

This document includes PwC's responses submitted to the Greenhouse Gas Protocol Corporate Accounting and Reporting Standard (the Corporate Standard survey). It should be read in conjunction with our [summary letter](#), responses to the [Scope 2 Guidance survey](#) and [Scope 3 Standard and Scope 3 Calculation Guidance survey](#), and supplemental proposals on (1) [governance matters](#); (2) [consistency with financial reporting](#); and (3) [tracking emissions over time](#).

Also, note that this document includes the Corporate Standard survey questions and PwC's responses. Please refer to the Greenhouse Gas Protocol website for the original [Corporate Accounting and Reporting Standard survey](#).

Corporate Accounting and Reporting Standard survey

DATA AND PRIVACY ACKNOWLEDGEMENT

1. *In order to proceed to the survey, please click yes below to acknowledge that you have reviewed the information in the Process Memo and Corporate Standard Survey Memo and that you consent to the data disclosure agreements outlined in the Process Memo.*

- Yes**
 No

RESPONDENT INFORMATION

2. *Name*

Henry Daubeney

3. *Organization*

PricewaterhouseCoopers

4. *Country*

"PricewaterhouseCoopers" refers to the network of member firms of PricewaterhouseCoopers International Limited (PwCIL), each of which is a separate and independent legal entity. With offices in 152 countries and almost 328,000 people, PwCIL is among the leading professional services networks in the world. Following consultation with members of the PricewaterhouseCoopers network of firms, our survey response summarizes the views of those member firms that commented on the survey.

5. *Email address*

henry.daubeney@pwc.com

6. *Would you like to receive email updates from GHG Protocol?*

- Yes**
 No

7. *Does your company/organization have a greenhouse gas inventory?*

- Yes
 No
 Other (please specify)

PwC's corporate sustainability group prepares a greenhouse gas inventory in accordance with the Greenhouse Gas Protocol and issues a climate report on behalf of the global firm. In addition, many of our firms issue climate reports in line with their jurisdictional requirements. Our responses to the survey, however, are primarily informed by our interactions with clients and investors as well as our history of engagement and proactive thought leadership on ESG matters.

We have also prepared a [summary letter](#) to highlight our most significant recommendations.

8. *Are you involved in developing your company's/organization's greenhouse gas inventory?*

- Yes
- No
- Not applicable
- Other (please specify)**

Please refer to our response to question 7.

9. *What is your organization type?*

- Academia/research
- Company
- Consultant supporting organizations with GHG inventories/strategies
- GHG reporting program or initiative
- Government institution
- International agency
- Industry group
- Non-profit organization/NGO/civil society
- Provider of data or product related to GHG inventories
- Other (please specify)**

Please refer to our response to question 7.

10. *What is your company's sector?*

- Agriculture
- Apparel
- Biotech, health care and pharmaceutical
- Chemicals
- Construction
- Consumer goods
- Education
- Energy
- Finance
- Food and beverage
- Forest products
- Forestry
- Fossil fuels
- Hospitality
- Information and communication technology
- Infrastructure
- Insurance

- Manufacturing
- Materials
- Mining
- Power generation
- Professional, scientific, and technical services**
- Real estate
- Retail
- Services
- Transportation
- Utilities (water, gas, electricity)
- Waste management
- Other (please specify)

GENERAL

11. *Does your company/organization use the Greenhouse Gas Protocol Corporate Standard to develop its greenhouse gas inventory?*

- Yes
- No
- Not sure
- Not applicable (my company/organization does not have a greenhouse gas inventory)
- Other (please specify)**

Please refer to our response to question 7.

12. *How satisfied are you with the current GHG Protocol Corporate Standard?*

- 1 - Very satisfied
- 2 - Somewhat satisfied
- 3 - Neither satisfied nor dissatisfied**
- 4 - Somewhat dissatisfied
- 5 - Very dissatisfied
- Not applicable (I don't use it)

13. *Do you think there is a need to update the GHG Protocol Corporate Standard?*

- No (no update needed)
- Minor update (limited updates, clarifications, additional guidance, or refresh needed)
- Major update (major changes or revisions needed)**
- No opinion/Not sure

14. *Please explain your selection. You may enter brief comments here or submit a more detailed proposal using the proposal template.*

In preparing our responses to the GHG Protocol's request for input, we noted certain pervasive points impacting broad application of the emissions guidance. We believe addressing these holistic points as a priority would enhance consistency and comparability, the quality of information reported, as well as the relevance and transparency of emissions information prepared in accordance with the GHG Protocol. These broad proposals are as follows:

Purpose and governance

Greenhouse Gas (GHG) Protocol is one of the most widely known and applied sustainability frameworks. Sustainability reporting, however, has evolved substantially since GHG Protocol was launched more than 20 years ago. Not only is there increasing global urgency around greenhouse gas reductions, but greenhouse gas data is being used by a growing array of stakeholders to assess the contribution of individual companies to global warming, as well as to measure their success in transitioning to lower carbon business models. Further, the increasing integration of sustainability information — including greenhouse gas emissions data — with financial information as well as its increasing prominence requires reporting standards with enhanced rigor, flexibility, and clarity.

In response, we believe that GHG Protocol should consider strategic, structural, and technical changes to maintain quality and relevance in light of its increasing importance to a broader group of stakeholders. Our recommendations in the areas of purpose, governance, organization of the reporting standards, interoperability, and data quality are summarized in the [governance matters template](#).

Alignment with financial reporting

The GHG Protocol's principles are derived in part from generally accepted accounting and reporting principles. Further, GHG emissions information is also often presented in parallel with financial information, and as such, we believe there is a need for enhanced alignment with financial reporting principles. In addition, there are numerous topics impacting recognition and measurement of greenhouse gas emissions that are not currently addressed in the standards. Leveraging the related financial reporting concepts, where applicable, would allow GHG Protocol to focus on other areas of emissions reporting.

Please refer to our [financial reporting template](#) for more detailed recommendations with respect to the consideration of cut off and subsequent events, structural changes, measurement policies and estimates, and errors.

Emerging technologies

New technologies and techniques that advance decarbonization (e.g., sustainable aviation fuel, hydrogen, agricultural commodities, recycling innovations) may impact how emissions are calculated and reported. Ensuring that calculation and reporting methodologies reflect the current stages of market developments requires a collaborative effort with various stakeholders. We believe this is critical to ensuring that the GHG Protocol's guidance progresses in line with the state of the emission landscape. Therefore, we recommend that GHG Protocol establish formal processes to monitor developing technologies and evolutions in access to information. Further, GHG Protocol should formally evaluate the impact of these technological advances on scope 1, scope 2, and scope 3 GHG reporting, incorporating additional interpretive guidance in its standards as applicable.

Other

We also provided a proposal related to emissions tracking over time in our [tracking emissions over time template](#).

We have included additional, more detailed recommendations in our responses to the other questions in this survey.

15. *Does your company/organization or industry face any specific challenges in complying with the GHG Protocol Corporate Standard requirements and guidance? If yes, please describe each challenge and the solutions you would propose for addressing the challenge. You may enter brief comments here or submit a more detailed proposal using the proposal template.*

See our response to question 14.

16. *Does your company/organization or industry require additional industry-specific guidance related to the Corporate Standard for developing a GHG inventory? If yes, please describe what is needed.*

We believe that GHG Protocol should prioritize industry-agnostic standards that have sufficient flexibility to address matters arising across a multitude of use cases. We recognize, however, that there are certain industry-specific situations where additional clarity would aid consistency and transparency of reporting. To address these concerns, we recommend that the standards and guidance incorporate more practical application examples, spanning a range of industries. For example, it would be helpful to illustrate how the scope should be determined for common and recurring situations such as commercial real estate, oil rigs, power plants, principal-agent transactions, and other multi-party arrangements.

ORGANIZATIONAL BOUNDARIES

17. *Which consolidation approach does your company/organization use to define your organizational boundaries? (Please skip this question if your company/organization does not have a GHG inventory.)*

- Operational control
- Financial control
- Equity share
- Not sure
- Other (please specify)**

PwC is a global network of separate legal entities. None of the consolidation approaches prescribed by the Corporate Standard appropriately capture PwC's corporate structure. Our global climate report adopts an approach that achieves pragmatic alignment with the consolidation approaches recognized by GHG Protocol. Individual network firms, however, may select different approaches in their separate sustainability reporting.

18. *Do you propose revisiting or making any changes to the current requirements and guidance on organizational boundaries? (Reference: GHG Protocol Corporate Standard, chapter 3, "Setting Organizational Boundaries," which allows companies to choose one of the following consolidation approaches: operational control, financial control, equity share).*

- Yes**
- No
- No opinion/not sure

19. *Please explain your selection. You may enter brief comments here or submit a more detailed proposal using the proposal template.*

Determining the appropriate organizational boundaries for emissions reporting is one of the areas of considerable discussion and debate among the big three sustainability proposals. Each of the proposals, however, ties the required organizational boundaries for greenhouse gas emissions reporting in some manner to those used in financial reporting. This movement toward consistency with the financial statements is consistent with our overall view that alignment between financial reporting and sustainability reporting, where possible, provides more useful and actionable information.

Further, the determination of which entities should be included in a company's consolidated financial statements is based on a significant volume of generally accepted accounting principles that have developed over decades of standard setting. Investors understand the concept of consolidated financial statements and rely on the knowledge that the primary information reported in the statements is reported on the same basis, for the same group of entities. In contrast, the definitions of

organizational and operational boundaries outlined in GHG Protocol were designed to standardize greenhouse gas reporting, with a dual benefit of providing information for use by policymakers and architects of GHG programs. Because the guidance was not originally developed in the context of reporting emissions together with financial information, many of the principles are incongruent. In addition, the current optionality within the Corporate Standard diminishes the comparability and usefulness of information across companies.

We believe the general alignment of the big three proposals with the financial reporting guidance is reflective of the current direction of sustainability reporting. As such, we recommend that GHG Protocol eliminate the current options available for the determination of organizational boundaries, coalescing around a model consistent with financial reporting. An added benefit of alignment would be the ability to leverage the years of effort devoted to developing the current consolidation models, allowing GHG Protocol to focus its efforts on other pressing emissions reporting issues. The impact of adopting a financial reporting approach for determination of organizational boundaries would be to report 100% of the GHG emissions of a consolidated subsidiary as part of the reporting entity's emissions. When an entity is not controlled (e.g., joint arrangements, equity investees, and associates), an equity share approach would apply such that the consolidated entity would report its proportionate share of the emissions (e.g., 25% of the noncontrolled entity's emissions if the reporting entity holds a 25% ownership interest).

Notwithstanding this recommendation, if GHG Protocol retains its current approach for determining organizational boundaries, we recommend that it develop enhanced standards and guidance with sufficient flexibility to address the plethora of control situations. For example, we believe guidance on multi-party arrangements should be reconsidered — moving beyond a singular factor such as the party that operates the facility — so that the resulting reporting better reflects the party with the ability to influence decisions impacting emissions over time. The types of arrangements that should be addressed include outsourcing or supply chain functions, complex contractual arrangements, and investment company relationships as well as scenarios in which an entity has the power to replace the operator or where the operator requires consent of another party to perform its functions.

OPERATIONAL BOUNDARIES

20. *Do you propose revisiting or making any changes to the current requirements and guidance on operational boundaries? (Reference: GHG Protocol Corporate Standard, chapter 4, "Setting Operational Boundaries," which defines scope 1, scope 2, and scope 3 emissions. Under the Corporate Standard, scope 1 and scope 2 are required at a minimum, while scope 3 is optional. Under the GHG Protocol Scope 3 Standard, scope 1, scope 2, and scope 3 emissions are required, with any exclusions required to be disclosed and justified).*

- Yes**
- No
- No opinion/not sure

21. *Please explain your selection. You may enter brief comments here or submit a more detailed proposal using the proposal template.*

See our response to question 19.

22. *Do you propose revisiting or making any changes to the current requirements and guidance on leased assets? (Reference: "Categorizing GHG emissions from leased assets" available at <https://ghgprotocol.org/corporate-standard>)*

- Yes**
- No
- No opinion/not sure

23. *Please explain your selection. You may enter brief comments here or submit a more detailed proposal using the proposal template.*

The Corporate Standard's current requirements and guidance on leased assets relies, in part, on the classification of the lease under generally accepted accounting principles. Subsequent to development of this guidance, however, the IFRS and US GAAP standards for accounting for leases were changed, impacting how leases are accounted for and reported in the financial statements.

A contract is accounted for as a lease if it conveys the right to control the use of an identified asset. Control is determined by assessing whether the customer has (1) the right to obtain substantially all of the economic benefits from use of the asset and (2) the right to direct its use. Except in limited circumstances, all leases are now recognized as assets on the lessee's balance sheet. Based on the updated definition of a lease, a lessee has control of its leased assets and thus should be reporting the related emissions as either scope 1 or scope 2 as applicable. Further, the lessor no longer has control and should be reporting emissions from leased assets as scope 3. As such, we recommend that GHG Protocol modify its existing guidance on leases to reflect these changes.

In providing our recommendation, we acknowledge that the accounting guidance provides certain practical expedients that may impact application of the model outlined above (e.g., certain leases may be excluded from the balance sheet because the term is less than a year or they are immaterial). Consistent with our broader view that alignment between sustainability and financial reporting is preferable where possible, we recommend that the revised guidance require entities to apply practical expedient elections consistently. Therefore, when the short term lease exception is applied, we believe that the emissions associated with those leased assets would not be reported by the lessee.

Further, we note that reporting entities may follow local financial reporting standards with differing definitions of leases. We believe the overall model outlined above (i.e., that the classification of emissions for leased assets should follow the financial reporting treatment) should apply without regard to the accounting principles applied.

TRACKING EMISSIONS OVER TIME

24. *Do you propose revisiting or making any changes to the current requirements and guidance on tracking emissions over time? (Reference: GHG Protocol Corporate Standard, chapter 5, "Tracking Emissions Over Time," which provides requirements and guidance on choosing a base year and recalculating base year emissions for significant changes in the inventory to enable consistent tracking of emissions over time.)*

- Yes**
 No
 No opinion/not sure

25. *Please explain your selection. You may enter brief comments here or submit a more detailed proposal using the proposal template.*

Please refer to our detailed comments within the [tracking emissions over time template](#).

VERIFICATION/ASSURANCE

26. *Do you propose revisiting or making any changes to the current requirements and guidance on verification or assurance? (Reference: GHG Protocol Corporate Standard, chapter 10, "Verification of GHG Emissions," under which verification or assurance is recommended but not required.)*

- Yes**
 No
 No opinion/not sure

27. *Please explain your selection. You may enter brief comments here or submit a more detailed proposal using the proposal template.*

The Corporate Standard includes guidance related to the recognition and measurement of GHG emissions as well as additional perspective on numerous other matters, including verification and assurance. As noted, we believe that topics such as verification and assurance may be dictated by regulators and other standard setters. Nonetheless, this guidance may continue to be important to companies reporting outside a mandatory reporting scheme or other framework.

Our response to this question is informed by this perspective, however, in general, we believe that verification and assurance are topics outside of the GHG Protocol’s core areas of expertise. Further, there are other standard setters addressing topics such as internal control over sustainability matters as well as attestation requirements. For example, the Committee of Sponsoring Organizations of the Treadway Commission (COSO) – which produced highly regarded and widely used guidance on internal control over financial reporting – is developing supplemental guidance in the areas of sustainability and ESG.¹ And, organizations such as the American Institute of Certified Public Accountants (AICPA) and the International Auditing and Assurance Standards Board (IAASB) have issued guidance around reasonable and limited assurance of GHG emissions.

If GHG Protocol retains guidance in this area, we recommend that it more clearly distinguish between verification and assurance. Further, we believe the “verification” guidance may be more clearly deemed internal control and that the guidance should focus on the process and controls around gathering and reporting of emissions information through the lens of preparers of such information. This guidance should elaborate on the quality principles and parameters to provide clarity and guidance with respect to internal quality control over GHG emissions information gathering and reporting. If retained, we recommend expansion of the “third-party assurance” discussion to include specific guidance regarding the qualifications and independence of third-party assurance practitioners.

OTHER TOPICS

28. *Do you propose revisiting, making any changes, or clarifying any other topics, requirements, or guidance in the Corporate Standard?*

- Yes**
 No
 No opinion/not sure

29. *Please explain your selection. You may enter brief comments here or submit a more detailed proposal using the proposal template.*

In our experience working with the Corporate Standard, we have identified several areas where additional clarity would aid preparers in application of the guidance, improving the quality of the information reporting and leading to enhanced comparability across entities. In addition to our other recommendations noted in our responses to this survey, we recommend changes in the areas noted below.

Materiality

As discussed in the “Interoperability” section of our response to question 4 in the related [governance matters template](#), we recommend GHG Protocol supplement its foundational recognition and measurement guidance with guidance that could be applied in the absence of requirements specified by a regulator or another standard setter. These “building blocks” should provide sufficient guidance

¹ [COSO Board Approves Study on Sustainability/ESG](#)

to support consistent and high quality disclosures for those not reporting under prescriptive frameworks.

One of these “building blocks” is materiality. The Corporate Standard discusses materiality in varying contexts, both from a preparation and a verification perspective. This guidance, however, does not provide sufficient context or clarity for a preparer seeking to determine relevant materiality factors in emissions reporting. Additional guidance in this area would benefit both voluntary GHG reporters as well as those subject to specific jurisdictional requirements.

Under longstanding financial reporting principles, materiality assessments require consideration of quantitative and qualitative factors in the context of the needs of investors and other relevant circumstances. Some sustainability standards and requirements also focus on investors while others incorporate the concept of “double materiality,” expanding to other stakeholders.

We recommend that GHG Protocol establish a framework outlining the relevant factors to be considered in the assessment of materiality for emissions reporting, such as the degree of precision attainable with respect to calculating emissions and the risk of material misstatement. These factors should consider the potential users of the information and the relevant stakeholders.

Offsets

Many companies incorporate the use of carbon offsets in their GHG emissions reduction strategies in an effort to reduce their reported emissions. We strongly support the Corporate Standard’s current requirement that GHG emissions must be reported on a gross basis. Given the proliferation of various carbon offsets, however, we believe GHG Protocol should strengthen its guidance in this area as follows:

- Gross presentation — the guidance related to gross presentation of GHG emissions should be included as a reporting requirement, rather than a footnote as currently written.
- Robust disclosure — required disclosures should include the source of the carbon offset, how offsets are used in the company’s emissions reductions strategies, and information about the quality of the offset, including the applicable verifier or registry.
- Quality criteria — GHG Protocol should establish minimum quality criteria for purchased offsets that are aligned with those established for energy attribute certificates (EACs).
- Vintage and retirement — we believe GHG Protocol should establish guidelines around the vintage of offsets that may be claimed as well as requirements for their timely retirement (e.g., within two months of the end of the related reporting period).

These recommendations would improve the quality of information reported, enhancing comparability and ensuring transparent and robust disclosure of a company’s carbon impact, irrespective of its use of carbon offsets and similar instruments.

30. *Are there existing resources, tools, or databases developed by other organizations (which are in conformance with the Corporate Standard) that you would suggest that GHG Protocol references to support companies in applying the Corporate Standard?*

We do not recommend that GHG Protocol make reference to any resources, tools, or databases developed by other organizations. We believe it is critical that the GHG Protocol’s standards stand alone to provide a complete source of guidance on greenhouse gas emissions reporting.

We have observed that certain sectors are developing supplemental guidance outside the auspices of GHG Protocol. Leveraging the work of other organizations may have been an effective strategy for GHG Protocol as it sought to expand its available guidance. Ultimately, however, to be the premier standard setter for greenhouse gas emissions reporting, we believe it is important for GHG Protocol to control the development of its standards, thus potentially avoiding bias that may be inherent in

standards developed by industry groups or others interested in promulgating a specific viewpoint. Ensuring all standards governing emissions reported in accordance with the GHG Protocol's standards and guidance are subject to its own due process would ensure that its suite of standards are robust, independent, and fit for purpose across a broad spectrum of users.

31. *Are there new resources, tools, or databases that you think need to be developed to support companies in applying the Corporate Standard?*

One of the challenges we observe in applying the GHG Protocol is difficulty in determining the applicable requirements and understanding how the various standards and guidance interact with each other. We believe that restructuring the full suite of standards and guidance to enhance their usefulness and effectiveness should be one of the GHG Protocol's highest priorities. Please refer to the "Organization of the reporting standards" section of our response to question 4 in the related [governance matters template](#), for our detailed recommendations.

QUESTIONS FOR PROGRAMS/POLICYMAKERS

(This section is intended for programs, initiatives, policymakers, or regulators using GHG Protocol standards)

32. Are you applying the Corporate Standard in the context of your program? If so, please explain.

Not applicable.

33. What is your experience applying the standard? Does your program implement all the requirements of the standard? If not, why not? Are there any gaps or problems you have faced in implementing the standard? Are changes to the standard and/or support on the use of the standard needed from a programmatic perspective?

Not applicable.