Template for submitting proposals related to GHG Protocol's *Corporate Standard, Scope 2 Guidance, Scope 3 Standard, Scope 3 Calculation Guidance* and market-based accounting approaches

(Optional)

Proposal instructions

GHG Protocol is conducting four related surveys in reference to the following GHG Protocol standards, guidance and topics:

1. Corporate Accounting and Reporting Standard (Revised Edition, 2004) ("Corporate Standard")
2. Scope 2 Guidance (2015)
3. Corporate Value Chain (Scope 3) Accounting and Reporting Standard (2011) ("Scope 3 Standard"), and Technical Guidance for Calculating Scope 3 Emissions, version 1.0, 2013 ("Scope 3 Calculation Guidance")
4. Market-based accounting approaches

The survey is open until March 14, 2023. To fill out the survey, click here.

As part of the survey process, respondents may provide proposals for potential updates, amendments, or additional guidance to the *Corporate Standard, Scope 2 Guidance, Scope 3 Standard, or Scope 3 Calculation Guidance*, by providing the information requested in this template. You may also use this template to provide justification for maintaining a current approach on a given topic.

Submitting proposals is optional. Respondents may submit multiple proposals related to different topics.

Proposals should be as concise as possible while providing the requested information. Submissions that are outside of the template may not be considered. Proposals may be made publicly available.

To submit the proposal, please save this file and fill out the fields below. When you've completed your proposal, please upload the file via this online folder. Please name your file STANDARD_Proposal_AFFILIATION, e.g., *Scope 2_Proposal_WRI*.

Respondent information

Name

Prof. Dr. Gunther Glenk

Organization

University of Mannheim

Email address

glenk@uni-mannheim.de

If proposals are made publicly available, would you like your proposal to be made publicly available? Please write either "Yes" (make publicly available) or "No" (do not make publicly available).

Yes

If your proposal is made publicly available, would you like it to be made publicly available with attribution (with your name and organization provided) or anonymous (without any name or organization provided)? Please write either "With attribution" or "Anonymous".

With attribution

Proposal and supporting information

1. **Which standard or guidance does the proposal relate to (Corporate Standard, Scope 2 Guidance, Scope 3 Standard, Scope 3 Calculation Guidance, general/cross-cutting, market-based accounting approaches, or other)? If other, please specify.**

Corporate Standard

2. **What is the GHG accounting and reporting topic the proposal seeks to address?**

Principles and procedures of the GHG Protocol for determining corporate GHG emissions.

3. What is the potential problem(s) or limitation(s) of the current standard or guidance which necessitates this proposal?

With the defined principles and procedures, the GHG Protocol seeks to ensure that the reported information represents a "*faithful, true, and fair account*" of a company's GHG emissions. My research shows that neither the principles nor the procedures of the GHG Protocol can achieve this objective.

4. Describe the proposed change(s) or additional guidance.

I propose to replace the principles of the GHG Protocol with a new taxonomy of qualitative characteristics for decision-useful carbon information.

As detailed in Glenk (2023), this taxonomy is constructed in direct analogy to the conceptual frameworks of international financial accounting standards. These frameworks define the objective of financial reporting and provide a comprehensive system of generally accepted accounting principles. Specifically, the frameworks seek to ensure that reported information on a firm's economic phenomena is *useful* to the users of financial information in making decisions related to the firm. The criterion of *decision-usefulness* is defined by the system of accounting principles and reflects the quality standard of financial information.

For the taxonomy, the central information is about a firm's atmospheric phenomena. These phenomena refer to changes in atmospheric GHG associated with the firm's economic activity. They include direct emissions of GHG to the atmosphere from the firm's operations and indirect emissions in trade with suppliers and customers whenever direct emissions occur up- or downstream in the value chain. They also include direct or indirect removals of carbon dioxide from the atmosphere.

Users of such carbon information include internal and external stakeholders of the firm concerned with the impact of the firm's atmospheric phenomena on the environment and the firm's financial performance. This dual impact is often referred to as double materiality in contrast to the single (financial) materiality of a firm's economic phenomena. Decisions related to the firm can be manifold, including resource allocations, purchasing decisions, and policy choices.

Like financial information, information on a firm's atmospheric phenomena will be called *decision-useful* if and only if it is *relevant* and *faithfully represents* what it purports to represent. A faithful representation obtains if and only if the information is a *verifiable*, *neutral*, and *complete* depiction of the *real-world atmospheric phenomena* that the reporting firm *controls.* The usefulness of carbon information is enhanced if it is *timely*, *comparable*, and *understandable*. Meanwhile, its provision is constrained by *materiality* and *benefits* that need to justify costs.

The figure below illustrates the hierarchy of these qualitative characteristics. Accordingly, either irrelevance or unfaithful representation leads to information that is not decision-useful. Enhancing characteristics improve while constraints limit the usefulness of carbon information, but neither can make information relevant or representationally faithful. Glenk (2023) further defines and discusses the qualitative characteristics and constraints.

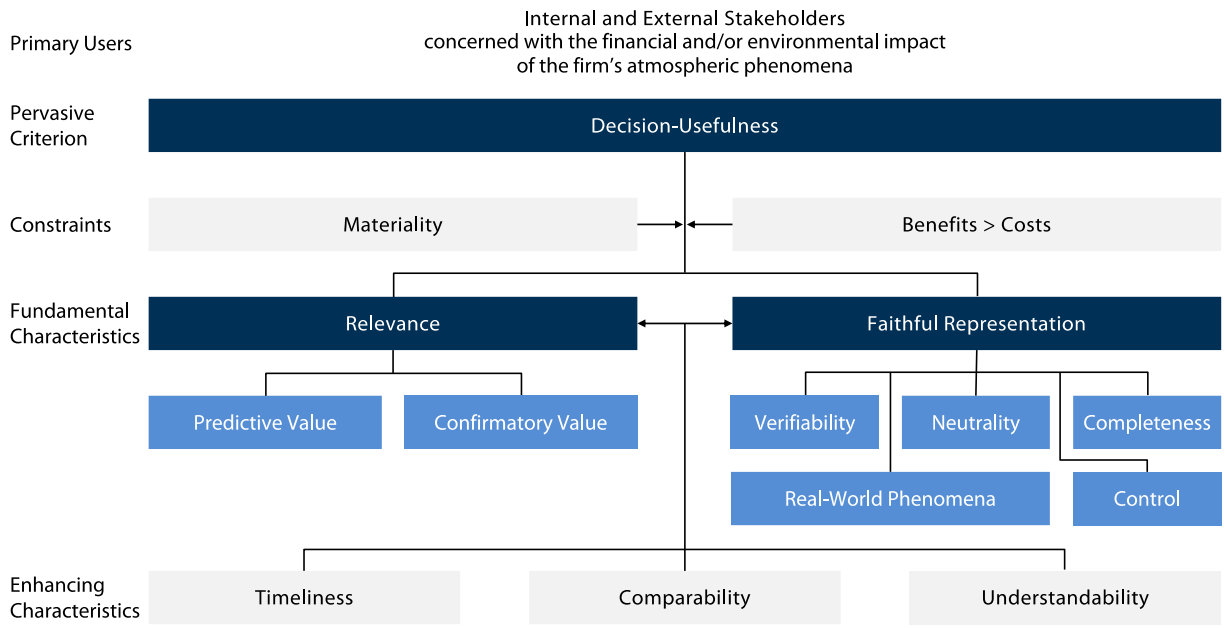

Figure. Taxonomy of decision-useful carbon information. Resembling the familiar hierarchy of financial accounting principles, this figure illustrates the relationships between the qualitative characteristics of decision-useful carbon information.

5. Please explain how the proposal aligns with the GHG Protocol decision-making criteria and hierarchy (A, B, C, D below), while providing justification/evidence where possible.

A. GHG Protocol accounting and reporting approaches shall meet the GHG Protocol accounting and reporting principles (see Annex for definitions):

- Accuracy, Completeness, Consistency, Relevance, Transparency
- Additional principles for land sector activities and CO_2 removals: Conservativeness, Permanence, and Comparability if relevant

Recall that the five principles of the GHG Protocol Corporate Standard are intended to ensure that the reported information faithfully represents a company's GHG emissions.

Compared with the preceding taxonomy, the principles of the GHG Protocol bear two main deficiencies. First, their selection is adverse as it omits qualitative characteristics necessary for a faithful representation (i.e., verifiability, neutrality, control, and real-world atmospheric phenomena). At the same time, it includes principles that are no components of a faithful representation. Relevance constitutes decision-usefulness together with a faithful representation. Consistency contributes to comparability, which, in turn, enhances decision-usefulness. Transparency and accuracy are redundant as they result from the qualitative characteristics verifiability, neutrality, completeness, and understandability.

Second, the principles' definitions are vague. As stated in the Annex, relevant information would "*appropriately reflect the GHG emissions of the company*" and "*serve the decision-making needs of*

users." The first part of this definition effectively describes a faithful representation but not what constitutes relevant information. The second part suggests that information lacks relevance if users choose not to use it. Yet, carbon information is relevant whenever it has the capacity to make a difference in decisions, even if some users choose not to take advantage of it. This distinction is crucial as decision-makers increasingly recognize the benefits of carbon information in their decision-making.

Completeness, as defined in the Annex, would ensure that the reported information accounts for all GHG emission sources and activities "*within a chosen inventory boundary*." This ability to choose enables firms to (unintentionally) omit emissions.

Consistency, by definition in the Annex, requires using "*consistent methodologies to allow for meaningful comparisons of emissions over time*." In addition, any changes made over time would need to be documented transparently. The quoted part of this definition leaves open what ingredients constitute consistency. The subsequent part describes steps for improving the understandability of carbon information.

Finally, the definition of transparency in the Annex describes elements of verifiability and understandability, while the one for accuracy includes aspects of neutrality. Yet, both cannot be considered equivalent to the respective definitions in the taxonomy (see Glenk (2023) for details).

B. GHG Protocol accounting and reporting approaches shall align with the latest climate science and global climate goals (i.e., keeping global warming below 1.5°C). To support this objective (non-exhaustive list):

- Direct emissions reported in a company's inventory should correspond to emissions to the atmosphere. Reductions in direct emissions reported in a company's inventory should correspond to reductions in emissions to the atmosphere.
- Indirect emissions reported in a company's inventory should in the aggregate correspond to emissions to the atmosphere. Reductions in indirect emissions reported in a company's inventory should in the aggregate correspond to reductions in emissions to the atmosphere.

The taxonomy of decision-useful carbon information includes two crucial qualitative characteristics: *real-world atmospheric phenomena* and *control*. Real-world phenomena refer to changes in atmospheric GHG that have occurred in the past so as to measure a firm's actual contribution to climate change so far. They do not include emissions and removals that are estimated to have occurred or those that are likely to occur in the future. This distinction is crucial since firms today commonly aggregate emissions that have occurred with those expected to occur going forward. Many firms even count removals pledged to be attained in the future against emissions that have already materialized.

Different from the term's use in the GHG Protocol, control refers to legal rights associated with an event or a transaction, or other means of ensuring that the reporting firm, and no other party, directed the event or transaction that has led to the change in atmospheric GHG. Control establishes a unique attribution of atmospheric phenomena to firms. This is essential for resolving the frequent responsibility disputes over emissions today. For instance, industrial manufacturers of products like

steel or cement regularly ignore emissions from burning waste as an alternative fuel based on the argument that these emissions would have occurred at nearby waste incineration plants. But operators of such incineration plants note that they no longer burn the waste. Alternatively, companies whose operations are allegedly powered by renewable electricity usually make this claim based on renewable energy credits they purchased to offset their regular grid power consumption. However, operators of such credit-issuing renewable power plants often sell the electricity corresponding to the credits to other customers also as free of carbon emissions.

The current procedures of the GHG Protocol cannot ensure that the resulting information represents real-world atmospheric phenomena the reporting firm controls. Scope 2 and upstream Scope 3 emissions seek to capture the real-world emissions the firm has obtained from upstream suppliers who incurred them in their production processes. Based on exemplary production processes and industry averages, however, the calculations by the reporting firm can, at most, return an estimate of these emissions. Downstream Scope 3 emissions seek to capture expected future emissions the firm's customers will incur by using or consuming the purchased goods and services. These emissions reflect no real-world phenomena, and their realization lies outside the firm's control. Carbon offsets seek to capture the GHG avoided or removed by a mitigation project. Calculated relative to a hypothetical baseline, they can only reflect estimates of potential GHG avoidance or removal.

The procedures of the GHG Protocol can also not ensure that the reported information is a verifiable, neutral, and complete depiction of the firm's GHG emissions. Information on the actual changes in atmospheric GHG underlying Scope 2 and, especially, Scope 3 emissions is often unavailable today. As a consequence, third-party auditors cannot conclude that reported numbers are without errors and omissions and, therefore, typically resort to the opposite by declaring that no evidence of misreporting has been found. In addition, firms can choose their inventory boundaries and the activity and emission intensity data for calculating emissions. Accordingly, early evidence suggests that companies have been taking advantage of this flexibility by cherry-picking favorable emission factors, omitting emissions associated with the goods and services they procured, and setting different organizational boundaries for reporting GHG emissions than for reporting financial information. Such variance also inhibits the comparability and understandability of reported emission numbers.

C. GHG Protocol accounting frameworks should support ambitious climate goals and actions in the private and public sector.

- Would this proposal enable organizations to pursue more effective GHG mitigation/decarbonization efforts as compared to the existing standards and guidance? If so, how?
- Would this proposal better inform decision making by reporting organizations and their stakeholders (e.g. related to climate-related financial risks and other relevant information associated with GHG emissions reporting)?

The benefits of decision-useful carbon information are extensive. Examples include understanding a firm's climate-related risks and opportunities, identifying leaders and laggards on climate action, and informed decision-making by investors, managers, customers, policy-makers, and other stakeholders.

Importantly, the taxonomy above will guide companies in accounting for GHG emissions such that reported information is decision-useful to their stakeholders. Such required procedures for this can

build upon elements of the GHG Protocol and existing financial accounting standards to capture the real-world atmospheric phenomena of each event and transaction a firm controls. Based on individual events and transactions, the procedures will allow for the testing auditors need to perform to issue "reasonable" assurances, which is the same level expected for financial audits and is to confirm a faithful representation.

By faithfully accounting for GHG emissions, the new procedures will also enable the introduction of performance measures for assessing the carbon footprint of a firm and its products. Such measures can complement carbon border adjustment mechanisms, like the one envisioned by the EU. They will also permit the credible specification of net-zero pledges and continuous monitoring of a firm's decarbonization efforts.

D. GHG Protocol accounting frameworks which meet the above criteria should be feasible. (For aspects of accounting frameworks that meet the above criteria but are difficult to implement, GHG Protocol should provide additional guidance and tools to support implementation.)

- What specific information, data or calculation methods are required to implement this proposal (e.g., in the case of scope 2, data granularity, grid data, consumption data, emission information, etc.)? Would new data/methods be needed? Are current data/methods available? How would this be implemented in practice?
- Would this proposal accommodate and be accessible to all organizations globally who seek to account for and report their GHG emissions? Are there potential challenges which would need to be further addressed to implement this proposal globally? What would be the potential solutions?

The proposed taxonomy is constructed in direct analogy to international financial accounting standards. Thus, the preparation of decision-useful carbon information would be parallel to financial accounting processes and require limited modifications to existing software solutions. Auditors would also face no conceptual barriers in verifying the prepared disclosures. Overall, the cost of adopting the taxonomy should prove modest.

6. Consistent with the hierarchy provided above, are there potential drawbacks or challenges to adopting this proposal? If so, what are they?

No.

7. Would the proposal improve alignment with other climate disclosure rules, programs and initiatives or lead to lack of alignment? Please describe.

The taxonomy above will facilitate the alignment of the GHG Protocol with carbon disclosure mandates and standards, such as those proposed by the EU, US SEC, and ISSB. According to the corresponding proposals, these initiatives seek to ensure that reported information on a firm's atmospheric phenomena will be *decision-useful*. The proposal by the US SEC provides no details on what constitutes decision-useful carbon information. In contrast, the EU and ISSB provide qualitative

characteristics for a firm's sustainability information in general. These definitions are broadly consistent with those in the taxonomy above, yet they omit characteristics corresponding to control and real-world atmospheric phenomena.

For determining corporate GHG emissions, the proposals by the EU, US SEC, and ISSB have generally adopted the procedures of the GHG Protocol. In comparison with the taxonomy above, it shows that the envisioned mandates by the EU and US SEC will improve the information quality of corporate carbon disclosures. In particular, the specification of a firm's organizational boundary and of emission factors for calculating Scope 1 and 2 emissions will ensure the verifiability, neutrality, and completeness of the respective metrics. Yet, the envisioned mandates cannot ensure that all reported carbon information will be decision-useful primarily due to deficiencies inherited from the GHG Protocol. Crucial deficiencies include that the envisioned mandates establish no unique attribution of emissions to firms and insufficiently differentiate between realized, estimated, and potential future emissions. As a consequence, the total amount of real-world atmospheric GHG a firm controls at a particular point in time will remain unclear.

8. Please attach or reference supporting evidence, research, analysis, or other information to support the proposal, including any active research or ongoing evaluations. If relevant, please also explain how the effectiveness of the proposal can be evaluated and tracked over time.

Glenk, Gunther (2023). *A Taxonomy of Decision-Useful Carbon Information*. https://bit.ly/co2-info

9. If applicable, describe the process or stakeholders/groups consulted as part of developing this proposal.

Academic research.

10. If applicable, provide any additional information not covered in the questions above.

Recall that the GHG Protocol seeks to ensure that the reported information represents a "*faithful, true, and fair account*" of a company's GHG emissions. Compared with the new taxonomy, the objective of the GHG Protocol exhibits two main deficiencies. First, it is focused on emissions and ignores removals, even though removals are included in the procedures of the GHG Protocol. Second, it is inferior to the criterion of decision-usefulness because information can be faithful, true, and fair but irrelevant. Moreover, a true and fair account is in financial accounting standards considered equivalent to a faithful representation as it results from information being verifiable, neutral, and complete.

Proposal Annex

GHG Protocol Decision-Making Criteria and Hierarchy

A. First, GHG Protocol accounting and reporting approaches shall meet the GHG Protocol accounting and reporting principles:

- Accuracy, Completeness, Consistency, Relevance, Transparency
- Additional principles for land sector activities and CO_2 removals: Conservativeness, Permanence, and Comparability if relevant
- (See table below for definitions)

B. Second, GHG Protocol accounting and reporting approaches shall align with the latest climate science and global climate goals (i.e., keeping global warming below 1.5°C). To support this objective (non-exhaustive list):

- Direct emissions reported in a company's inventory should correspond to emissions to the atmosphere. Reductions in direct emissions reported in a company's inventory should correspond to reductions in emissions to the atmosphere.
- Indirect emissions reported in a company's inventory should in the aggregate correspond to emissions to the atmosphere. Reductions in indirect emissions reported in a company's inventory should in the aggregate correspond to reductions in emissions to the atmosphere.

C. Third, GHG Protocol accounting frameworks should support ambitious climate goals and actions in the private and public sector:

- Accounting framework/s would enable organizations to pursue more effective GHG mitigation/decarbonization efforts as compared to the existing standards and guidance
- Accounting framework/s would better inform decision making by reporting organizations and their stakeholders (e.g. related to climate-related financial risks and other relevant information associated with GHG emissions reporting)

D. Fourth, GHG Protocol accounting frameworks which meet the above criteria should be feasible to implement for the users of the frameworks.

- For aspects of accounting frameworks that meet the above criteria but are difficult to implement, GHG Protocol should provide additional guidance and tools to support implementation.

GHG Protocol Accounting and Reporting Principles

Principle	Definition
Accuracy	Ensure that the quantification of GHG emissions (and removals, if applicable) is systematically neither over nor under actual emissions (and removals, if applicable), 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.
Completeness	Account for and report on all GHG emissions (and removals, if applicable) from sources, sinks, and activities within the inventory boundary. Disclose and justify any specific exclusions.

Consistency	Use consistent methodologies to allow for meaningful performance tracking of emissions (and removals, if applicable) over time and between companies. Transparently document any changes to the data, inventory boundary, methods, or any other relevant factors in the time series.
Relevance	Ensure the GHG inventory appropriately reflects the GHG emissions (and removals, if applicable) of the company and serves the decision-making needs of users – both internal and external to the company.
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.
Conservativeness (Land Sector and Removals Guidance)	Use conservative assumptions, values, and procedures when uncertainty is high. Conservative values and assumptions are those that are more likely to overestimate GHG emissions and underestimate removals, rather than underestimate emissions and overestimate removals.
Permanence (Land Sector and Removals Guidance)	Ensure mechanisms are in place to monitor the continued storage of reported removals, account for reversals, and report emissions from associated carbon pools.
Comparability (optional) (Land Sector and Removals Guidance)	Apply common methodologies, data sources, assumptions, and reporting formats such that the reported GHG inventories from multiple companies can be compared.