The guidance provided recognizes that “companies have different reasons for managing the quality of their GHG emissions inventory” and that “a company’s goals for and vision of the evolution of the GHG emissions issue should guide the design of its corporate inventory, the implementation of a quality management system, and treatment of uncertainty within its inventory” (page 48). Chapter 7 describes components of an inventory quality management system covering inventory components including methods, data, inventory processes and systems (institutional, managerial and technical procedures) and documentation (of methods, data processes, systems, assumptions and estimates).

### **Feedback on data quality and uncertainty**

Some respondents requested that the *Corporate Standard* be updated to provide additional requirements and/or guidance related to data quality and uncertainty including:

- Adding data quality requirements and more guidance related to the types of source data and the use of actual data versus proxy data for estimates. This included length of time for using estimates and frequency for revisiting assumptions within estimates.



- Providing more specificity on a hierarchy of data quality (for example a preference for operational versus procurement data or actual versus average emission factors).
- Adapting guidance in the *Scope 3 Standard* on data quality (found in Section 7.3) to the *Corporate Standard*.
- Consideration of adopting a ranking scale similar to that used by PCAF to evaluate data quality.
- Providing more guidance on defining uncertainty and developing uncertainty estimates. Some respondents specifically noted the challenge that uncertainty values are often not reported for published emission factors.
- Establishing disclosure requirements related to data quality and uncertainty such as reporting the proportion of emissions obtained from actual versus estimated data.

### **Feedback on emission factors**

Some respondents requested additional resources and guidance related to the selection of appropriate emission factors including:

- Suggesting that the GHG Protocol maintain a consolidated database of emission factors that's annually updated and global in scope, helping to better promote consistency in emission factors used for greater comparability across entities. Some respondents noted that a consolidated emission factor database may be developed and maintained in coordination with other actors to encourage alignment.
- Pointing to examples of recognized emission factor sources, such as the [US EPA](#), [UK Department of Food and Rural Affairs \(UK Defra\)](#), and the [International Energy Agency \(IEA\)](#).
- Providing further guidance around evaluating the quality and relevance of emission factors and evaluating their uncertainty. Some respondents recommended establishing guidelines for weighing criteria for the selection of appropriate emission factors, such as geographic relevance, time relevance, or technology relevance. Some respondents suggested further clarity be provided around using the most up-to-date emission factors or matching the years of emission factors with reporting year. Some respondents recommended adding clarity on the requirements on updating emission factors, as available. Some respondents noted a need for clarification on the use of region-specific emission factors beyond the case of purchased electricity as established in the *Scope 2 Guidance*, such as for scope 1 combustion emissions.



- Development of guidance regarding custom or internally developed emission factors, including tracking and reporting requirements.
- Establishing a requirement that emission factors used and their sources be disclosed.

### **Current *Corporate Standard* guidance on global warming potential values**

Current *Corporate Standard* requirements related to global warming potential (GWP) values can be found in the [Required Greenhouse Gases in Inventories: Accounting and Reporting Standard Amendment](#). These include the requirement that companies “shall use 100-year GWP values from the IPCC”, “should use GWP values from the most recent Assessment Report”, and “should use the same GWPs for the current inventory period and the base year” (page 1). Page 6 further states that the requirement to use Intergovernmental Panel on Climate Change (IPCC) GWP values is aimed at ensuring that “corporate practices are based on the best available scientific evidence” and “consistency between national and corporate reporting practices”. The *Scope 3 Standard* also describes requirements for GWP values, stating that companies should use 100-year GWP values from the IPCC and that “companies may either use the IPCC GWP values agreed to by the United Nations Framework Convention on Climate Change (UNFCCC) or the most recent GWP values published by the IPCC”.

### **Feedback on GWP values**

Some respondents requested further clarification and guidance related to GWP values including:

- Clarifying which IPCC Assessment Report (IPCC AR) should be utilized for GWP values. Some respondents recommend that the GHG Protocol consider more explicitly requiring that the GWP values from the most recent IPCC AR be used to recognize and use the most-recently published values without having point to a specific IPCC AR. Some respondents recommended that guidance on GWPs be made consistent across the *Corporate Standard* and *Scope 3 Standard*. Under the UNFCCC national inventory reporting guidance, countries are currently using IPCC AR4 100-year GWP values but have plans to mandate the use of IPCC AR5 100-year GWP in 2024. There may be a potential for confusion regarding the discrepancy between following the UNFCCC guidance versus using GWPs from the most recent IPCC AR. Some respondents also suggested adding clarity around which IPCC AR entities should use for GWP values to ensure comparability and ways that historical years can be recalculated using GWPs from a more recent IPCC AR to ensure target tracking.
- Some respondents suggested the GHG Protocol should consider adding clarity around use of GWPs for refrigerants that are not covered by the UNFCCC.

Examples of such guidance already exist and can be built upon (e.g., in the U.S. entities tend to refer to California Air Resource Board source on refrigerant GWPs).

Some respondents suggested revisiting the 100-year GWP (GWP100) as sole required metric, particularly as it relates to methane and other short-lived GHGs, and to consider support of a 20-year GWP (GWP20). Respondents advocating for incorporating GWP20 as a metric highlighted the heightened influence of methane over a shorter time horizon along with the imperative for climate action in the near-term. Among these respondents, some recommended dual reporting of emissions using GWP100 and GWP20 respectively while others suggested replacing GWP100 with GWP20 for purposes of reporting non-CO<sub>2</sub> GHG emissions as a CO<sub>2</sub> equivalent.

### **Feedback on calculation methodology**

Respondent feedback related to guidance on calculation methodology included the following:

- Some respondents requested the development of a scope 1 specific guidance document to provide detailed guidance for the calculation of scope 1 emissions, akin to the existing *Scope 2 Guidance* and *Scope 3 Calculation Guidance* documents.
- Some respondents also more specifically requested additional guidance for the calculation of fugitive emissions from refrigerants. In some instances this included the suggestion for guidance on simplified methods for estimating fugitive refrigerant emissions.
- Some respondents requested the *Corporate Standard* incorporate estimation methodology guidance. This included the request for guidance on acceptable methodologies for estimating activity data based on, for example, square footage/meters and energy usage intensity (EUI) factors, or estimating refrigerant activity data based on number of HVAC units, etc. Additionally, some respondents suggested that the *Corporate Standard* could include a hierarchy of preferred estimation methods to choose from when actual data is unavailable. Some respondents also recommended providing notes of caution on the potential pitfalls of different estimation approaches.
- Some respondents suggested adding requirements and guidance for when information is not available or becomes available subsequent to year-end. This also corresponds with feedback requesting guidance for estimation methodologies when data is not yet available. For example, a quarterly utility invoice not yet received when performing emissions calculations. Some respondents suggested utilizing a method akin to financial accounting for year-

end accruals or establishing estimation techniques (e.g., utilizing a 3- or 12-quarter rolling average). Another common example related to the timing of when new emission factors are published.

- Updating the approach for calculating emissions to consider new technologies (both new measurement technologies and decarbonization technologies).
- Developing, incorporating or referencing examples a separate calculation guidance document similar to the multiple methodology documents (e.g., stationary combustion, mobile combustion) produced by the US EPA. Some respondents suggested it would be useful to consider if there are relevant concepts that would aid consistency of application and should be therefore included in the GHG Protocol or as separate guidance, or incorporated by reference (e.g., hierarchy of estimation methods).
- Adding further guidance on accounting for self-generated energy that is either consumed by the entity or exported to the grid.
- Updating the approach for calculating emissions to consider land sector and removals. Note that this topic will be addressed through the *Land Sector and Removals Guidance* which is currently in pilot testing and review phase.
- Updating the approach for calculating emissions to consider market-based mechanisms and avoided emissions. Note that this topic will be addressed through the workstream to consider mitigation impact accounting approaches including market-based methodologies, project based or intervention accounting methods, or other approaches more holistically across sectors, including their role in GHG inventory reporting and/or target setting. For more information, please sign up for the GHG Protocol's [newsletter](#).

## F.2. Feedback on reporting

### **Current reporting requirements in *Corporate Standard***

Chapter 9 of the *Corporate Standard* establishes requirements for reporting GHG emissions, wherein “reported information shall be relevant, complete, consistent, transparent and accurate”. The *Corporate Standard* requires reporting of scope 1 and scope 2 emissions at a minimum.

Required information that shall be included in a public GHG emission report are (page 63):

- Description of the company and inventory boundary
  - Organizational boundaries, including chosen consolidation approach

- Operational boundary, specifying if scope 3 is included, and a list of types of activities covered
- Reporting period covered
- Information on emissions
  - Total scope 1 and 2 emissions, independent of any GHG trades
  - Emissions data separately for each scope
  - Emissions for CO<sub>2</sub>, CH<sub>4</sub>, N<sub>2</sub>O, HFCs, PFCs, SF<sub>6</sub> and NF<sub>3</sub> (with the NF<sub>3</sub> requirement added in the 2013 *Required Greenhouse Gases in Inventories: Accounting and Reporting Standards Amendment*) reported separately and in metric tonnes and in tonnes of CO<sub>2</sub> equivalent
  - Year chosen as base year, emissions profile over time
  - Appropriate context of any significant emissions changes that trigger base year emissions recalculation
  - Emissions data for direct CO<sub>2</sub> emissions from biologically sequestered carbon, reported separately from the scopes
  - Methodologies to calculate or measure emissions, with a reference or link to calculation tools used
  - Specific exclusions of sources, facilities, and/or operations

Chapter 9 of the *Corporate Standard* also outlines information that may optionally be reported (pages 63-64).

### **Stakeholder feedback on reporting requirements**

Some respondents suggested providing more prescriptive reporting requirements, specifically related to:

- Expanding on the requirement to disclose methodologies, to include emission factors used, a description of data sources, a description of estimation methodologies, a description of any significant assumptions.
- Disclosing significant estimates and distinguishing estimates from actual data.
- Disclosing the source of emission factors used, consistent with what is done in the *Scope 3 Standard* section 11.1 which specifies that companies shall report “for each scope 3 category, a description of the types and sources of data, including activity data, emission factors and GWP values” (page 119).





- Some respondents requested that the requirement to disclose the % of emissions obtained through the use of supplier-specific information (found on page 119 of the *Scope 3 Standard*) should be highlighted and better articulated, with a focus on clarifying the portion of such data that is third-party certified, to promote data quality in the whole value chain. Some respondents also suggested considering requirements to disclose the % of emissions obtained via actual versus estimated activity data.
- Disclosing subsequent events as defined in financial accounting (e.g., material items that occur after year end) and accounting treatment for subsequently available information (e.g., information that becomes available subsequent to year end that has a material impact on the emissions reported). Related, more guidance on the approach for updating previously reported emissions (e.g., retrospective restatement, prospective change) was requested. Some respondents suggested utilizing a method akin to financial accounting for restatements.
- Expanding disclosure requirements relating to exclusions from an organization's inventory, including disclosing the reasoning for exclusion and the significance of the exclusion. This coincides with the feedback for more guidance on estimation methodology as it relates to estimating excluded emission sources.
- Clarifying how GHG emissions data must be disclosed for "each scope and for all seven GHGs separately" as there is diversity of practice regarding presenting this data. Chapter 9 of the *Corporate Standard* (page 63) includes as separate bullets the requirements to (1) report GHG emissions data disaggregated by scope and (2) report GHG emissions data disaggregated by GHG. Some respondents noted that this can be interpreted to mean that emissions from each GHG are required to be reported by scope (i.e., these two disclosure requirements should be considered together) or, alternatively, each GHG is required to be reported in total and GHG emissions data by scope is also presented in total (i.e., these two disclosure requirements are distinct). Some respondents suggested that further clarity and guidance on the intent of these requirements would increase consistency and comparability across entities.
- Some respondents suggested requiring reporting emissions of fluorinated refrigerant gases.
- Removing the reporting requirement to report emissions data for all seven GHGs separately, in metric tonnes of respective gas type and CO<sub>2</sub> equivalent, as it is a burden for companies that who have immaterial amounts of non-carbon gases. Respondents recommended considering if this requirement should be based on materiality or part of sector specific standards.



- Information required to be disclosed related to the base year beyond the year chosen (e.g., base year data by scope of emissions) and which information about the base year is optional. Additionally, if the intention was that the preparer include comparable information between the current year and base year (or other periods in between), the disclosure requirements should indicate the extent to which disclosures should be provided.
- Requirements for disclosing the significance threshold(s) set by an organization and disclosing the triggers for a base year recalculation, including prescribing the appropriate level of detail and aggregation.
- As it relates to material errors, some respondents suggested requiring organizations to restate prior year disclosures to reflect corrected information. Some respondents suggested requiring disclosures about the error and its impact on the current reporting period.
- Clarifying/updating language concerning “relevant ratio performance indicators”, currently listed under optional reporting information on page 63 of the *Corporate Standard* to refer unambiguously to GHG emissions intensities and make it required rather than optional, if the organization uses intensity targets.
- Updating the requirement to report scope 1 and 2 GHG emissions “independent of any GHG trades such as sales, purchases, transfers, or banking of allowances” within the reporting requirements of the *Corporate Standard* (page 63) to align with terminology currently used in practice. Specifically, recommending to add “carbon credits.”
- Including a visual representation of how required and recommended disclosures typically look in practice to help organizations new to GHG emissions reporting publish all relevant information.

### F.3. Feedback requesting new tools and resources

Many respondents suggested providing additional tools and resources for GHG emission calculation and reporting, specifically related to:

- Comprehensive emission factor and global warming potential database or repository with standardized units for calculation. This might also include residual mix and supplier specific emission factors. If not available, providing links to databases that are publicly available.
- Electronic reporting (similar to CDP)
- Estimating emissions (when actual data is not available)

- Industry benchmarks (emissions, intensity, etc.) made publicly available for comparison
- Scope 3 estimator tool updated more frequently and made more user-friendly
- Developing internal controls over emissions reporting, similar to guidance releases by WBCSD and COSO.
- Measuring renewable energy development in ‘energy communities’, ‘energy burdened areas’, and ‘environmental justice communities’
- Lessor and lessee tools and resources for determining control
- Land sector and removals tools and resources for calculating associated emissions
- HFC and PFC calculation and estimation tools and resources
- Waste management calculation and estimation tools and resources
- More Q&A with faster responses from the GHG Protocol
- Guidance for regulatory reporting (ISSB, CSRD, SEC)
- Calculating financed emissions (including cash, retirement plans, etc.)
- Calculating emission reduction and target progress (net-zero, carbon neutral)
- Comparison or mapping to other voluntary and regulatory reporting
- Life Cycle Assessment (LCA) methodology and tools for doing an LCAs

## G. Cross-cutting feedback on the GHG Protocol

Some respondents provided feedback beyond the scope of the *Corporate Standard* that was applicable more broadly to the GHG Protocol. This included feedback regarding the GHG Protocol governance structure, the standard development and update process, and the GHG Protocol standard and guidance document structure.

### G.1. Feedback on governance

Some survey respondents suggested a more formalized governance structure for the GHG Protocol, noting that the GHG Protocol is one of the most widely known and applied emissions reporting standards. The importance of GHG Protocol is growing as emissions reporting continues to increase in prominence with regulatory reporting requirements from the European Union as part of the Corporate Sustainability Reporting Directive (CSRD), internationally by the International Sustainability Standards Board (ISSB), in the United States by the Securities and Exchange Commission (SEC), and in

other jurisdictions. Given the wide usage of its standards, the GHG Protocol is a crucial player in the future of credible, reliable reporting. Respondents noted that accurate greenhouse gas reporting is integral to achieving emissions reduction targets, monitoring emissions activity by governments and regulatory agencies, understanding the impact of corporate actions, and informing investment and other decisions. By formalizing its operational practices and policies related to the development of standards, the GHG Protocol can build trust in the emissions reporting environment, enhance transparency, and allow users to rely on and apply its guidance consistently.

Some respondents recommended the following governance elements for the GHG Protocol to consider:

- An oversight board comprised of key stakeholders
- A standard setting board with relevant experience (e.g., engineering, sustainability reporting, standard setting)
- Formal due process over issuance of new standards
- Post implementation review
- Process for continuous updates and maintenance
- Competent staff from all relevant disciplines in sufficient number to achieve the objectives of the organization
- Independent source of funding

Some respondents also suggested developing a mechanism for interpretive guidance, similar to the FASB's Emerging Issues Task Force or the IASB's IFRS Interpretations Committee. An implementation and interpretation group – with representatives drawn from a cross section of GHG Protocol's constituencies, including preparers, scientists, auditors, greenhouse gas verification and assurance providers, standard setters, regulators, and others – would improve the consistency and quality of emissions disclosures while providing a resource to preparers as the expectations of users continue to escalate.

Some respondents also suggested developing an internal body to formally receive, review and provide feedback to inquiries from organizations, consultancies, NGOs and other interested stakeholders. These respondents further noted that questions, responses and clarifications made through this process should be cataloged in an online, searchable database and should be citable by organizations applying GHG Protocol standards and guidance in future instances. These respondents suggested regular summaries authoritatively announcing official decisions, clarifications, examples, and other items of general interest should be regularly published (similar to the IRS Internal Revenue Bulletins).

In addition, the heightened focus on emissions reporting creates an increase in expectations for the GHG Protocol to address and resolve related reporting issues (e.g., estimation techniques, measurement methodologies) as well as to continue to evolve with changing user expectations. This corresponded with the feedback that a mechanism for continuous updates was needed from the GHG Protocol to reflect new and emerging areas, including:

- Continuous updates to reflect the voluntary and mandatory GHG emissions reporting landscape, or other changes in the regulatory environment
- Continuous updates to reflect changes in GHGs covered by the UNFCCC, emission factor sources, GWP values, and the latest developments in climate science
- Continuous updates to reflect new and emerging technologies (e.g., electric vehicles, renewable energy, continuous emissions monitoring systems, etc.)
- Continuous updates to reflect the latest terminology and definitions (e.g., financial accounting, market-based mechanisms, etc.)
- Continuous updates to reflect current GHG target setting best practices (e.g., updated to reflect latest SBTi guidance, including carbon dioxide removal as an option for targets, etc.)
- Continuous updates to case studies and related examples

Some respondents urged that organizations need the standards and guidance documents to be updated on a regular basis and in a timely manner to be responsive to a GHG reporting space that is quickly evolving. The range of organizations that are now conducting corporate GHG emissions inventories and reports is widening quickly and has begun to encompass an increasing number of smaller organizations across many sectors. These respondents noted that GHG Protocol standards, guidance and tools need to reflect this growth and breadth of organizations that are participating. Thus, some respondents recommended a review schedule be standardized and pre-determined (e.g., GHG Protocol will review its standards and guidance every 5 years). These respondents suggested that if a review indicates that clarifications, additions, and/or deletions to the standards are necessary, then the GHG Protocol would kick off the process to update the standards and guidance. Further, to support the effective reporting of emissions, some respondents said that there is a need for the GHG Protocol to invest in its own organizational structure, ensuring that relevant expertise and capital are dedicated to the improvement and maintenance of its reporting standards. Some suggested that this investment would provide returns to all stakeholders in the sustainability reporting ecosystem.

## G.2. Feedback on standard and guidance document organization

Some suggested the GHG Protocol revisit the organization of its standards and guidance documents. The GHG Protocol's current standards and guidance documents – including the *Corporate Standard*, the *Scope 2 Guidance*, and the *Corporate Value Chain (Scope 3) Accounting and Reporting Standard* – were developed over time and intermingle background information, case studies, definitions, required and optional disclosures and more. Some respondents expressed that in some cases it may be difficult for a user to identify the proposed source of guidance and to reconcile differences among the standards and guidance to discern how they interact with one another, posing risk that relevant information is misinterpreted or overlooked. Some respondents pointed to the number of GHG Protocol standards and guidance that make determination of which standards and guidance are applicable for a given reporting organization, such as the availability of separate guidance for cities and communities (e.g., *Global Protocol for Community-Scale Greenhouse Gas Inventories*), sector-specific guidance (e.g., *A Recommended Methodology for Estimating and Reporting the Potential Greenhouse Gas Emissions from Fossil Fuel Reserves*), and other supplemental standards (e.g., *Product Life Cycle Accounting and Reporting Standard*).

Some respondents suggested that this update process is the time to restructure the full suite of standards and guidance, emulating some of the elements of financial reporting – standards issued by FASB and IASB– that are being leveraged by the US SEC and standard setters such as ISSB and the European Financial Reporting Advisory Group (EFRAG) in its draft of the European Sustainability Reporting Standards (ESRS). Some respondents recommend the GHG Protocol consider the following elements to support the effectiveness of standards on any topic:

- Topical delineation – the standards and guidance could be separated among categories such as general topics, scope 1, scope 2, and scope 3 reporting, and sector specific guidance; each topical area could be further divided by subtopic.
- Archetypal organization – for example, each topic could include the purpose, background, recognition, measurement, required disclosures, and optional disclosures, supplemented with the basis for conclusions, case studies, and definitions. This type of organization would facilitate understanding of the core requirements, provide context for the users through background and basis for conclusions, and ensure relevant guidance is not overlooked. In addition, in some cases, elements of existing content may be more appropriately included as supplemental educational materials, which would further clarify the requirements for users.
- Numbered standards and paragraphs – a common numbering scheme would facilitate referencing and understanding.



Many respondents cited that consolidating all relevant emissions reporting guidance into a structured group of standards would also help foster a strong governance of the GHG Protocol in its role in the standard-setting environment, further supporting climate action objectives and global climate change mitigation goals. It would also allow for more targeted updates to be made to specific elements of the GHG Protocol without reconsideration of all of the elements, making it easier for users to understand which elements may have been updated and how.

### G.3. Feedback on guiding principles for updates

A stated objective of the *Corporate Standard* today is “to help companies prepare a GHG inventory that represents a true and fair account of their emissions” (page 3). Some respondents expressed that this concept is at the heart of the GHG Protocol’s purpose, and the current update process should prioritize advancing it further. Important elements of a true and fair representation mentioned by respondents include accuracy, credibility, and comparability of emissions and reductions, including those resulting from market-based interventions. Some respondents suggested that achieving accuracy is best understood as an ongoing refinement process rather than a fixed end state. As such, some respondents suggested the GHG Protocol should encourage and enable companies to continuously improve the accuracy of their inventories as data and methodologies mature over time, while recognizing that appropriate accuracy levels will vary across scopes and should be right-sized based on the degree to which they are material to reporting and decision making. Ultimately, more accurate measurement of scopes 1, 2 and 3 inventories will result in more credible emission reports and give companies and other stakeholders information they can use to take more targeted and effective actions to reduce emissions.

Some respondents called for more standardized metrics and measurement methodologies to enable more accurate and consistent inventories and improve the credibility and comparability of companies’ emissions reports. Because measurement capabilities and accuracy levels differ across scopes and categories, some respondents noted that standardization needs to be targeted and responsive to specific context.

Some respondents highlighted that true and fair representation has become especially important in recent years, as the credibility of both the GHG Protocol and company-level carbon footprints have come under increased scrutiny. Some noted that criticism is frequently focused on inaccuracies in scope 2 inventories, where claims of reductions in reported footprints are not matched by commensurate real-world reductions. They suggested that these discrepancies often stem from the use of high-level data that do not reflect physical flows of electricity, and the crediting of interventions that are widely seen as ineffective at reducing GHG emissions, such as unbundled Energy Attribute Certificates (EACs). Other respondents noted that in practice, companies make decisions based on what actions are accounted as reductions to their footprint, and thus

the GHG Protocol and associated inventories are a crucial source of insight informing companies' climate strategies and GHG reduction actions. These respondents suggested a need for standards to reflect real-world GHG emissions impacts and to create new opportunities for the standards to reflect real-world GHG emission reductions.

Some survey respondents emphasized that the GHG Protocol needs to be functional for it to be widely utilized and effective and noted that companies should be able to produce inventories reasonably and without undue burden. They highlighted that today, companies often require significant support to implement GHG Protocol standards, including to interpret guidance, obtain data, and calculate emissions. They urged that the updated GHG Protocol provide more clarity and ease of use, noting that inventories should be able to be completed consistently, using standardized solutions and calculations that are readily accessible and feasible. They should not require data sources that are only available through a small number of for-profit providers.

Some respondents also noted that while corporate inventories naturally entail a level of complexity, GHG Protocol methodologies and company GHG reports should be readily understandable to external stakeholders relying on them. They emphasized that by making metrics and methodologies as straightforward as possible, the GHG Protocol will foster the creation of more understandable and useful inventories. Some of these respondents described two important potential benefits: the GHG Protocol will be more consistently applied, improving comparability across organizations, and companies will be able to better evaluate themselves over time as their operations and footprints evolve - one of the GHG Protocol's primary use cases.

#### G.4. Feedback on maintaining accessibility

The last cross-cutting feedback theme from a subset of respondents was to ensure that the standard and guidance update process and any resulting updates are designed to be accessible and usable to all and not a select few or limited number of organizations. Some respondents emphasized the need for the *Corporate Standard* to be equitable and accessible to all with a wide range of budgets and capacities to conduct inventories. Concerns often referenced limiting the scope 2 market-based method or potential similar approaches for other scopes to only allow for niche or expensive instruments, or incorporating overly burdensome accounting requirements, such as considering counterfactuals (e.g., consequential accounting for inventories), which could limit the participation of smaller organizations or those without budget to hire consultants.