Greenhouse Gas Protocol

Detailed Summary of Survey Responses on Market-based Accounting Approaches Stakeholder Survey

July 2024

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Executive Summary

Background on market-based approaches: The *GHG Protocol Corporate Standard* (Corporate Standard), published in 2004, is based on inventory accounting methods using a physical inventory accounting approach. In 2011, the *Corporate Value Chain (Scope 3) Accounting and Reporting Standard* (Scope 3 Standard) introduced further specification on the use of this approach for calculating scope 3 emissions. In 2015, the *Greenhouse Gas Protocol Scope 2 Guidance* (Scope 2 Guidance) introduced an approach for accounting for indirect scope 2 emissions from purchased energy using both a location-based method and a market-based method.

Since the introduction of the market-based method in scope 2, new market-based approaches have been proposed for a variety of other applications. Currently, market-based approaches similar to the scope 2 market-based method is not included in or allowed under the *Corporate Standard* or *Scope 3 Standard* for calculating scope 1 or scope 3 emissions. Both the *Corporate Standard* and the *Scope 3 Standard* allow companies to report transactions of market instruments and project-based emissions reductions, avoided emissions from the use of sold products, and other activities quantified using project accounting methods separately from scope 1 and scope 3 emissions in a GHG emissions report.

Market-based Accounting Approaches Survey background: Between November 2022 and March 2023, the GHG Protocol secretariat collected stakeholder input through four surveys on the need for updates to existing standards and guidance and proposals for new guidance, including in relation to market-based approaches. Survey respondents included businesses, academia, non-profits, industry groups, government institutions, among others. The Market-based Accounting Approaches Survey received nearly 343 survey responses providing stakeholder perspectives on market instruments and their role in relation to GHG inventories, reporting, and target setting. Additionally, 230 proposals across the four survey topics were submitted separately. The subset pertaining to market-based approaches can be accessed here.

The Market-based Accounting Approaches Survey and accompanying memo introduced some terminology and definitions to provide structure and facilitate feedback from respondents on a broad range of topics. These terms and definitions are intended to be working definitions to be refined and clarified as part of the stakeholder process. Within this summary report, the term 'market-based approaches' is used to broadly refer to a range of accounting and reporting approaches encompassing both traceability mechanisms and project-crediting. The 'market-based method' is distinguished as a specific market-based approach that is defined within the *Scope 2 Guidance* for use in scope 2 accounting. Additionally, the terms 'market instruments' or 'instruments' are used in this summary to refer to the specific mechanism or model that is used to convey attribute claims for use within a market-based approach.

Summary of feedback received: This draft survey summary report provides an overview of responses received through the market-based approaches from all survey respondents and highlights common themes. This summary will be used to inform further stakeholder discussions on updates to and additional guidance within the suite of GHG Protocol standards. This summary report of survey feedback provides context based on the existing guidance within GHG Protocol standards. The following summarizes major points of feedback from the survey.

- **Accounting objectives:** Feedback revealed that some stakeholders are seeking new or updated objectives to be facilitated by the *Corporate Standard* compared to its original purposes (which include helping companies prepare a GHG inventory that represents a true and fair account of their emissions, providing businesses with information that can be used to build an effective strategy to manage and reduce GHG emissions, among others). Some respondents suggested that a primary objective should be to enhance incentives for companies to invest in decarbonization and be recognized for more climate action. In contrast, other survey respondents supported the current *Corporate Standard* objectives and inventory approach, which they believe are best achieved via the accounting of physical emissions associated with a company's activities. Respondents provided feedback on how the use of market-based approaches would enhance or detract from identified accounting objectives.

- **Integration of accounting approaches:** Some respondents suggested that the project accounting method should be integrated into the existing inventory accounting approach of the *Corporate Standard*, in order to quantify and demonstrate the impacts of mitigation actions. Some respondents suggested that the project accounting method should not be integrated into the inventory accounting approach, suggesting that project accounting is inconsistent with inventory accounting.

- **Market based approaches related to scope 1 and scope 3:** Some respondents suggested that scope 1 accounting and reporting requirements should be updated to integrate market-based approaches to create positive incentives for companies to invest in decarbonization. Some respondents suggested that market-based approaches should not be integrated into scope 1 accounting because scope 1 emissions are definitionally incompatible with market-based approaches given that scope 1 are direct emissions. Some respondents suggested that scope 3 accounting and reporting requirements should also be updated to integrate market-based approaches, stating that the same arguments for scope 1, as well as highlighting additional considerations that are unique to scope 3. Some respondents said that market-based approaches should not be integrated into scope 3 accounting, suggesting that it would obscure the reporting of a company's GHG inventory by basing the reporting on purely financial relationships rather than physical relationships.

- **Reporting structure:** Some respondents suggested that the dual reporting of location-based and market-based emissions employed in scope 2 should serve as a template for reporting in scope 1 and/or scope 3. Some respondents were opposed to idea of expanding the dual reporting approach to scope 1 and/or scope 3, suggesting market-based approaches be integrated directly into inventory accounting. Some respondents were opposed to the expansion of the idea of dual reporting, suggesting that the GHG inventory should be based only on physical relationships. Some respondents suggested that an additional reporting category should be formally introduced to quantify and report on the impact of actions using a project/intervention accounting approach, in order to incentivize organizations to invest in interventions that create the most climate-positive impacts.

- **Instruments reporting:** Some respondents expressed interest in market instruments being reported within the scopes, suggesting that this inclusion would provide

decarbonization incentives and promote lower-carbon solutions. Some respondents suggested that the reporting of market instruments should be kept separate from the scopes. The variety of reasons included: a) inventory accounting reflecting primarily physical emissions; b) insufficient rigor or traceability for credible inventory claims; c) inconsistency of mixing project/intervention accounting with an inventory; d) the decoupling of environmental attributes from physical products. Some respondents suggested that the treatment of market instruments should be sector-specific, typically driven by the nature of a sectoral value chain and by the desired accounting objectives. Some of the main examples cited were fossil-alternative fuels, sustainable aviation fuel (SAF), and agriculture.

- **Criteria and safeguards:** Respondents recommended that defining the role of market instruments should go in tandem with defining criteria and safeguards for market instruments. Respondents listed additionality and the avoidance of double counting as criteria or safeguards that should be required, among others. Some respondents suggested that market-based approaches should be viewed as an interim practice that should be phased out over time.

- **Role of GHG Protocol and ecosystem collaboration:** Some suggested that the role of the GHG Protocol should be to provide guidance regarding the accounting and reporting of market instruments in order to enable programs to set further requirements and guidance specific to their program objectives. GHG Protocol guidance on quantification and reporting would promote alignment and avoid market fragmentation that could arise if quantification and reporting approaches are left to regulators in different countries. However, some stakeholders suggested that GHG Protocol guidance should remain at a high level, such as defining minimum principles, criteria and safeguards, and allow space for programs or regulators to develop detailed requirements, including target setting rules, eligibility criteria, and requirements, and further requirements for specific sectors.

  Some respondents also suggested that GHG Protocol should actively manage implementation programs on market-based approaches to ensure the credibility of programs' design, administration, and GHG outcomes. Other respondents opposed the idea of GHG Protocol actively managing programs, suggesting that programs and regulators are better positioned to provide verification, enforcement, and oversight.

  Stakeholders view collaboration and alignment in the ecosystem as key success factors to achieve greater climate action. Respondents suggested that more alignment between different actors would help meet objectives, such as reducing confusion among practitioners and interpreters; reducing the potential for leakage, double counting, or other accounting issues between systems; and reducing the administrative burden of reporting. Respondents asked the GHG Protocol to understand the impact of local regulations within the application of market instruments in reporting. Respondents asked the GHG Protocol to maintain prior accounting approaches and consider the adoption of programs that have built upon GHG Protocol or developed other principles, systems, and practices.

Next steps: Survey feedback showed that there is a clear need for guidance on how companies quantify and report on actions (e.g. interventions) and market instruments in corporate GHG reporting. In the past, GHG Protocol has published several standards and guidance relevant to the topics raised in the survey. A few to highlight include:

- Project Protocol (and sector-specific supplements for electricity and land use, land use change and forestry), which provides requirements and guidance for quantifying GHG impacts of projects
- Policy and Action Standard, which provides requirements and guidance for quantifying GHG impacts of actions larger than projects
- Mitigation Goal Standard, which explains the role that market instruments can play in determining target progress and achievement, separately from the GHG inventory

GHG Protocol plans to draw on these resources to provide new requirements and guidance on how companies account for and report on actions (e.g. interventions) and market instruments in GHG reporting.

Survey feedback also showed that there is a need for clearer roles among actors in the GHG accounting ecosystem, including GHG Protocol, target setting programs and regulators. In tandem with the standards update process, GHG Protocol is working closely with SBTi and other key programs in the accounting, reporting and target setting ecosystem. Any future updates to GHG Protocol standards and guidance will seek alignment with accounting rules under development through major disclosure initiatives and coordination with other key programs and initiatives.

As announced in November of 2023, GHG Protocol is refining its governance model to meet the needs of a rapidly changing GHG accounting and reporting landscape. New guidance related to market-based approaches will be developed through a Technical Working Group, whose membership is currently being selected. More information about governance bodies can be found here. The survey summary report, along with proposals submitted which cover similar themes, will support the development of the specific workplan for the Technical Working Group. In addition, the GHG Protocol secretariat will continue to solicit new information and review relevant new research studies as they become available throughout the update process.

Note: Between April 8th and May 6th, 2024, GHG Protocol offered an opportunity for stakeholders who submitted responses to the Market-based Accounting Approaches Survey to provide feedback on the draft Market-based Accounting Approaches Survey Summary Report to ensure that perspectives were comprehensively and accurately represented. The log of changes made from the originally published draft summary report is included at the end of this document.

To receive updates: Information about the standards update process will be shared with subscribers to the GHG Protocol newsletter via email. If you'd like to receive email updates, please subscribe to the GHG Protocol newsletter here.

Background

A. Market-Based Accounting Approaches Survey Background

Since the publication of Greenhouse Gas (GHG) Protocol's *Corporate Accounting and Reporting Standard* (2004), *Corporate Value Chain (Scope 3) Standard* (2011), *Scope 3 Calculation Guidance* (2013), and *Scope 2 Guidance* (2015), there have been various significant developments in GHG accounting and reporting and GHG emissions management. Among these are the introduction of the Science Based Targets initiative (SBTi), the trend toward net-zero target-setting, new regulations which mandate climate-related disclosures, adoption of the standards by thousands of companies, and academic research on their efficacy and impact.

Between November 2022 and March 2023, the GHG Protocol secretariat collected stakeholder input via four online surveys and an opportunity to submit proposals with suggestions for updating existing standards and guidance or developing new guidance. This feedback covered the GHG Protocol's *Corporate Standard*, *Scope 2 Guidance*, *Scope 3 Standard* and *Scope 3 Technical Guidance*, and a separate survey concerning market-based approaches (refer here). The feedback from these four surveys will inform the scope of the updates that GHG Protocol makes to its standards and guidance in the coming months.

The aim of any updates will be to align with best practice approaches to ensure that the GHG Protocol standards for accounting and reporting scope 1, scope 2, and scope 3 emissions are effective in providing a rigorous and credible foundation for businesses 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 developed and under development through major disclosure initiatives.

The Market-based Accounting Approaches Survey aimed to gather inputs and perspectives from stakeholders related to market instruments and their role in relation to GHG inventories, reporting, and target setting.

This report summarizes stakeholder feedback from the Market Based Accounting Approaches Survey. The GHG Protocol secretariat received 343 survey responses. In addition, stakeholders submitted 230 proposals across the four survey topics. The subset pertaining to market-based approaches can be accessed here. As themes in proposals and survey responses coincided, the feedback summarized in the report also makes mention of ideas commonly expressed in proposals, where relevant. Proposals submitted exclusively on the market-based method in Scope 2 are excluded from this report and can be found in Scope 2 Proposals Summary Report.

B. Background on Market-Based Approaches

The GHG Protocol *Corporate Standard* (2004) is based on inventory accounting methods using a physical inventory accounting approach. Further specification on the use of this approach for calculating scope 3 emissions was introduced in the *Scope 3 Standard* (2011).

Greenhouse gas inventory accounting is intended to attribute emissions to entities based on their ownership or control of emissions sources as well as emissions that occur in their value chain. GHG inventory accounting and reporting includes disaggregated reporting of information about a company's emissions as part of a GHG emissions report, following the principles of accuracy, completeness, consistency, relevance, and transparency.

Current Greenhouse Gas Protocol approach for scope 1 and scope 3

Scope 1 emissions are direct emissions released from sources owned or controlled by the reporting company. Scope 3 are indirect emissions that occur in the reporting company's value chain (other than indirect emissions from purchased energy which are accounted for in scope 2). Market-based approaches are not included for scope 1 or scope 3 accounting.

Scope 3 emissions are calculated using allocation metrics tied primarily to physical consumption of products. Allocation is necessary when a single system produces multiple outputs and emissions are only quantified for the entire system as a whole. For each individual system, a single, consistent allocation factor should be used to allocate emissions. The sum of the allocated emissions for each output of a system should equal 100 percent of emissions from the system. Companies should select the allocation approach that 1) best reflects the causal relationship between the production of outputs and resulting emissions, 2) results in the most accurate and credible emissions estimates, 3) best supports effective decision-making and GHG reduction activities, and 4) adheres to GHG accounting principles. For more information, refer to chapters 7 and 8 of the *Scope 3 Standard.*

Where companies purchase products from a common pool (e.g. unsegregated supply of an agricultural commodity, common-carrier gas pipeline, fuel distribution system, etc.), companies account for an allocated share of emissions from the common pool based on their share of purchased products. A common pool represents a mix of GHG emitting activities tied to the company's physical consumption (e.g. a mix of farms with different characteristics that produce the common supply that the company consumes, or a mix of gas derived from fossil, waste and other resources). When a company reaches the limit of physical traceability to a common pool, it accounts for the average emissions from that common pool.

In addition to scope 1, scope 2, and scope 3 emissions reported within the inventory, the GHG Protocol *Corporate Standard* also provides guidance on the reporting of information that may be included in the broader GHG emissions report. Some of the optional information for the GHG emissions report includes:

- Purchases or sales of allowances, offsets, credits, or other instruments
- Project-based reductions, avoided emissions, or others GHG impacts of company actions quantified using project accounting methods (relative to a counterfactual baseline scenario).

The *Corporate Standard* (Chapter 8, Accounting for GHG Reductions, page 60-61) states:

- "It is important for companies to report their physical inventory emissions for their chosen inventory boundaries separately and independently of any GHG trades they undertake. GHG trades (i.e. all purchases or sales of allowances, offsets, and credits) should be reported in its public GHG report under optional information—either in relation to a target (see chapter 11) or corporate inventory (see chapter 9). Appropriate information addressing the credibility of purchased or sold offsets or credits should be included.
- When companies implement internal projects that reduce GHGs from their operations, the resulting reductions are usually captured in their inventory's boundaries. These reductions need not be reported separately unless they are sold, traded externally, or otherwise used as an offset or credit. However, some companies may be able to make changes to their own operations that result in GHG emissions changes at sources not included in their own inventory boundary, or not captured by comparing emissions changes over time. …
- These reductions may be separately quantified, for example using the GHG Protocol [Project Protocol], and reported in a company's public GHG report under optional information in the same way as GHG trades described above."

The GHG Protocol for Project Accounting (i.e., the *Project Protocol*) (2005) is a guide for quantifying reductions from GHG mitigation projects. The *Project Protocol* is intended to be used in tandem with the *Corporate Standard*, with the *Corporate Standard* used to calculate and report an annual entity-wide inventory of emissions and removals and the *Project Protocol* used to calculate emissions reductions attributable to specific mitigation projects relative to counterfactual baseline scenarios.

Scope 2 Guidance

The *Scope 2 Guidance* (2015) introduced an approach for accounting for indirect scope 2 emissions from purchased electricity, steam, heating, or cooling using two allocation methods:

- The location-based method, which reflects the average emissions intensity of grids on which energy consumption occurs (using mostly grid-average emission factor data).
- The market-based method, which reflects emissions from electricity that companies have purposefully chosen (or their lack of choice). It derives emission factors from contractual instruments, which include any type of contract between two parties for the sale and purchase of energy bundled with attributes about the energy generation, or for unbundled attribute claims.

All organizations are required to report their scope 2 emissions using the location-based method. For organizations with any operations in electricity markets providing product or supplier-specific data in the form of contractual instruments they are required to report scope 2 emissions according to both the location-based method and the market-based method (i.e.,

"dual reporting"). The *Scope 2 Guidance* defines additional requirements for the market-based method of purchased electricity such as meeting several quality criteria for contractual instruments and the use of residual emission factors.

New proposed applications

Since the introduction of the market-based method for electricity purchases within the *Scope 2 Guidance*, new market-based approaches have also been proposed for a variety of other applications. Market-based approaches have recently been suggested for several different sectors, including natural gas/biomethane, aviation fuels (SAF), agricultural commodities, freight transport, maritime shipping, steel, aluminum, and others. Market-based approaches have typically arisen in cases where companies purchase products or commodities from common pools or distribution systems, and direct contracting with suppliers or traceability to individual points of origin is not feasible.

Some suggestions would seek to expand the use of the market-based method introduced in the *Scope 2 Guidance* to account for scope 1 and/or scope 3 emissions. Other suggestions would seek to introduce new market-based approaches, making use of varied accounting approaches or traceability mechanisms. These suggestions include value chain interventions (e.g. supply shed), project-based crediting (e.g. offsets and insets), and chain of custody models (e.g. mass balance and book-and-claim). At the same time, there has been mixed feedback on the use of the market-based method in scope 2, including some criticisms about its efficacy and appropriateness.

Market-Based Accounting Approaches Survey Summary

C. Accounting Objectives and Approaches

Introduction

The GHG Protocol *Corporate Standard* (page 3) states that the document was developed 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 a 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

Further, the *Corporate Standard* (page 3) outlines business goals of a GHG inventory, including:

- Managing GHG risks and identifying reduction opportunities
- Public reporting and participation in voluntary GHG programs
- Participating in mandatory reporting programs
- Participating in GHG markets
- Recognition for early voluntary action.

In addition to these objectives and uses, the *Corporate Standard* (page 3) notes how the document should not be used:

- "The *Corporate Standard* should not be used to quantify the reductions associated with GHG mitigation projects for use as offsets or credits— [The *Project Protocol* provides] standards and guidance for this purpose."
- "Policymakers and architects of GHG programs can also use relevant parts of this standard as a basis for their own accounting and reporting requirements."

Additionally, the *Project Protocol* (page 5) states that the document was developed with the following objectives in mind:

- Provide a credible and transparent approach for quantifying and reporting GHG reductions from GHG projects;
- Enhance the credibility of GHG project accounting through the application of common accounting concepts, procedures, and principles; and
- Provide a platform for harmonization among different project-based GHG initiatives and programs.

C.1 Feedback on accounting objectives

Feedback revealed that some stakeholders see a need for new or updated objectives to be facilitated by the *Corporate Standard*. Survey respondents shared various perspectives on whether different GHG accounting objectives could coexist and be fulfilled by the same standard. One of the central questions arising from stakeholder feedback was what the objectives of a GHG inventory are or should be, which is highlighted within the feedback in this section.

Respondents also provided feedback on how the use of market instruments or market-based approaches could enhance or detract from the identified accounting objectives. Ultimately, stakeholders' differing perspectives on the distinct objective(s) of the GHG Protocol's inventory approach highlights the need to clarify and reach agreement on the purposes of GHG inventories and broader GHG emissions reports. This issue, as well as what role the GHG Protocol plays within the broader ecosystem of actors in the GHG reporting, disclosure, and target-setting ecosystem, were commonly cited as key questions to be answered by the GHG Protocol.

C.2 Feedback on incentives

Some respondents suggested that a primary objective of the *Corporate Standard* should be to develop a system that creates incentives for participants to engage in climate action. Specifically, these respondents suggested that the GHG Protocol's accounting and reporting framework should facilitate the delivery of incentives aligned with investment decisions faced by companies, including investments in electricity, fuels, products, and various other procurement decisions.

Respondents suggested that the current accounting approach does not always meaningfully convey the emissions reductions achieved by some activities within a corporate inventory. This serves to disincentivize some activities that may contribute to emissions reductions. This "incentives gap" was noted especially in the case of certain lower-carbon alternatives for fuels or products, where these products which may have lower emissions than fossil alternatives measured on a comparative life cycle basis may appear equal when the same when reporting combustion emissions within the inventory.

Some respondents asserted a need to focus on financial incentives, both internal and external to the company, and a recognition of how market-based approaches could facilitate the deployment of financial incentives and capital allocation towards decarbonization. Internal to the reporting company's decision-making process, respondents noted the role of market-based approaches in helping companies to access the lowest-cost options for mitigation decisions. External to the reporting company, respondents noted the role of market-based approaches in providing market signals and directing capital for the proliferation of lower-carbon alternative products. These respondents suggested that market-based approaches could increase demand

for low-carbon products and give suppliers access to larger markets to sell their low-carbon products. This additional revenue could catalyze the production and supply of lower-carbon products (including alternatives fuels). Additionally, some respondents suggested that market-based approaches could facilitate joint-investment in lower-carbon solutions from multiple companies by allowing reporters to recognize emissions reduction in their GHG inventories that result from decarbonization activities that are outside of the direct control of the reporting company.

Some of these respondents pointed to a perceived success of the market-based method in scope 2 as supporting rationale for why market-based approaches should be included for scope 1 and scope 3 emissions. Some defined success in this regard as having contributed to the development and growth of the renewable energy market over the last decade, citing that the emergence of the market-based method in the *Scope 2 Guidance* in 2015 created a financial incentive for reporting organizations to procure renewable energy credits that subsidized the development of clean electricity to reduce their reported scope 2 emissions. Some said that the main objective for incorporating market-based approaches in all scopes is to provide a mechanism that leads to the formation of markets that hastens and scales investment in or capital allocation towards decarbonization.

Further, some respondents suggested that in cases of limited traceability across supply chains, market-based approaches present a unique opportunity for the incentivization of climate-positive action and investment by companies. These respondents suggest that in the absence of market-based approaches, companies are forced to rely on average emission factors that have limited capacity to recognize the impact of interventions that contribute to emissions reductions within the pool of emitting activities from which the emission factor is derived.

C.3 Feedback on physical accounting

In contrast, some survey respondents pointed to different objectives that they believe should be achieved via the *Corporate Standard*. Specifically, these respondents said that a GHG inventory should remain limited to physical accounting. These respondents objected to using market-based approaches in a GHG inventory, with a focus instead on accounting for direct physical emissions in scope 1 and the physical traceability and allocation of indirect emissions via physical or average emission factors where necessary in scope 3.

Respondents suggested that an exclusively physical approach is necessary to properly facilitate certain intended uses of a GHG inventory. For example, some respondents suggested that the physical accounting of emissions and removals is necessary to evaluate potential mitigation interventions. Some respondents suggested that the use of GHG inventories to evaluate the process efficiency and climate-related financial risk of companies would be undermined or obscured by the introduction of market-based approaches. Some respondents suggested that physical accounting is necessary to establish accounting consistency.

Further, some respondents suggested that any interpretation of an inventory would be impeded by the introduction of market-based approaches. These respondents suggested that a GHG inventory is intended only to represent the GHG emissions caused by physical processes, and not a communication of GHG reduction or impact by a reporting entity. Some respondents suggested that the impact of certain interventions is best quantified, accounted for, and reported on through the approach established in the *Project Protocol*, and that results quantified using the project-based method should be reported separately from inventory results (scope 1, scope 2, and scope 3) as per the *Corporate Standard*. For additional technical feedback related to this topic, refer to section E.

C.4 Feedback on comparability

Comparability between organizations' inventories also surfaced within stakeholder feedback as a desired goal for an updated version of the *Corporate Standard* that is currently not being adequately achieved. Respondents suggested that the optionality and flexibility provided to companies in choosing consolidation approach, data, allocation methods, and calculation methods does not enable comparability across companies GHG inventories.

Some respondents suggested that comparability would be even further reduced through the introduction of new market-based approaches, by introducing even more variability in the accounting approach taken by each company. On the other hand, some respondents suggested that comparability would be better enabled by introducing a market-based approach(es) for scope 1 and scope 3 that requires dual reporting, as is required for scope 2 emissions in the *Scope 2 Guidance*. For additional feedback on dual reporting, refer to section G.

C.5 Feedback on alignment

Some respondents suggested that alignment of accounting requirements and reporting structures across various accounting initiatives should be a major objective of GHG Protocol. Respondents noted that the GHG Protocol serves an accounting basis for many programs and systems, and that in order to facilitate those programs and systems, GHG Protocol should be aligned with accounting approaches and requirements across the accounting ecosystem. Respondents made note of target-setting initiatives, reporting and disclosure programs, compliance markets, regulations, carbon markets, and other initiatives with which GHG Protocol accounting and reporting should align. Some respondents noted that some of these initiatives allow the use of various market-based approaches, and that in order to facilitate alignment with those initiatives, the GHG Protocol should allow reporting on market-based approaches. For additional feedback related to ecosystem collaboration, refer to section L.

D. Accounting and Reporting Principles

Introduction

During the development and revision of the *Corporate Standard*, in 2001 and 2004 respectively, GHG Protocol established GHG accounting and reporting principles that were derived in part from generally accepted financial accounting and reporting principles. They also reflect the outcome of a collaborative process involving stakeholders from a wide range of technical, environmental, and accounting disciplines. These principles are:

- **Relevance:** Ensure the GHG inventory appropriately reflects the GHG emissions of the company and serves the decision-making needs of users – both internal and external to the company
- **Completeness:** Account for and report on all GHG emission sources and activities within the chosen inventory boundary. Disclose and justify any specific exclusions.
- **Consistency:** Use consistent methodologies to allow for meaningful comparisons of emissions over time. Transparently document any changes to the data, inventory boundary, methods, or any other relevant factors in the time series
- **Transparency:** Address all relevant issues in a factual and coherent manner, based on a clear audit trail. Disclose any relevant assumptions and make appropriate references to the accounting and calculation methodologies and data sources used.
- **Accuracy:** Ensure that the quantification of GHG emissions is systematically neither over nor under actual emissions, as far as can be judged, and that uncertainties are reduced as far as practicable. Achieve sufficient accuracy to enable users to make decisions with reasonable assurance as to the integrity of the reported information.

For more detail on the GHG Protocol standard accounting and reporting principles, refer to the *Corporate Standard*, Chapter 1, page 8.

Feedback

Respondents offered feedback on how the current accounting approach for scope 1 and scope 3 emissions align with these accounting principles. Some respondents suggested that the current accounting approaches for scope 1 and scope 3 are reasonably successful in balancing the GHG Protocol principles, leading to a faithful, true, and fair account of a company's GHG emissions. Some of these respondents highlighted improvements that could be made to better meet the principles in practice, including:

- Expansion of existing standards to create more specific and actionable guidance, particularly related to scope 3, to support improvements to transparency and consistency.
- Making scope 3 reporting mandatory for *Corporate Standard* conforming corporate-level reporting to improve transparency, relevance, and completeness through increased coverage of reported emissions.

- Providing more clarity on data selection, promoting consistency and transparency through the selection of more standardized data sources.

Respondents in particular included several interpretations of the principle of accuracy. Some respondents suggested that accuracy was primarily related to the correct quantification of GHG inventories, as laid out in the *Corporate Standard*. Some respondents suggested that applications of the principle of accuracy should include both the correctness of quantification of inventory accounting as well as the mitigation quantification methods laid out in the *Project Protocol*. Similarly, some respondents suggested that accuracy within reporting would require the inclusion of all types of potential reporting measures, for example avoided emissions measures. Additionally, some respondents suggested that accuracy was more broadly focused on providing the necessary information to enable interpretation and decision-making based on the results of the inventory.

Some respondents suggested that the use of market-based approaches for scope 1 and/or scope 3 would improve the realization of the accounting principles and inform a more true and fair account of a company's emissions through the conveyance of additional information describing the company's procurement and operational choices. Some of these respondents suggested that completeness, accuracy, and transparency would be improved by expanding the scope 2 requirement for dual reporting of indirect emissions via the location-based and market-based methods, allowing companies to more comprehensively communicate their interventions. Some respondents particularly noted that accuracy could be improved in the case of scope 3 through the use of market-based approaches, suggesting that market-based estimates would be better aligned with procurement decisions and the influence of companies relative to their value chain partners. Other respondents suggested the current accounting approach within scope 1 and scope 3 emphasizes accuracy at the expense of transparency, completeness, and consistency, which would be enhanced by expanding accounting to include the impacts of interventions.

Some respondents suggested that in the case of fuels like biomethane or sustainable aviation fuel (SAF), the exclusive use of grid-average emission factors in inventory accounting would limit relevance, completeness, and accuracy of accounting. These respondents suggested that the lower lifecycle emissions associated with the use of these fuels relative to fossil-derived alternatives are not recognized in an inventory, thus reducing the realization of these accounting principles.

Finally, some respondents suggested that using market-based approaches would undermine faithful, true, and fair accounts of a company's GHG emissions by obscuring the physical reality of the impacts of a company's owned/controlled activities. Some of these respondents tied this concern to the current scope 2 approach of dual location-based and market-based reporting, suggesting that this dual reporting is often not followed in practice, allowing for reduced rather than increased transparency and consistency.

E. Accounting Approaches: Integrating Inventory and Project/Intervention Accounting

Introduction

The GHG Protocol has produced standards and guidance for companies and organizations to account for GHG emissions from their operations and value chains and GHG impacts of their actions by leveraging two different accounting approaches: inventory accounting and project/intervention accounting.

Inventory accounting, also known as attributional accounting, tracks GHG emissions and removals within a defined organizational and operational boundary over time. It is the primary method used by companies and other organizations to report emissions from their operations and value chains. Its rules and procedures are detailed within several GHG Protocol standards and guidance including the GHG Protocol *Corporate Standard*, the *Scope 2 Guidance*, the *Corporate Value Chain (Scope 3) Standard*, and the upcoming *Land Sector and Removals Guidance*.

The inventory accounting approach requires reporting organizations to define clear organizational and operational boundaries, within which emissions are quantified and organized across scope 1, scope 2, and scope 3. Changes in corporate emissions are calculated by comparing changes in the company's emissions inventory over time relative to a base year. Inventory accounting provides the foundation for target- and goal-setting programs (e.g., Science-Based Targets initiative) and mandatory climate disclosure rules (e.g., European Sustainability Reporting Standards, California Climate Corporate Data Accountability Act, etc.).

Project/intervention accounting, also known as consequential accounting, estimates the impacts or changes in GHG emissions resulting from specific projects, actions, or interventions relative to a counterfactual baseline scenario. It is the primary method used to evaluate the emission effects of projects by comparing emissions and removals that happen in the project scenario with an estimate of what would have most likely happened in the absence of the intervention. The project-based accounting approach evaluates emissions impacts of the project or intervention in question, without regard to the reporting company's operational or organizational inventory boundary. Its rules and procedures have been detailed in the *GHG Protocol for Project Accounting*, its sector-specific supplements such as the *Guidelines for Quantifying GHG Reductions from Grid-Connected Electricity Projects* and the *Land Use, Land-Use Change, and Forestry (LULUCF) Guidance for GHG Project Accounting*, and the *Policy and Action Standard.*

Project-based accounting is used widely by carbon market programs to quantify project-level GHG reductions and removals. The *Project Protocol* and other project-level methods can also be used for companies to understand and report the GHG impacts of individual projects or interventions. For more detail on the differences between inventory and project/intervention accounting, refer to this comparative review and section 9.4, Accounting for scope 3 emissions and reductions over time, in the *Scope 3 Standard* (p. 107).

GHG Protocol does not mix these two types of accounting within scope 1, scope 2, and scope 3 inventory accounting and reporting. Under the *Corporate Standard*, GHG impacts of actions using project/intervention methods are reported separately within the inventory report (for more details, refer to section G).

E.1 Feedback on the use of inventory and project/intervention accounting

Respondents gave varying feedback on whether and how project/intervention accounting approaches should or could be integrated into the accounting approach of the GHG Protocol *Corporate Standard*. Some respondents suggested that project-based accounting does not currently play a meaningful role in organization-level target- and goal-setting programs or disclosures that rely primarily on GHG inventories. However, some respondents expressed interest in accounting for projects and interventions that are perceived to have an overall benefit on the climate and in having these interventions included in GHG inventory reporting to incentivize these interventions. Other stakeholders suggested that while both accounting approaches are important for characterizing the overall impacts of corporate activity, the differences in quantification approaches require inventory and project/intervention accounting to be used in parallel rather than in combination.

Notably, many respondents expressed uncertainty about whether integration of the two approaches is technically possible and about the nature of the distinction between the two approaches. These respondents highlighted the role of GHG Protocol in providing clarity regarding guidance and definitions on these topics.

E.2 Feedback on the integration of inventory and project/intervention accounting

Some respondents suggested that project/intervention accounting should be integrated into the existing inventory accounting approach of the GHG Protocol *Corporate Standard* in order to better reflect the impacts of mitigation interventions. These respondents often pointed to a perceived inability of inventory accounting to deliver incentives to organizations to pursue mitigation interventions in all scenarios. Some respondents highlighted this point through the example of grid-delivered fossil-alternative fuels (e.g. biomethane or recycled-carbon fuels), where a project/intervention accounting comparison of the fuels relative to fossil-based alternatives may demonstrate lifecycle emission reductions, but the reporting of the scope 1 emissions associated with the combustion of an equivalent amount of these recycled-carbon or fossil fuels would be indistinguishable using the current *Corporate Standard* inventory approach.

For respondents in favor of integrating project/intervention and inventory accounting within the *Corporate Standard*, several approaches and considerations were suggested:

- Some respondents suggested that project/intervention accounting approaches may only be appropriate in the case of indirect emissions (scope 2 and scope 3) but not in the

case of direct emissions (scope 1). For additional information on scope-specific feedback, refer to section F.

- Some respondents suggested that project/intervention accounting should be incorporated into inventory reporting via subtracting or "netting" certain interventions against the reported inventory totals. Respondents suggested that this approach could facilitate or align with some target-setting or net-zero initiatives, especially related to residual or hard-to-abate emissions in certain sectors.
- Some respondents suggested that the most appropriate calculation methodology should be evaluated on a case-by-case basis, and that it is the role of the GHG Protocol to define how those cases should be integrated into an inventory. Specifically, respondents highlighted that certain instruments, such as offsets or insets, rely primarily on project/intervention accounting.
- Some respondents suggested that any market instrument used to report reductions of emissions within an inventory should make use primarily of project/intervention accounting to better substantiate that the reported emission reductions in the inventory correspond to atmospheric emissions reductions.
- Some respondents suggested that the use of project/intervention accounting would allow for more accurate reporting of scope 3 category 11 (Use of sold products) by integrating not just the emissions associated with the use phase of a product but also the avoided or removed emissions associated with the use phase.
- Some respondents suggested that overall data accuracy in scope 3 could be improved through the integration of project/intervention accounting, via the integration of project-specific assumptions and factors rather than a reliance on the use of global-average factors.
- Some respondents suggested that project/intervention accounting can be incorporated into inventory accounting with constraints to ensure that baseline scenarios are as verifiable as possible.

Some respondents also suggested that project/intervention accounting is already being used by some reporters in practice within scope 3. These respondents suggested this entanglement in the practice of scope 3 reporting, where data limitations or incorrect application of the standard may lead to the practice of using project/intervention accounting within the scope 3 inventory.

E.3 Feedback on the separation of inventory and project/intervention accounting

Some respondents suggested that project/intervention accounting should not be integrated into the existing inventory accounting approach of the GHG Protocol *Corporate Standard*. These respondents often suggested that intervention accounting is fundamentally inconsistent with inventory accounting, specifically that project/intervention assessments relative to a projected baseline are definitionally incompatible with the inventory assessments of attributable emissions and removals. Some respondents highlighted text from the *Project Protocol* that the document "…is not designed to be used as a mechanism to quantify corporate or entity-wide GHG reductions; the Corporate Accounting Standard should be used for that purpose". Further, some

respondents highlighted that inventory and project/intervention accounting are currently separated because they seek to accomplish different objectives, and these respondents expressed concern that an attempt to integrate the two approaches would only muddle the interpretation of any outputs and fail to adequately accomplish the objectives of either approach.

Among respondents that favored a continuation of the separate approach to inventory and project/intervention accounting, many cited the necessity of selecting a counterfactual scenario as part of intervention accounting as a primary reason for exclusion from the *Corporate Standard* approach. Some respondents suggested that even with clear guidance, selecting a counterfactual scenario for analysis is an unavoidably arbitrary decision that would introduce an unacceptable amount of variance and uncertainty into inventories. Some respondents expressed concern that reporters would be incentivized to select counterfactual scenarios that would be most favorable to them by overestimating baselines to bolster reduction claims. Some respondents suggested that even for well-intentioned reporters, it is ultimately impossible to accurately assess what would have happened in the absence of an intervention. Further, some respondents expressed concern that assumptions related to counterfactual baseline selection may be invalidated as system changes are accomplished over time. In total, many of these respondents expressed concern that these assumptions would lead to an increase in the perception of greenwashing.

Some respondents that were opposed to the integration of project/intervention accounting into inventory accounting still acknowledged the value of project/intervention accounting and the potential relevance for use in target-setting initiatives. Some respondents suggested that project/intervention accounting should be used only for contextual claims, which can be helpful in providing a larger narrative around inventory reporting (e.g. contextualizing changes in year-to-year scope quantities relative to the company's growth). Some respondents suggested that reporting requirements should be amended to better highlight how the inventory and project/intervention accounting methods can be used together to provide a more complete reporting of corporate impact. For more information on the inventory and emissions report, refer to section G.

F. Accounting Approaches: Scope 1 and Scope 3 Accounting

Introduction

Scope 1 emissions are direct emissions released from sources owned or controlled by the reporting company. Scope 3 are indirect emissions that occur in the reporting company's value chain (other than indirect emissions from purchased energy which are accounted for in scope 2). Market-based approaches are not included for scope 1 or scope 3 accounting. Stakeholders provided varied feedback on how scope 1 and/or scope 3 accounting should or should not be amended to accommodate market-based approaches.

F.1 Feedback in favor of integrating market-based approaches in scope 1

Some respondents suggested that scope 1 accounting and reporting requirements should be updated to integrate market-based approaches. For many of these stakeholders, a primary motivation for such a change would be the objective of delivering positive incentives for companies to catalyze further investment in decarbonization. These stakeholders suggested that by not allowing market-based approaches, reporting companies are forced to use average or system-wide emission factors (analogous to the location-based method in scope 2) in cases of limited traceability. Feedback in favor of Scope 1 integration also featured in key themes raised by those respondents who submitted proposals separately. For more information, refer to the web-based resource here where proposals submitted are publicly available.

Some stakeholders used the example of biomethane or recycled-carbon fuels that are injected into and distributed via a gas pipeline that is used primarily to deliver fossil gas. These respondents suggested that reporters that have entered into an agreement with a distributor to purchase the environmental attributes associated with the biomethane or recycled-carbon fuels should be able to report the scope 1 emissions associated with the combustion of the corresponding gas sourced from the grid based on the purchased environmental attributes. In the absence of this reporting option, respondents suggested that reporters would be left with no economically-feasible alternatives for decarbonization of these scope 1 emissions, or would be forced to pursue segregated delivery of the fossil alternative fuels (e.g. through trucking) which respondents suggested would unnecessarily raise the price and life-cycle emissions associated with use of these fuels. Some respondents suggested that early adopters that choose to invest in these types of alternative fuels should be provided a pathway within inventory accounting to reflect the impact of replacing the use of fossil fuels.

Some respondents suggested that market-based approaches should be integrated into scope 1 accounting in order to encourage sectoral or system-wide decarbonization. These respondents suggested that the purchase of environmental attributes contributes to the financial case for expanded capacity of alternative, lower-carbon fuels, and that not allowing for recognition of those purchases within the inventory will curtail corporate investment, thus limiting investment in the growth of these alternatives. These respondents also pointed to the 'free rider problem',

suggesting that in the absence of the market-based approaches, each reporting company will be forced to use average or system-wide emission factors, thus incentivizing each reporter to not pursue individual action towards the decarbonization of that system. These respondents suggested that in the absence of market-based approaches, decarbonization for systems like the gas grid would need to be pursued and steered from the top-down (e.g. via regulation and distributor action), which some respondents suggested would be a less-efficient decarbonization pathway than a pathway driven by bottom-up investments from corporate reporters.

Some respondents suggested that the physical and regulatory context of each country or locality should be used to determine whether market-based approaches are appropriate within scope 1. Some respondents suggested that regulation in certain localities defines a legal right to claims associated with environmental attributes that must be recognized within inventory reporting. Some respondents suggested that market-based approaches should be allowed in circumstances in which reporters have no local supply of alternatives to fossil fuels as inputs into their operations. Other respondents suggested that market-based approaches should be recognized within the inventory wherever chain of custody or certificate markets are used to transact goods.

Finally, some respondents highlighted a desire for consistency in reporting structure across scopes. Specifically, stakeholders suggested that as the market-based method for scope 2 reporting exists, similar structures should be introduced into the other scopes to encourage consistency in reporting. Similarly, some respondents highlighted the perceived analogous case of the traceability constraints and corresponding use of contractual instruments for scope 2 reporting associated with electricity grids to that of scope 1 reporting and the use of natural gas grids, suggesting that a similar market-based method should be introduced for scope 1.

F.2 Feedback opposed to integrating market-based approaches in scope 1

Some respondents suggested that market-based approaches should not be integrated into scope 1 accounting. Some respondents suggested that scope 1 emissions are definitionally incompatible with market-based approaches, given that scope 1 are direct emissions and should therefore not be subject to any adjustment or allocation approaches. Similarly, some respondents suggested that the integration of market-based approaches would obscure the physical reality that scope 1 reporting is intended to reflect.

Some respondents recognized the intention of incentivization that some proponents of market-based approaches in scope 1 are seeking, but suggested that those incentive structures may best be introduced separately from or in addition to existing scope 1 accounting and reporting practice. Specifically, these respondents suggested that the impact of (and decision whether to use) instruments such as biomethane certificates may be best assessed through the use of project/intervention accounting, not via the use of inventory accounting in scope 1. These respondents suggested that integrating elements of project/intervention accounting that are often central to analysis of fuel alternatives (e.g. comparisons relative to fossil alternatives or characterizations of avoided emissions) into scope 1 accounting would muddle the results of the

inventory and lead to difficulty in meaningfully interpreting or making use of the reported emission estimates.

Some respondents expressed concern that elements of some proposed market-based approaches would essentially amount to allowing offsetting within scope 1 through the incorporation of avoided emissions within inventory reporting. Some respondents expressed concern that any approach that allowed for adjusting or offsetting emissions within the scopes would only obscure the realities of emissions and removals resulting from corporate activity, rather than providing transparency. Further, some stakeholders expressed concern that this approach could actually decrease rather than increase decarbonization by obscuring emissions, making it more difficult to identify mitigation opportunities, or by decreasing ambition for decarbonization without a corresponding decrease in emissions.

Finally, some respondents suggested that integrating market-based approaches into scope 1 may increase the burden for many reporters by increasing the complexity of reporting requirements. These respondents suggested that the potential increase in decarbonization by the subset of reporters engaging in market-based approaches in scope 1 may be outweighed by the increased barrier-to-entry to reporting for all other potential reporting companies and organizations.

F.3 Feedback in favor of integrating market-based approaches in scope 3

Some respondents suggested that scope 3 accounting and reporting requirements should be updated to integrate market-based approaches. Some respondents suggested that the same arguments about the necessity of incentives for scope 1 accounting that were presented in section F.1 would also apply to the case of scope 3, however some respondents highlighted additional considerations that are unique to scope 3. Specifically, some respondents suggested that the nature of scope 3 emissions is well aligned with the incentive structure that could be introduced via the integration of market-based approaches. Some of these respondents suggested that achieving reductions in scope 3 emissions requires coordination and co-investment to achieve reductions across a value chain, which could be facilitated by the financing directed from market-based approaches. Additionally, some of these stakeholders highlighted situations in which there may be misalignments between the company or companies in a value chain that are most actively seeking decarbonization and the company or companies in that value chain that are most in control of the levers of decarbonization. In this case, these stakeholders suggested that market-based approaches could be an effective method for transferring ambition and investment between these companies. Some respondents also suggested that the introduction of market-based approaches to scope 3 would catalyze suppliers to pursue new and innovative decarbonization pathways in order to seek a competitive advantage in the marketplace.

Some respondents purported that there is already an existing use of market-based approaches in scope 3, either in theory or in practice. Some respondents thought that in theory the nature of connection in a value chain is through financial and contractual relationships, and therefore

market-based approaches are well aligned with scope 3. Some of these respondents pointed to the existing practice of estimating scope 3 emissions using economic factors as being aligned with market-based approaches. Additionally, some respondents asserted that some reporting companies are already using market-based approaches in scope 3, such as in the case of scope 3 claims associated with upstream use of the electricity that is estimated using the scope 2 market-based method. These stakeholders suggest that given the theoretical alignment and practical ambiguity, further guidance from the GHG Protocol on the correct application of market-based approaches in scope 3 would provide clarity for reporters.

As with the feedback related to scope 1, some stakeholders highlighted a desire for consistency in reporting structure across scopes, suggesting that as the market-based method for scope 2 reporting exists, similar structures should be introduced into the other scopes to encourage consistency in reporting. Some respondents additionally suggested that because scope 2 and scope 3 are both categories for the reporting of indirect emissions, there is an even greater justification for alignment of reporting structures across the two scopes.

Some stakeholders suggested that the introduction of market-based approaches could help alleviate the difficulty that some reporters face in collecting adequate data for scope 3 reporting. These respondents suggested that the introduction of market-based approaches would allow for expanded opportunities for collaboration with value chain partners and that this collaboration would facilitate improved data sharing and thus an improvement in the overall quality of reporting.

Finally, some respondents suggested that market-based approaches could be integrated into scope 3 via the introduction of additional categories beyond the existing 15 scope 3 categories. Respondents suggested that the addition of further scope 3 categories could allow for more comprehensive reporting of value chain emissions while still allowing necessary separation of concepts like emission reductions, removals, and avoided emissions from the current scope 3 emissions inventory. For additional information on stakeholder feedback related to scope 3, refer to the scope 3 survey summary.

F.4 Feedback opposed to integrating market-based approaches in scope 3

Some respondents said that market-based approaches should not be integrated into scope 3 accounting. These respondents suggested that it would obscure the reporting of a company's inventory by basing the reporting on purely financial relationships rather than physical relationships. Some respondents expressed concern that the integration of market-based approaches could risk carbon lock-in if reported emissions reductions are not aligned with realized reductions in emissions to the atmosphere. Some respondents expressed concern that reductions reported by companies using market-based approaches may not be an accurate reflection of the impact of that company's interventions. Conversely, some respondents suggested that any quantification of impact should not be included within inventory accounting and would be better represented through project/intervention accounting reported outside of the scopes.

Finally, some respondents noted that scope 3 reporting is already difficult for many reporters, both in sourcing the quantity and quality of data necessary to report accurately. These respondents expressed concern that introducing added reporting complexity via the introduction of market-based approaches would only add to the difficulty and burden of reporting rather than easing it.

G. Reporting Structure: The GHG Inventory and GHG Emissions Report

Introduction

Each GHG Protocol standard includes requirements and guidance on the information to be reported as part of a GHG inventory report, which includes both required and optional information (corresponding to 'shall', 'should', and 'may' statements).

The *Corporate Standard* defines a **GHG emissions report**, which includes not only the required reporting of GHG emissions within scope 1, scope 2, and scope 3, but also optional reporting of additional information, such as:

- A description of performance measured against internal and external benchmarks.
- Relevant ratio performance indicators (e.g. emissions per kilowatt-hour generated, tonne of material production, or sales).
- An outline of any GHG management/reduction programs or strategies.
- Information on any GHG sequestration.
- Information on offsets that have been purchased or developed outside the inventory boundary, subdivided by GHG storage/removals and emissions reduction projects.
- Information on reductions at sources inside the inventory boundary that have been sold/transferred as offsets to a third party.

Additionally, the GHG Protocol *Scope 2 Guidance*, includes additional reporting requirements related to the introduction of the location-based and market-based methods in scope 2:

- Scope 2 required reporting:
    - For companies with operations in markets that do not provide product or supplier-specific data or other contractual instruments, only one scope 2 result shall be reported, based on the location-based method
    - For companies with any operations in markets providing product or supplier specific-data in the form of contractual instruments (markets are increasingly developing and refining purchasing options), companies shall account and report scope 2 emissions in two ways and label each result according to the method: one based on the location-based method and one based on the market-based method.
- Scope 2 optional reporting:
    - Consistent with Chapter 8 of the *Corporate Standard,* companies may separately report an estimation of GHG emissions avoided from a project or action. This quantification should be based on project-level accounting, with methodologies and assumptions documented (including to what the reduction is being

compared). See the *GHG Project Protocol* and *GHG Protocol Guidelines for Grid-Connected Electricity Projects* for example methodologies.[1]

These requirements provide the current framework for reporting aligned with the *Corporate Standard*, namely the reporting of scope 1 emissions, scope 2 emissions using the location-based method and market-based method (as applicable, dual reported), scope 3 emissions, and additional categories and information to provide further context as part of the emissions report.

The GHG Protocol *Scope 3 Standard*, similar to the *Corporate Standard*, includes the following optional reporting elements, in addition to reporting of scope 3 emissions:

- Information on project-based GHG reductions calculated using the project method (e.g., using the *GHG Protocol for Project Accounting*), reported separately from scope 1, scope 2, and scope 3 emissions
- Information on avoided emissions (e.g., from the use of sold products), reported separately from scope 1, scope 2, and scope 3 emissions
- Information on purchases of GHG reduction instruments, such as emissions allowances and offsets, from outside the inventory boundary
- Information on reductions at sources inside the inventory boundary that have been sold/transferred as offsets to a third party

These requirements provide the current framework for reporting aligned with the *Corporate Standard*, namely the reporting of scope 1 emissions, scope 2 emissions using the location-based method and market-based method (as applicable, dual reported), scope 3 emissions, and additional categories and information to provide further context as part of the emissions report.

G.1 Feedback in favor of dual reporting

Some respondents suggested that if market-based approaches are integrated into scope 1 and/or scope 3, the dual reporting of emissions using the location-based and market-based methods employed in scope 2 should serve as a template for reporting in scope 1 and/or scope 3.[2] Some respondents highlighted a desire for consistency in reporting as a driver for this suggestion. Other respondents suggested that dual reporting allows for better comparability between reporters, as comparisons between market-based and location-based estimates are perceived as less accurate than market-to-market or location-to-location comparisons. Other respondents suggested that avoiding double counting was a primary motivation for dual reporting requirements.

[1] Note that listed requirements and optional information are not comprehensive. For the full list of requirements, recommended and optional information, refer to the *Scope 2 Guidance*, Chapter 7.

[2] Note that the *Scope 2 Guidance* defines the location-based and market-based methods only in the context of scope 2.

Among respondents that suggested the expansion of dual reporting to scope 1 and/or scope 3, there were mixed suggestions on what elements of the reporting should be made mandatory or optional. Some respondents suggested that both market-based and location-based reporting should be mandatory in all cases to encourage the greatest degree of transparency and completeness in reporting, as well as to keep the two approaches separate for appropriate interpretation and use. Other respondents suggested that one method should serve as the default approach, i.e. that it be required reporting in all cases with the other method as an optional inclusion, however some respondents suggested that this default should be the location-based method while others suggested the default should be the market-based method.

G.2 Feedback opposed to dual reporting

Some respondents were opposed to dual reporting because they instead favor the current approach in which a physical basis for emissions reporting is used within scope 1 and scope 3, and any contractual instruments or compensating measures can instead be reported separately from the scopes for context within the emissions report. These respondents suggested that these contextual claims could still be used in target-setting initiatives or in other contexts without the need for direct integration into inventory accounting. These respondents suggested that this approach of separate reporting could achieve the objective of creating incentives expressed by some proponents of market-based approaches without obscuring the physical impact of corporate activities. Further, some of these respondents suggested that this would make the accounting approach more transparent as well as more globally applicable, as some types of market-based approaches are only possible in the limited geographies in which contractual instruments are available for purchase.

G.3 Feedback on integrating market-based approaches in the inventory

For some respondents, the reason for opposing dual reporting was a desire to see market-based approaches integrated directly into the scopes without the introduction of any additional reporting categories. For these respondents, there was a suggestion that this approach would achieve the highest impact in terms of incentivizing the proliferation of decarbonization through market-based approaches and avoiding potential confusion via the introduction of new reporting categories. Some respondents expressed concern with this approach, suggesting that any reporting of market-based estimates without a corresponding physical or location-based estimate would not adequately capture the overall emissions impact of the company's activities. Further, some respondents expressed a concern that exclusive market-based reporting without a corresponding physical or location-based estimate would obscure impact by limiting the types of data that are shared across the value chain for scope 3 reporting.

G.4 Feedback on the addition of an impact category

Some respondents suggested that an additional reporting category should be formally introduced that quantifies GHG impact of actions using a project/intervention accounting approach. Respondents suggested that a category that makes use of project/intervention accounting rather than inventory accounting may be a better aligned with the objective of creating incentives for organizations to invest in interventions that result in the most climate-positive impact. For respondents that suggested that inventory and project/intervention accounting be kept separate (refer to section E for additional feedback on this topic), the addition of an impact category was seen as a way to integrate the outcomes of project/intervention accounting into the emissions report without direct integration into the inventory accounting. This feedback also featured in key themes raised by those respondents who submitted proposals separately. For more information, refer to the web-based resource here where proposals submitted are publicly available.

Some respondents suggested that an impact category would provide important context for a company's overall impact through the inclusion of topics such as avoided emissions, but that additional guidance would need to be provided to explain how the impact claims can be understood relative to the inventory claims. Specifically, some respondents suggested that the use of counterfactual scenarios in project/intervention accounting would create added complexity and that guidance is needed around what evidence is necessary and what narrative claims are possible from intervention reporting. This includes providing safeguards against cherry picking, i.e., reporting only the positive impacts of actions rather than both positive and negative impacts, or only reporting on positive actions rather than negative actions.

Some respondents emphasized that wherever direct emissions are measurable, those emissions should always be reported without adjustment based on impact assessments. These respondents expressed concern that if impact assessments were not reported separately, it would diminish corporate responsibility for reducing value chain emissions and instead create a movement towards reducing only the easiest-to-abate emissions, rather than focus on decarbonizing/transforming value chains in line with net zero goals. However, respondents suggested that an impact category would provide useful information that could be reported in a separate category to be leveraged for target-setting, net-zero, or beyond-value-chain-mitigation claims. Some respondents further suggested that the introduction of an impact category would unlock investment to flow towards decarbonization in areas that would otherwise not receive corporate investment, such as decarbonization of residential homes.

Among the respondents who suggested the introduction of an impact, performance, or project/intervention category, several quantification approaches were suggested:

- Some respondents suggested that an impact category be introduced as an additional reporting category for each scope to assess the impact of interventions related to the emissions characterized within that scope (e.g. scope 2 location-based, scope 2 market-based, scope 2 impact).

- Some respondents suggested that it would be inefficient or impossible to characterize impacts relative to only one scope, so that an emissions report should contain only one overall impact category.
- Some respondents suggested that impact should be calculating by quantifying the difference between market-based and location-based estimates.
- Some respondents suggested that project/intervention accounting should be used to characterize annual emission reduction impacts, with an inventory analysis conducted on a less frequent interval to provide context for the annual project/intervention impact estimates and to ensure that the annual emission reduction estimates correspond to a reduction trend in the inventory.
- Some respondents suggested that impact could also be measured by tracking emissions intensity relative to a base year.

H. Instrument Definitions

Introduction

The survey identified and sought feedback on several types of market instruments. The background memo for the survey provided definitions for the following examples of market-based instruments that have been developed or proposed:

- **Project-based crediting:** Credits are quantified mitigation outcomes of projects or broader interventions which are credited for GHG claims to be transferred between entities. Credits are quantified using project-based accounting methods in which emission reductions or removals resulting from projects or interventions are quantified relative to counterfactual baseline scenarios. Credits can be differentiated in relation to the company's value chain:
    - **Offset credits**: generated from projects that reduce emissions or increase removals outside the reporting company's value chain
    - **Inset credits**: generated from projects that reduce emissions or increase removals within the reporting company's value chain (using the same quantification methods as offset credits)
- **Supply shed/value chain interventions:** Projects/interventions that reduce emissions or increase removals inside the reporting company's supply shed or sourcing area and are accounted for using scope 3 inventory methods (e.g., using emission factors derived from primary data specific to individual suppliers that implement interventions)
- **Certification/chain-of-custody models**
    - **Mass-balance certification**: Purchases of certificates in which materials or products with a set of specified characteristics are mixed with materials or products without that set of characteristics
    - **Book-and-claim certificates**: Purchases of certificates in which environmental attributes are separated from the products the company physically consumes

Feedback

Respondents provided feedback related to the provided definitions and categorizations. Some respondents suggested that the term "market-based" is too broad or too ill-fitting to properly contain the breadth of topics covered within the survey questions and within the real-word systems that the questions pertained to. Some respondents suggested that more attention or differentiation is needed between project-based crediting and chain-of-custody models, and that these two approaches are too distinct in approach and objective to fit within one umbrella term. Some respondents suggested that the use of the word "market" within the overall terminology is a misnomer, especially for certain applications, and that further differentiation is needed to distinguish whether a market is truly being employed or whether trading, allocation, attribution, or other terminology may be more applicable. Some respondents additionally suggested that the term "market-based" has been inextricably linked with greenwashing, and that new terminology should be explored.

Some respondents further suggested that there is misalignment or confusion between different uses of "market-based" terms, and that clarity and common terminology must be established as a prerequisite for clear guidance and implementation of guidance on this subject matter. For example, some confusion was expressed related to the differentiation between the scope 2 'market-based method', a specific approach for quantifying scope 2 emissions, and 'market-based approaches' or 'market-based accounting', which are broader terms that are sometimes applied in other contexts. This confusion or misalignment was expressed throughout the survey feedback, where similar terms were often used interchangeably or in different contexts.

Additionally, some respondents provided feedback on the definitions provided for the five specific instruments highlighted above. Some respondents suggested that insets were not adequately defined and that the use of the term throughout the GHG accounting ecosystem is inconsistent and lacking in clear boundaries. Some respondents suggested that supply shed approaches, as defined within the memo, are inappropriately termed as a market-based approach and should be instead viewed as a means to allocate emissions within scope 3. Some respondents suggested that the use of the term "certification" within the context of mass balance was inappropriate, suggesting that certificates and certification are distinct concepts that should not be used interchangeably. Further, some respondents also suggested that mass balance should not be characterized as a market-based approach, citing the connection to physical traceability across the value chain as a means of distinguishing the approach. Additional feedback on the definition of mass balance suggested that the presented definition was overly simplified relative to practical application of the concept and that greater attention is needed on the implied market boundary. Finally, some respondents suggested that mass balance and book-and-claim can often be linked in practical application, and that a clear definition and distinction is necessary to avoid confusion between the two approaches in practice.

Overall, some stakeholders suggested that it is the role of the GHG Protocol to provide clear definitions and differentiations for these terms to establish a common terminology for the GHG accounting ecosystem. Some respondents suggested however that more research is needed to better identify and define the range of existing and possible instruments. To this point, some stakeholders suggested that the GHG Protocol should not be overly prescriptive on the definitions or application of individual instruments, suggesting that the terminology or application of instruments may evolve if accounting and reporting requirements are contingent on definitions and categorization. These stakeholders suggested that rather than focusing on definitions or guidance for established instruments, the GHG Protocol should instead provide guidance based on the underlying accounting principles and concepts and then allow for interpretation of whether an existing instrument is aligned with those principles.

I. Instruments and the GHG Inventory and GHG Emissions Report

Introduction

Survey respondents were asked how each of the types of market instruments should be utilized in GHG accounting, reporting, or target setting. Respondents provided a variety of feedback related to the use of instruments in the inventory (i.e. scopes) and emissions report. Much of the feedback and arguments provided were similar across instruments or situations. To avoid duplication across all combinations of instruments, scopes, reporting options, and sectors, the feedback below is presented first in a generalized format and then as instrument- or situation-specific feedback where applicable. Feedback on specific criteria or safeguards that were suggested as necessary design elements for a system using instruments is included in section J.

The feedback in this section first presents the feedback in favor of including one or more types of instruments in the inventory, then presents the feedback against including one or more types of instruments in the inventory and instead reporting them separately, and finally presents feedback favoring no role for instruments in the inventory. The subsection related to feedback in favor of separate reporting includes feedback that was provided in favor of separate dual reporting, separate reporting towards target-setting, and separate reporting exclusively for making general claims. This feedback is combined because of a large degree of overlap in the narrative feedback.

I.1 Feedback in favor of reporting in the inventory

General Feedback

Among respondents that expressed interest in instruments being reported within the scopes, many suggested that a primary reason for this inclusion would be the decarbonization incentives that could be provided to reporting organizations and towards the promotion of the lower-carbon solutions that the instruments are seeking to characterize. Some respondents suggested that many companies are facing an inability to implement necessary interventions for decarbonization, either because of the cost of decarbonization or because of a lack of direct control over the sources of emissions. These respondents suggested that the use of instruments would allow for the introduction of more cost-effective decarbonization options for reporters while simultaneously directing investment towards those with direct control over emission sources. These respondents suggested that allowing for collective decarbonization action via the pooling of investment through instruments would allow a market to achieve overall more efficient decarbonization than a requirement for individualized decarbonization interventions by each company. Respondents suggested that this overall efficiency would result in more decarbonization in total across a market or sector.

Additionally, some respondents suggested that the inclusion of instruments would increase the overall transparency of corporate reporting. Some of these respondents suggested that the introduction of dual reporting in scope 1 and scope 3, analogous to the current dual reporting

approach in scope 2, would improve transparency for all reporters and would create better consistency in reporting.

Scope and instrument-specific feedback

Some respondents suggested that the nature of the GHG claim being characterized by a specific instrument (e.g. emission reduction, removal, or avoided emission) should be the focus in determining suitability rather than the instrument type. Specifically, some respondents suggested that emission reductions or removals should be reported within the scopes, but that avoided emissions claims may not be suitable for inventory reporting. This feedback often aligned with distinctions between project crediting and traceability or chain-of-custody models. Some respondents suggested that characterizations of avoided emissions or project-based assessments through project-crediting instruments like offsets and insets could obscure emissions reporting if reported in the scopes, rather than provide additional transparency. Additionally, some respondents cited a similar concern of obscuring emissions for certain chain-of-custody models like book-and-claim if there is the perception within a specific market of a low physical link to the physical distribution of the product within the value chain. However, many respondents suggested that chain-of-custody models are particularly suitable for inventory reporting. This feedback also featured in key themes raised by those respondents who submitted proposals separately. For more information, refer to the web-based resource here where proposals submitted are publicly available.

The respondents in favor of chain-of-custody models cited several reasons for this suitability, including:

- a suggestion that chain-of-custody models are traceability and/or allocation mechanisms well aligned with existing practices within the GHG Protocol *Corporate Standard* for establishing traceability or allocating emissions from shared sources,
- a perception of precedent established by the market-based method in scope 2 that some respondents suggest should be emulated with similar chain-of-custody models in scope 1 and/or scope 3,
- a suggestion that in certain geographies existing chain-of-custody models exist to transfer legal rights to attribute claims which should be aligned and reflected through inventory reporting,
- a suggestion of existing practice of using chain-of-custody models for some existing local and global reporting programs that the GHG Protocol should seek to align with,
- a suggestion that with the introduction of appropriate safeguards the distinction between physical consumption and chain-of-custody supported claim becomes an arbitrary distinction.

Some of the feedback provided on the suitability of instruments for use within inventory accounting was related to use within scope 3. In general, some respondents cited overall suitability for instrument use within scope 3 due to the perceived lack of full, physical traceability and the indirect nature of scope 3 emissions. These respondents suggested that instruments would provide a mechanism for co-investment in decarbonization in fragmented or dynamic value chains. Some respondents suggested that inset credits would be suitable for scope 3 reporting (often suggesting suitability as opposed to offset credits) because of this value chain focus. These respondents suggested that the use of inset credits would result in necessary value chain decarbonization that would be aligned with observable GHG reductions at the reporting company over time.

Similarly, some respondents suggested that value chain interventions, such as supply shed, would promote collaboration for value chain decarbonization. These respondents suggested that the use of the supply shed concept would be more practical for reporting companies, often allowing for reporting to move beyond company-specific, input-output footprinting models.

Additionally, some respondents suggested that chain-of-custody models are the most suitable for scope 3 reporting, often citing the connection between scope 3 and scope 2 as categories for indirect emissions. These respondents therefore suggested that the scope 2 approach for using chain-of-custody models within the market-based method should also be applicable in the scope 3 context.

Some of the feedback provided on the suitability of instruments for use within inventory accounting was related to use within scope 1. Some respondents suggested that all instruments should be allowed to be reported in all scopes to provide as many pathways as possible for decarbonization. Some respondents suggested that this would include the reporting of offsets in scope 1, sometimes limiting this use case to sectors with hard-to-abate scope 1 emissions. Other respondents suggested that chain-of-custody models should be suitable for scope 1 accounting, especially for fossil-alternative fuels distributed through a common carrier pipeline. For additional feedback related to this use case, please see section I.4.

I.2 Feedback in favor of reporting separately from the inventory

General feedback

Among respondents that favored instruments being reported separately from the scopes or from the inventory, many suggested that instrument claims contain useful information for context or target-setting. However, for a variety of reasons these respondents suggested that the instrument claims should be kept separate from GHG inventory reporting. These reasons included:

- That inventory accounting should reflect primarily physical emissions, both direct and from the value chain.
- That some instruments may be less rigorous or not as traceable as is needed for credible inventory claims.
- That more academic research is necessary to understand the effectiveness of instruments and conditions necessary for creating effective implementation.
- That project/intervention accounting is inconsistent with an inventory but should be reported separately within the emissions report for transparency.
- That instruments should be reported separately when decoupling environmental attributes from the products that a company physically consumes.

Even among respondents that expressed interest in reporting instruments separately for context in the emissions report or for target-setting claims, there were some hesitations expressed about the breadth of reporting options offered. Some respondents suggested that additional reporting categories may be overwhelming for many reporting companies. Some respondents suggested that including instrument claims in target-setting may disincentivize direct abatement of corporate emissions. Some respondents suggested that even separate reporting of instruments may still obscure the identification of opportunities for emissions reductions by

presenting opposing objectives when selecting which emissions category to target for reductions.

Scope and instrument-specific feedback

Some respondents suggested that the nature of the GHG claim being characterized by a specific instrument (e.g. emission reduction, removal, or avoided emission) should be the focus in determining suitability rather than the instrument type. The suggestions from respondents on the exact treatment varied, but generally respondents suggested that emission reductions, removals, or avoided emissions may have different suitability for target setting or claims.

Much of the feedback related to separate reporting of instruments was related to categories of instruments (e.g. project crediting and chain-of-custody models) rather than specific to a scope. Some respondents suggested that project crediting instruments are seeking to represent mitigation impact and should therefore be reported separately. These respondents noted that these instruments and their objectives are best aligned with project/intervention accounting, and as such the claims are valuable for context but difficult to integrate directly with inventory reporting. Some of these respondents highlighted misalignments specifically in reporting timeline, with many of these instruments employing multi-year forward-facing assessment timelines that are incompatible with the one-year backward-facing assessment period for a corporate GHG inventory.

Some respondents suggested that these instruments would only be valuable for target setting or claims. For example, some respondents suggested that insets, as opposed to offsets, may be useful for target-setting because of a perceived more direct connection to the value chain of the reporting company. Other respondents suggested that insets may not functionally be different than offsets in practice and that the perceived difficulty in defining and bounding this newer concept, unlike for offsets, may prove more difficult than the perceived decarbonization benefits. Some respondents suggested that value chain interventions should be grouped with project crediting instruments despite the difference in accounting approach because these respondents perceived that the approaches are seeking to accomplish the same accounting objective.

Some respondents suggested that chain-of-custody models like mass balance and book-and-claim should be reported separately from the inventory. However, some respondents that were in favor of separate reporting often cited perceived individual limitations of each model. Some respondents characterized the mass-balance model as a first step towards physical traceability but one that is not able to substantiate inventory reduction claims in isolation. Some respondents suggested that mass balance is a chain of custody model often without a contractual instrument (i.e. in some sectors, a company is certified for mass balance chain of custody and does volume reconciliation on the associated GHG attributes of input-output products, however, the company does not commercialize certificates along with a product transaction but simply claims a certification status in the product transaction). These respondents suggested that mass balance is useful in cases where physical traceability is limited, but suggested that those claims may best be used in separate reporting.

In contrast, some respondents suggested that the book-and-claim is an effective model for allocating and tracking attributes to avoid double counting, but often lacks the physical value chain connection necessary to substantiate an inventory reduction claim. These perceived inverse limitations led some respondents to suggest that a combination of a mass balance and book-and-claim model would be most effective to substantiate in inventory reporting: using mass balance to establish a physical connection within the value chain to the underlying GHG attributes and a book-and-claim model to allocate contractual instruments.

I.3 Feedback favoring no role for market instruments in the inventory

Some respondents provided feedback that a type of instrument or instruments should serve no role in GHG Protocol accounting or reporting. Many respondents that were opposed to the use of certain instruments within a GHG inventory, however, still suggested that instruments could be reported separately and used for narrative claims. Among the feedback that suggested no role for instruments in corporate GHG accounting, some of the respondents expressed concern over the validity of the reduction claims associated with the purchasing of instruments. Some of these respondents suggested that if there is enough data and information to substantiate an emission reduction claim using an instrument, that same reduction should be able to be reflected in year-over-year emission reductions from existing corporate accounting practices.

Additionally, some respondents suggested that specific instruments should not be used because the emissions they are seeking to characterize are better accomplished through other instruments or approaches. Suggested examples include that inset credits would be better characterized by removal accounting, that book-and-claim certificates are more efficiently traded than mass balance certificates, and that mass balance certificates are better connected to the physical reality of supply chains than book-and-claim certificates.

Finally, some respondents were opposed to the use of offsets in any capacity within corporate accounting or reporting. Some of these respondents suggested that research on the effectiveness of offset credits suggests that the emission reduction or removal benefits of these credits is consistently overstated. Some of these respondents suggested that a negative public perception of offset credits could lead to an increase in the perception of greenwashing. Some of these respondents suggested that offset credits should not appear in corporate accounting because the characterized emission reductions or removals are outside of the company's value chain and therefore should not have any role in corporate reporting.

I.4 Feedback on use cases and sector-specific examples

Some respondents provided feedback on instruments and use cases using the example of individual sectors or markets. Some respondents suggested that the instruments themselves are a means to an end, typically driven by nature and context of a specific commodity or sectoral value chain and by the accounting objectives sought within that sectoral value chain. A notable example used to provide comparative feedback was that of the market-based method within

the scope 2 context. For additional information on this approach and on feedback related to the current use of the *Scope 2 Guidance*, please see the Scope 2 Survey Summary. Feedback on specific use cases such as electricity, biogas, renewable chemical feedstocks, sustainable aviation fuel, maritime, and agriculture also featured in key themes raised by those respondents who submitted proposals separately. For more information, refer to the web-based resource here where proposals submitted are publicly available. Note that the examples highlighted below are not intended to be comprehensive of all possible sectoral and market use cases.

Biomethane, e-methane, renewable natural gas, hydrogen

Some respondents provided feedback related to the use case of biomethane, e-methane, renewable natural gas, hydrogen, or other fuels that are intended to serve as an alternative to fossil natural gas use for companies seeking to reduce scope 1 emissions. Some respondents suggested that these are nascent markets that often serve as the main financially viable pathway for substantial short-term scope 1 emission reductions for many companies that use natural gas in operations. Many of these fossil-alternative fuels can be delivered through the existing common carrier pipeline that is used to deliver fossil natural gas, but companies would need to use a system of book-and-claim and/or mass-balance certificates to substantiate claims related to the co-mingled gas that is sourced from the pipeline.

Some respondents suggested that this situation of mixed attributes on a common grid is analogous to the example of the electricity grid, and thus the accounting approach of scope 2 should be used within scope 1 for claims associated with the combustion of gases sourced from a common carrier pipeline. Some respondents suggested that the fossil-gas-alternative use case for instruments is theoretically stronger than that of analogous electric grid because the gas grid is not bound by time-of-use delivery constraints, making the gas grid a more effective mass-balance distribution system. Some respondents suggested that existing legal and regulatory structures in certain geographies like the European Union or United Kingdom recognize the use of biomethane certificates, which these respondents suggest should be mirrored in the GHG Protocol.

In contrast, some respondents suggested that scope 1 is a measure of direct emissions and therefore should not be subject to allocation or adjustment but instead reflect direct physical emissions from sources to the atmosphere. Some respondents also suggested that many existing fossil-gas-alternative certificates rely on elements of project/intervention accounting to quantify emission reductions, relative to a fossil gas baseline scenario, which they suggested would be inappropriate in inventory accounting.

Sustainable aviation fuel (SAF)

Some respondents provided feedback related to the use of sustainable aviation fuel (SAF). Specifically, respondents suggested that a chain-of-custody model (either mass balance or book-and-claim) is necessary to facilitate the delivery and accounting infrastructure for SAF. Respondents highlighted SAF as another analogous use case in which a lower-carbon fuel is comingled in delivery and use with fossil fuels, however, in this case the accounting focus is more often in scope 3 as the reporting party interested in purchasing associated instruments is often passengers rather than airplane operators. Some respondents suggested that SAF is a preferred use case of market-based approaches because of the misalignment between reporters and the levers of decarbonization, lack of direct traceability in the supply chain, and lack of

viable alternatives for decarbonization. Respondents further requested guidance and alignment with target-setting initiatives and local regulatory structures on claims related to SAF use.

Agriculture

Finally, another major sector highlighted by respondents was agriculture. Respondents suggested that the inherent limitations in product traceability along value chains comprised of disaggregated and changing suppliers means that agricultural value chains are another preferred use case for market-based approaches. Specifically, some respondents suggested that the nature of many agricultural value chains lends towards the use of value chain interventions. Respondents suggested that these instruments would allow reporting organizations to invest in interventions at individual farms within their value chain and claim the associated emission reductions from that intervention even without full traceability of the specific commodity. Some respondents suggested that this approach would be not only a preferred solution for incentivizing action, but could be viewed as a customized emission factor rather than as a market-based approach. In contrast, some respondents expressed concern that such an approach would create problems with double counting without the introduction of a robust system for the creation of residual mix emission factors.

J. Potential Criteria and Safeguards

J.1 General feedback

Many respondents suggested that the credible use of instruments within corporate GHG accounting and reporting would require, in general, the use of appropriate criteria and safeguards. Some respondents recommended specific criteria, safeguards, or other requirements, and others recommended them for specific scopes, instruments, or sectors. Moreover, many related terms such as criteria, safeguards, requirements, and others were used throughout the feedback. As such, this section groups terms as broader instrument program design considerations as well as organizes feedback first into general criteria and considerations and then into instrument-specific criteria and safeguards.

Some respondents expressed that criteria in place for scope 2 could inform market instruments, if suitable, for other scopes. Other respondents suggested that existing criteria in scope 2 market-based method reporting should be further strengthened. For additional information on this feedback, please refer to the Scope 2 Guidance survey summary. Finally, some respondents suggested that criteria and safeguards should be drawn from the design and experience of existing offset instruments and voluntary carbon market programs.

Notably, some respondents suggested that GHG Protocol should define appropriate criteria and safeguards for market instruments. In contrast, some respondents suggested that defining, assessing, and especially enforcing instrument criteria is not the role of the GHG Protocol and these roles should instead be left to regulators, disclosure programs, or sector-specific implementation programs.

J.2 Feedback on general criteria and safeguards

Some respondents recommended general criteria and safeguards across instruments. Among these recommendations, one of the most often cited was additionality or causation. Some respondents suggested that an additionality assessment is a necessary condition for the use of any instrument to ensure that reported impacts are substantiated by real, demonstrated impacts to the atmosphere. To some respondents, the inclusion or exclusion of an additionality requirement would affect whether the respondent considered a given instrument suitable for reporting claims. Some respondents noted the theoretical importance of assessing additionality but the practical difficulty in designing a method for assessing it. In contrast, some respondents suggested that additionality tests are inappropriate in the case of chain-of-custody models. These respondents suggested that additionality can only be assessed using a project/intervention accounting framework, and that this is incompatible with traceability mechanisms designed for inventory reporting.

Another often cited safeguard was the avoidance of double counting. Some respondents suggested that this is the foundational feature that any market-based approach should be designed around. Some respondents suggested that while the avoidance of double counting is a design focus for many aspects of GHG accounting, it is especially important in a market-based mechanism in which the risk of and opportunities for double counting can be increased via the exchange of attributes that are inherent to the entire system.

In addition to additionality and double counting, respondents also recommended the following potential criteria, safeguards, and considerations:

- Assessments of the permanence of removals or other impacts.
- Data quality requirements, such as the primary data for assessing mitigation outcomes.
- Requiring conservative quantification approaches when faced with uncertainty.
- Independent assurance
- Governance requirements for programs with a market-based mechanism.
- An assessment of and protections against leakage.
- Ensuring a direct financial link with an emission reduction (including minimum purchase volumes).
- Establishing a distinction between market instruments that are based on measured impacts versus those based on estimated impacts so that they can be traded accordingly.
- Requiring transparent disclosure of underlying market instruments comprising any market-based inventory.
- Limiting the use of instruments to those that establish a geographic link between attribute generation and attribute purchase.
- Demonstrating equivalence of products impacted by an intervention with those in the reporting company's value chain.
- Transparent allocation of emission reductions or removals to impacted products.

J.3 Feedback on instrument-specific criteria and safeguards

Some respondents provided feedback on additional criteria for specific instruments. Respondents provided several considerations specific to value chain interventions. These include:

- Suggestion that an objective criterion would need to be established to assess whether a supplier (at which an intervention occurs) is within a reporting company's value chain.
- Suggestion that a method for calculating and publishing a residual emission factor for the supply shed from which the intervention occurs would need to be introduced to avoid double counting.
- Suggestion of introducing a limit on reduction claims associated with interventions.
- Suggestion that the reporting entity should use the same geographic scale for supply shed assessments as they do for any other GHG assessments associated with that commodity, such as assessments of removals or land use emissions.

Some respondents also provided specific feedback related to chain-of-custody models, which include:

- Suggestion for any contractual instrument to include activity-based emissions data.
- Suggestion that market boundaries should remain flexible to accommodate and align with the practical realities of different market conditions and geographies around the world.
- Suggestion that any mass balance approach clarify an appropriate geographic (e.g. sub-national, national, regional, or global) and/or organizational scale (e.g. batch-, site-, and group-level).
    - Suggestion that a global mass balance approach not be permitted for use in GHG reporting.
- Suggestion that enforcement of the use of a residual factor should be required for use of a book-and-claim model.

J.4 Feedback on conditional criteria

Some respondents suggested that market-based approaches should be viewed as an interim practice that should be phased out over time. In general, respondents that suggested such an approach cited that many markets or solutions for corporate decarbonization are currently still nascent and that all pathways for enabling investment to be directed towards the upscaling of these solutions should be allowed. Many of these respondents also cited 2030 goals as a motivation for shorter-term approaches to market instruments.

For respondents that suggested temporary or phased use of market-based approaches, several different criteria for determining that conditionality were suggested:

- Some respondents suggested that the use of instruments should be treated as a temporary investment vehicle in line with 2030 ambition and then phased out in favor of direct physical traceability over time to work towards 2050 targets.
- Some respondents suggested that the use of instruments should be allowed in any sector until direct physical traceability is possible.
- Some respondents suggested that the use of instruments should be allowed until a certain percentage of market penetration is reached for the instrument (e.g. the use of SAF certificates would be allowed for reporting up until SAF usage reaches a certain percentage threshold of overall aviation fuel use).
- Some respondents suggested that initial principles should be laid out at the outset of the GHG Protocol standard-setting process to allow for higher confidence in interim investments before the final publication.
- Some respondents suggested that where investment in mitigation action is already in common practice, any updates to the GHG Protocol should not interfere or invalidate these investments.

K. Role of the GHG Protocol

Introduction

Various roles exist for organizations engaged in GHG accounting and reporting standards, whether voluntary or mandatory in nature. In general, these include the definition, assessment, enforcement and/or support of a range of areas such as standards and implementation, assurance, claims, stakeholder engagement, capacity-building, and impact assessment. The GHG Protocol provides standards and guidance on GHG accounting and reporting and supports practitioners with implementation resources, such as capacity-building. Corporate standards that measure and manage GHG emissions from operations, value chains and mitigation interventions are mostly generic and not specific to a particular sector's accounting and reporting. The GHG Protocol recognizes sector-specific guidance mainly through the 'Built on GHG Protocol' mark. For more information, refer to the Guidance Built on GHG Protocol section here on the GHG Protocol website.

Stakeholder feedback regarding the role of GHG Protocol was largely from the perspective of addressing market-based approaches in relevant standards but also was generalized across GHG Protocol's standards suite, implementation resources, and relationship with other programs and regulations. The feedback regarding the role of GHG Protocol covered development of normative documents and implementation resources as well as potential oversight of standards implementation.

K.1. Feedback on GHG Protocol's role regarding market-based approaches

Development of guidance

Many stakeholders were in favor of GHG Protocol developing detailed accounting guidance on market-based approaches. Some suggested that the role of the GHG Protocol is to provide sufficiently clear guidance regarding the accounting and reporting of market-based approaches. Stakeholders suggested that, as the GHG Protocol is a building block for programs, like SBTi and CDP, the GHG Protocol should provide guidance on this topic in order to facilitate further guidance and alignment by programs. Some suggested that questions of impact and percentage reductions should be left to target-setting programs, but that the GHG Protocol should provide guidance on market-based approaches. It was also recognized that not all companies engaging with GHG Protocol standards use these programs, and therefore the GHG Protocol should provide guidance that is sufficiently clear in isolation.

Some respondents suggested that, as GHG Protocol has a global reach, the role should therefore be to provide guidance on this topic to avoid market fragmentation that could arise if accounting approaches are left to regulators in each locality. For instance, there was the suggestion that a fragmentation of approaches that exists within some localities (for example, North American agriculture was cited) could be alleviated if GHG Protocol provides guidance. Moreover, some suggested that, in the absence of GHG Protocol guidance, the demand for

guidance may be met by less-robust and less-credible accounting methodologies that could lead to perceptions of greenwashing.

Development of guidance and active management of implementation programs

Some respondents in favor of GHG Protocol developing guidance on market-based approaches also suggested that GHG Protocol engage in active management of implementation programs on market-based approaches. Some suggested that GHG Protocol should conduct evaluations of the administration of individual instruments to assess their eligibility. Some also suggested that GHG Protocol should not only provide accounting guidance but also accredit assurance providers. Some stakeholders suggested that the success of market-based programs requires public trust that the reported emission reductions are substantiated, and that the GHG Protocol should have a role in assessing whether requirements are met.

Other respondents opposed the notion of GHG Protocol engaging in active management of implementation programs in addition to GHG Protocol developing accounting and reporting guidance. Some suggested that other programs and regulators are better positioned to provide verification, enforcement, and oversight. Moreover, there was the suggestion that a division of roles is necessary for the efficiency of the overall ecosystem. Furthermore, some suggested that potential GHG Protocol engagement in enforcement may delegitimize or lessen the reputation of the GHG Protocol in the eyes of certain stakeholders. Some stakeholders recognized the strides made by institutions and initiatives in administering accounting, reporting, or target-setting standards and guidance, but that GHG Protocol has a role in harmonization of approaches. Some respondents pointed to the fact that no programmatic oversight has been administered by the GHG Protocol for the scope 2 market-based method and that none should be provided if market-based approaches were extended to other scopes. Some suggested that GHG Protocol could provide principles (e.g. enforcement principles) for other actors in the GHG accounting ecosystem, but should not engage in all roles. Some respondents suggested that GHG Protocol can create guidance on how to account for instruments transparently and consistently, but that it should be left to other regulators or program operators to decide whether and how the reporting should be integrated into these programs (e.g. target-setting programs).

Development of high-level guidance

Some stakeholders were in favor of GHG Protocol developing high-level guidance on market instruments that include minimum principles, criteria and safeguards, but allow space for programs to develop detailed requirements, including for specific sectors. In this view, the high-level guidance would be built upon and enforced by other actors. It was noted that, regarding regulation, this guidance would make a greater contribution for companies operating in areas without local regulation as regulatory reporting obligations will supersede voluntary reporting practices, when in place. Some respondents asked in addition that GHG Protocol consider recognizing certain programs, market instruments, and data sources through, for instance, an accreditation mechanism. The suggestion was that this entire approach would be both more efficient (e.g. content harmonization and differentiated yet complementary roles) and more effective (e.g. greater climate action). However, some respondents suggested that the GHG Protocol should simply define minimum principles, present different options for accounting, and highlight the strengths and weaknesses of various market-based approaches, but leave defining

quality criteria to programs and regulators. In this view, GHG Protocol would best facilitate these actors to adopt the measures that suit their contexts.

Some respondents were in favor of GHG Protocol developing accounting and claims guidance for market-based approaches. The suggestion was that minimum claims guidance from GHG Protocol would encourage alignment of the ecosystem and avoid problems like double counting. Stakeholder suggested that companies will make claims regarding their activities with or without guidance. Moreover, this combined, unifying guidance would give stakeholders the necessary context to interpret those claims. Other respondents said that GHG Protocol should provide guidance on how to account for and report market instruments transparently and consistently, but it is the role of other actors in the ecosystem to decide whether to allow market instruments and accept the associated claims.

K.2 GHG Protocol's role in developing implementation resources

Stakeholders provided feedback regarding GHG Protocol's role in providing implementation resources. Regarding data, some respondents recognized that acquiring specific and accurate data is difficult for experienced practitioners, and were concerned that the introduction of new methodologies for market-based approaches could make it more difficult. Some respondents noted that easily accessible residual emission factors might be needed to implement certain types of proposed market-based approaches, which GHG Protocol should consider when deciding what types of reporting systems to develop. There was a suggestion that GHG Protocol provide guidance on how to "translate" data, for instance, translating life-cycle carbon intensity into relevant scopes and categories. Regarding tools, respondents suggested that the GHG calculation landscape is increasingly complicated and that additional free tools are needed to increase accessibility to all practitioners. Specific requests were made for: a) avoided emission tools and b) project/intervention accounting tools. Lastly, some stakeholders gave feedback regarding supporting documentation, such as: a) making guidance available in more languages and b) creating short-form versions to supplement long-form standards.

K.3 GHG Protocol's role in overseeing implementation of standards

Stakeholders provided feedback regarding GHG Protocol's engagement with users of the standards. Some respondents suggested that GHG Protocol more actively engage with stakeholders to directly resolve accounting questions or disagreements. Some respondents noted part of the implementation experience with the *Scope 2 Guidance* that required some interpretation by practitioners. These respondents suggested that GHG Protocol be more involved in interpretation after publishing standards and throughout implementation. An idea suggested was that GHG Protocol could host a forum or similar mechanism to facilitate active conversation on dilemmas and best practice.

Some feedback suggested that GHG Protocol could oversee effective implementation by monitoring the consistency and accuracy of accounting practice. Other respondents, though,

noted that such monitoring may be beyond the capabilities of GHG Protocol alone, and could be inappropriate if GHG Protocol is too involved in oversight or active management of programs.

L. Ecosystem Collaboration

Introduction

The GHG Protocol, as a standard-setting organization, establishes accounting and reporting requirements and guidance for GHG inventories and reports. GHG Protocol is understood to serve as a foundation for other programs and initiatives playing complementary yet differentiated roles, such as those engaged in target setting, disclosure, and regulation.

Feedback

Stakeholders viewed collaboration and alignment in the ecosystem as key success factors to achieve greater climate action. Respondents suggested that more alignment between different actors would help meet various objectives, such as: a) reducing confusion among practitioners and interpreters; b) reducing the potential for leakage, double counting, or other accounting issues between systems; and c) reducing the administrative burden of reporting.

Sector-specific versus uniform approaches

Some stakeholders expressed the need for sector-specific rather than uniform approaches. These respondents suggested that individualized approaches are necessary for different sector conditions. Examples of sectors commonly cited were alternative fuels, electricity, and agricultural commodities. For some conditions, for instance grid-based (e.g. electricity, natural gas) vs. open supply chain (e.g. agricultural commodities), some respondents noted that the individual circumstances may impact not just whether a market-based approach is technically possible but also whether it is an effective pathway for achieving decarbonization. Some respondents also suggested that sector-specific approaches may be necessary to respond to the varying maturity stages of environmental attributes of each sector. Stakeholders suggested that GHG Protocol may be able to define generalized criteria that are used on a case-by-case basis to evaluate each sector in relation to market-based approaches. Some respondents noted the importance of market boundaries (for example, based on the local physical or regulatory situation) in determining the applicability of market-based approaches. These respondents recognized that GHG Protocol's corporate standards are mostly generic and sector-specific guidance is typically developed by other organizations. However, other respondents suggested that a uniform approach be used to strengthen overall alignment in the ecosystem. Respondents in favor of uniformity expressed the need for simplicity and conformity to enable comparison and avoid inconsistencies.

Government interactions

Stakeholders provided feedback on government interactions and the GHG Protocol's role in providing guidance on market instruments. Respondents asked the GHG Protocol to understand the impact of local regulation within the application of market instruments in reporting. Some respondents noted the difficulty in needing to keep multiple books, particularly in the EU. Some respondents noted the impact of compliance markets or other regulations on strengthening the

effectiveness of markets (or the lack of effectiveness in absence of the regulation). Some respondents noted that market definition makes sense within the local regulatory context (e.g. market-boundary definition) and therefore must be a central consideration (i.e. no "one size fits all" approach for market-based approaches). In addition, respondents highlighted specific laws/regulations that could affect those reporting using GHG Protocol standards. The examples of the EU, Australia, USA, UK, and the COP24 SAF transparency framework were cited. Lastly, respondents noted that, in some jurisdictions, legislation exists that establishes legal ownership rights based on attribute certificates. These respondents suggested that GHG Protocol align and/or recognize the effect of these legal rights where they exist.

Programmatic interactions

Stakeholders provided feedback on programmatic interactions and the GHG Protocol's role in providing guidance on market instruments. Respondents noted that some principles, systems, and practices have already been developed by other programs or sectors and that GHG Protocol could consider their adoption. Some respondents suggested that confusion could be created if GHG Protocol were to change positions on prior accounting approaches as other initiatives have built accounting systems based on them. Lastly, some stakeholders asked that GHG Protocol seek alignment with financial accounting frameworks, for example the "no offsetting principle", followed by IFRS and US GAAP.

M. Organization of Standards and Guidance Documents

Introduction

The *Corporate Standard* (2004) established corporate-level GHG emissions accounting and reporting rules and first defined scope 1, scope 2, and scope 3. The *Scope 2 Guidance* (2015) introduced the location-based method and the market-based method for accounting for indirect scope 2 emissions from purchased energy. The appropriate organization of additional guidance on market instruments and actions (e.g. interventions) will be determined through GHG Protocol's multi-stakeholder process.

Feedback

Stakeholders provided feedback on the overall organization of the suite of GHG Protocol standards and guidance. Respondents recognized that normative documents 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. Respondents suggested that this update process is the time to restructure the full suite of standards and guidance. Some stakeholders recommended that GHG Protocol consolidate all requirements across scopes into a single normative document and improve the layout and version management to enhance user-friendliness.

Feedback varied on how to organize additional guidance on market instruments and actions (e.g. interventions). Some respondents suggested to provide guidance on market-based approaches across scopes and existing structures, where possible. Other respondents suggested to provide guidance on market instruments and actions in the *Corporate Standard* to reflect cross-scope implications. Stakeholders recognized multiple cross-scope linkages, for example how the scope 2 emissions of a reporting company's supplier are accounted for in the reporting company's scope 3 emissions. Stakeholders requested a consistent approach be developed across scopes, where possible.

N. Standards Development Process

Introduction

Respondents provided feedback on the process by which the GHG Protocol develops and revises standards and guidance documents, including when considering the role of market instruments. Stakeholders recognized the importance of the standard-setting process as emissions reporting continues to increase in prominence within 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. Stakeholder feedback was provided on the governance and the project management of the GHG Protocol's standard-setting process. Note that since the survey was completed in March 2023, GHG Protocol has launched a new governance structure, as part of an overall strategy refresh, responding to stakeholder feedback.

Feedback

Governance Considerations

Respondents suggested that by formalizing the standard-setting process, in particular governance, the GHG Protocol could build trust in the emissions reporting environment, enhance transparency, and allow users to rely on and apply its guidance consistently. Respondents recommended that GHG Protocol revise and formalize the standards development and revision policy and procedures, namely around decision-making, stakeholder engagement, and the nature and frequency of standard-setting events. Some respondents suggested that decision-making be made clearer and more transparent. Some respondents suggested that a governance body exist, among others, that is focused on the practical implementation of any standard. Some respondents suggested that GHG Protocol establish clear opportunities for stakeholder engagement throughout the standard-setting process, citing instances such as defined consultation periods and a webinar series. Some respondents suggested that a clear update frequency policy would also give predictability to the market between standard and guidance revisions, which is particularly important for market instruments. According to some stakeholders, a more formal standards development and revision policy would distinguish between "major" and "minor" updates. These respondents suggested that "major" updates follow a multi-year revision interval, e.g. every 5 years, whereas an annual interval be established to conduct "minor" updates.

Project Management Considerations

Respondents suggested that by prioritizing certain updates, the outcome of the standard-setting process would be more effective for corporate users and stakeholders. Some respondents suggested that the market-based method in scope 2 should be updated and/or improved before considering expansion of market-based approaches related to other scopes. Other respondents

suggested that further introduction of market-based approaches is a lower priority than making updates to other standards and that these topics should be put on hold until revised standards are published.

Log of changes to Draft Summary Report – July 2024

Between April 8th, 2024 and May 6th, 2024, GHG Protocol offered an opportunity for stakeholders who submitted responses to the Market-based Accounting Approaches Survey to provide feedback to the draft Market-based Accounting Approaches Survey Summary Report to ensure that perspectives were comprehensively and accurately represented. Fewer than 5% of respondents requested revisions to the originally published draft summary report. The log of changes made to the draft summary report is below.

- Section B was updated to improve clarity in language.
- Section C.4 was updated to provide clarity on the potential objective of comparability.
- Section E.2 was updated to include considerations for data accuracy, a scope 3 use case, and baseline scenarios.
- Section G.3 was updated to include a note about concern regarding potential confusion associated with new reporting categories.
- Section H was updated to clarify respondent suggestions related to supply shed approaches.
- Section I.2 was updated to improve clarity of respondent feedback.
- Section I.4 was updated to include clarification about the comprehensiveness of the highlighted examples.