

CHAPTER 20.

Reporting

This chapter provides requirements and guidance on reporting. The GHG inventory is one required element that must be disclosed in the GHG report. Reporting requirements for each accounting category and topic are found in the other chapters of this Standard. A checklist of all reporting requirements can be found on the GHG Protocol’s website.

20.1 Overview

Once the inventory is compiled, a company is required to publicly report the information specified in the reporting requirements included in this *Standard* for the GHG report to be in conformance with this *Standard*.

Companies are required to report results for all required accounting categories (see Requirement 4).

Reporting CO₂ removals is optional, but if removals are reported, then all reporting requirements related to removals must be met (see “Reporting requirements for removals,” “Reporting requirements for land management CO₂ removals,” and “Reporting requirements for geologic storage” in Section [X].2.2 of Chapters 12, 13, and 14, respectively).

Companies are required to follow disaggregated reporting requirements by accounting subcategory, for scope 1, scope 2 (if relevant), and scope 3 for each scope 3 category, to ensure transparency in the reporting (see Requirement 31). Each of these accounting categories (and subcategories) must be separately reported. In addition, accounting categories included under “additional accounting categories” (see Chapter 4) must be separately reported, which means they cannot be aggregated with emissions and removals and reported within the physical GHG inventory (e.g., companies cannot aggregate gross CO₂ fluxes with emissions and report them in the physical GHG inventory).

If companies additionally choose to report aggregate numbers across accounting categories, they must follow the “additional reporting of aggregate values” requirement (see Requirement 32) and report the “total emissions” category separately from the physical GHG inventory under “additional accounting categories.”

20.2 Requirements

The reporting requirement in Chapter 6 sets forth the core reporting requirements. The reporting requirements specific to each accounting category and topic are included in Section [X].2.2 of each corresponding chapter of this *Standard* (e.g., Section 7.2.2 sets forth the reporting requirements for land use change emissions, further detailing the information required in Chapter 6). If Part 3 of this *Standard* is applicable, additional reporting requirements are included in the corresponding chapters.



REQUIREMENT 31:

Disaggregated reporting

Companies **shall** disaggregate the GHG report into:

- **Emissions disaggregated by accounting category and subcategory:**
 - “Fossil fuel and industrial emissions,” disaggregated by scope 1, scope 2, and scope 3 emissions for each scope 3 category; and
 - “Land emissions,” disaggregated by “land use change emissions,” “land management net biogenic CO₂ emissions” and “land management production emissions,” and “biogenic product emissions” (following Requirement 17), with each subcategory disaggregated by scope 1, and scope 3 emissions for each scope 3 category.
- **For each accounting subcategory, emissions disaggregated by GHG:**
 - For scope 1 and scope 2 emissions, total emissions disaggregated by each GHG (CO₂, CH₄, N₂O, HFCs, PFCs, SF₆, NF₃) in tonnes and in tonnes of CO₂ equivalent.
 - For each scope 3 category, total emissions of GHGs (CO₂, CH₄, N₂O, HFCs, PFCs, SF₆, NF₃) in tonnes of CO₂ equivalent.
- **Gross CO₂ fluxes disaggregated by accounting subcategory:**
 - “Biogenic product CO₂ emissions” (required, following Requirement 17), disaggregated by scope 1, scope 2, and scope 3 gross emissions for each scope 3 category.
 - “Gross biogenic land CO₂ emissions” (optional), disaggregated by scope 1, and scope 3 gross emissions for each scope 3 category.
 - “Gross biogenic land CO₂ removals” (optional), disaggregated by scope 1, and scope 3 gross emissions for each scope 3 category.
 - “TCDR-based product CO₂ emissions” (required, if applicable), disaggregated by scope 1, scope 2, and scope 3 gross emissions for each scope 3 category.
 - “Gross CO₂ emissions from geologic storage” (required, if applicable), disaggregated by scope 1, and scope 3 gross emissions for each scope 3 category.
 - “Gross technological CO₂ removals” (optional, if applicable), disaggregated by scope 1, and scope 3 gross removals for each scope 3 category.

Additionally, companies **shall** disclose the following information in their GHG report:

- **Justification for not reporting disaggregated data:** If emissions of a given accounting category comprise a small share of the total GHG inventory (e.g., in the 0 to 20th percentile of total GHG emissions) and disaggregated data are not available for that category, companies **may** use aggregated data and report aggregate emissions by scope 1, scope 2 (if relevant), and scope 3 emissions for each scope 3 category without disaggregated accounting subcategories. In such a case, companies **shall** disclose and justify the use of aggregated data (see “Reporting GHG inventory data and methods” in Section 6.2.2).

If companies account for and report removals in their GHG inventory, they **shall** report:

- **“Removals” separately from “emissions,” disaggregated by accounting subcategory:**
 - “Land management CO₂ removals,” disaggregated by scope 1, and scope 3 removals for each scope 3 category.

- “Removals with geologic storage,” disaggregated by scope 1, and scope 3 removals for each scope 3 category.. Companies **should** disaggregate further into: “captured biogenic CO₂ with geologic storage” and “technological CO₂ removals with geologic storage.”

REQUIREMENT 32:

Additional reporting of aggregate values

Disaggregated reporting (Requirement 31) is required for all companies. If companies additionally choose to report a single value that aggregates emissions or nets emissions and removals associated with agricultural land use, this value **shall** include the following accounting categories (and **may** include land management CO₂ removals or captured biogenic CO₂ with geologic storage if reporting a net value):

- Fossil fuel and industrial emissions
- Land emissions
 - Land use change emissions
 - Land management net biogenic CO₂ emissions
 - Land management production emissions
 - Biogenic product emissions (following Requirement 17)
- Land carbon leakage¹

In such a case, companies **shall** report “total emissions” as an additional accounting category separately from the physical GHG inventory under “additional accounting categories,” organized by scope 1, scope 2, and scope 3 for each scope 3 category.

20.3 Recommendations and options

Disaggregated reporting recommendations

In addition to the required disaggregated reporting by accounting subcategory in Requirement 31, if data allow, companies **should** provide the following additional disaggregated reporting of accounting subcategories:

- **Fossil fuel and industrial emissions by accounting subcategories:** “Fossil and industrial emissions” **should** be separately reported by stationary combustion, mobile combustion, process, and fugitive emissions, by scope 1, scope 2, scope 3 emissions for each scope 3 category.
- **Land emissions by product type:** “Land use change emissions,” “land management net CO₂ emissions,” and “land management production emissions” **should** be separately reported by product type (e.g., crops, animal products, forestry products, bioenergy feedstock, etc.).
- **Scope 3 emissions by GHG:** For each scope 3 category, emissions of GHGs **should** be separately reported by each individual greenhouse gas (CO₂, CH₄, N₂O, HFCs, PFCs, SF₆, NF₃), in tonnes and in tonnes of CO₂ equivalent.
- Additional recommendations provided within the *Scope 3 Standard*.

Avoiding double counting between leakage and sLUC emissions

If companies choose to aggregate land use change–related accounting categories (e.g., in the “Total emissions” category; see Requirement 32), accounting for land carbon leakage has the potential to result in double counting emissions in cases where the corporate action that caused leakage is also associated with LUC emissions estimated at broader spatial scales using proxy data (i.e., statistical LUC emissions; see Chapter 7). In such cases, companies **should** deduct any double-counted statistical LUC emissions from the “total emissions” accounting category. Double counting is not an issue when adding land carbon leakage and LUC emissions estimated using dLUC metrics.

Recommended additional reporting information

Companies **should** report additional information in their GHG report that is not otherwise recommended by this *Standard* if that information is relevant and applicable to the reporting company and helps to substantiate or interpret other required reporting information. Some additional reporting recommendations are found in Table 20.2 in the *Guidance*.

Sample reporting template

The GHG Protocol provides a sample GHG inventory reporting template to help companies apply the *Land Sector and Removals Standard*. Refer to the GHG Protocol’s website for the sample reporting template and additional instructions for how to use the template.

Follow GHG programs and regulations on aggregating accounting categories

Companies **should** follow GHG programs and regulations to determine whether and how to aggregate accounting categories (see Box 17.1 for further discussion). If companies do not participate in GHG programs, they must follow Requirements 31 and 32.

Report format

For public reporting, companies **may** produce a single public report that contains all the required reporting information (as well as all relevant optional reporting information). Alternatively, companies **may** produce a summary of the public report and a full public report that contains all the required information, with a link or reference in the summary report to the publicly available full report.

Additional reporting information

A GHG report **may** also include additional metrics such as performance indicators, intensity ratios, and progress in relation to targets, if relevant and applicable to the reporting company.

Option to report annual changes in the GHG inventory

GHG inventories report the annual absolute GHG emissions, removals, and other metrics related to a company’s operations and value chain. Companies tracking progress toward a target **may** report annual changes in emissions, removals, and other metrics by scope 1, scope 2, and scope 3 for each scope 3 category.

If a company reports changes in one accounting category, it **should** report changes in all accounting categories. For example, if a company reports changes in emissions or removals, it **should** also report changes in land use, land carbon leakage, and other additional accounting categories.

20.4 Guidance on the requirements and recommendations

20.4.1 Disaggregated reporting

The GHG Protocol uses the scopes framework to define activities in relation to a company's organizational boundary, i.e., whether an activity falls within a company's organizational boundary (i.e., direct, scope 1) or in the value chain outside a company's organizational boundary (i.e., indirect, scope 3). The scopes framework defines only one dimension of the information in the GHG inventory.

The GHG Protocol also defines the accounting categories included in an inventory boundary, how the categories are accounted for, and which are required or optional to report. The GHG Protocol requires separate reporting by accounting category and provides a disaggregated reporting framework to ensure all relevant accounting subcategories are transparently reported (see Requirement 31).

The inventory boundary defines whether an activity or accounting category is included within a company's GHG inventory. The inventory boundary includes the physical GHG inventory and additional accounting categories (see Figures 4.1 and 4.2). All accounting categories in the inventory boundary should be managed and tracked in relation to targets.

Decisions about whether or how to aggregate or net accounting categories and subcategories can be made by policymakers, regulators, and GHG programs as a policy decision. Target-setting programs may choose to allow categories to be added within a given target boundary to meet specific program objectives.



Historically, the GHG Protocol has allowed flexibility for companies or GHG programs to define which inventory categories are included within the “target boundary,” while providing requirements on what must be included in the “inventory boundary.” Programs such as the Science Based Targets initiative (SBTi) set rules for which categories must be included in the target boundary. The GHG Protocol provides recommendations and guidance, as well as limited requirements, on what should be included in the target boundary (see Chapter 17).

Some inventory categories are conceptually additive: in these cases, disaggregation is required to provide transparency on categories that have unique characteristics and provide unique information. Other inventory categories are not conceptually additive for accounting reasons. For example, some categories present conceptual double counting between them, use different accounting methods, are reported using different units, or are otherwise non-equivalent. For this reason, this *Standard* includes requirements for the separate and disaggregated reporting (see Requirement 31) of specific inventory categories for reporting or target setting.

If companies additionally choose to aggregate and report accounting categories, they must follow Requirement 32 and should follow the recommendations in Section 20.4.2.

Justification for not reporting disaggregated data

When compiling the GHG inventory, data may be available to complete the accounting for emissions attributable to certain activities in a company’s operations or value chain but that data may not be available in a format that allows for the disaggregated reporting of emissions by accounting subcategories, as set forth in Requirement 31. For example, a company may have access to a complete life cycle emission factor but applying that factor does not allow for separate reporting of emission sources in the product life cycle.

If the emissions in an accounting category, for scope 1, scope 2, a given scope 3 category, or product type within a given scope 3 category, comprise a small share of the total GHG inventory, and disaggregated data are not available for that accounting category, companies may use aggregated data and report aggregate emissions by scope 1, scope 2, or a given scope 3 category at the accounting category level without disaggregated reporting across accounting subcategories. For example, if a company sources a small quantity of tomatoes (whose contribution to the company’s overall emissions in the GHG inventory is <1%), and available data does not allow for the disaggregated reporting by land use change and land management emissions subcategories attributable to the life cycle of tomatoes, the company may report aggregate land emissions for tomatoes in scope 3, category 1, and not report the disaggregated scope 3, category 1 land use change emissions, land management net biogenic CO₂ emissions and land management production emissions for tomatoes. In such a case, companies must disclose and justify the use of aggregated data, following the relevant reporting requirement in Section 6.2.2.

20.4.2 Additional reporting of aggregate values

Disaggregated reporting (Requirement 31) is required for all companies. In practice, however, many companies may choose to additionally report a value (or values) that aggregates emissions or nets emissions and removals associated with agricultural land use. For transparency, as set forth in Requirement 32, if a company additionally chooses to report a single value that aggregates emissions (e.g., fossil fuel and industrial emissions and land emissions), nets emissions and removals associated with agricultural land use (e.g., nets land emissions with land management CO₂ removals, or nets emissions with captured biogenic CO₂ with geologic storage), they are required to include and report the “total emissions” accounting category within the relevant scope(s). The “total emissions” category is reported outside the physical GHG inventory under “additional accounting categories.”

The “total emissions” accounting category sums “fossil fuel and industrial emissions,” “land emissions” (including all corresponding subcategories), and “land carbon leakage,” if triggered (see Requirement 13). Table 20.1 provides an example of how a company that sources 100 tonnes of maize ethanol in the reporting year would

estimate the “total emissions” category. In this scenario, “total emissions” is calculated as the sum of fossil fuel and industrial emissions, land emissions, and land carbon leakage attributable to the purchase of crop-based biofuels in the reporting year (see row i in Table 20.1). When calculating and reporting the “total emissions” accounting category, companies in some instances may need to avoid the double counting of statistical land use change (sLUC) emissions and land carbon leakage. Further guidance on avoiding this type of double counting is provided in the following section.

Table 20.1 Example of calculation and reporting of the "total emissions" accounting category

	Scope	Scope 3	
Emissions (tCO₂e)	(a) Fossil fuel and industrial emissions	55	
	Land emissions	(b) Land use change emissions (sLUC)	60
		(c) Land management net biogenic CO ₂ emissions	0
		(d) Land management production emissions	22
		(e) Biogenic product emissions (CH ₄ and N ₂ O only)	0.02
Removals (tCO₂e)	Removals	(f) Land management CO ₂ removals	0
Additional accounting categories	Land use	(g) Land occupation (ha)	30
		(h) Land carbon leakage (tCO ₂ e)	711
	(i) Total emissions (tCO ₂ e) h = a + b + c + d + e + h - f		848.02
	(j) Adjusted total emissions (sLUC emissions deducted, tCO ₂ e) j = i - b		788.02

Note: Only a subset of accounting categories is shown here for simplicity. Emissions, removals, and other metric quantities displayed in the table are for illustrative purposes only.

Avoiding double counting between leakage and sLUC emissions

If land carbon leakage accounting is triggered and reported, companies should be careful to avoid double counting land use change emissions and land carbon leakage when reporting the “total emissions” accounting category or other additional aggregate values (see “Avoiding double counting between leakage and sLUC emissions” in Section 20.3).

Double counting can occur when aggregating scope 3 land carbon leakage and scope 3 land use change emissions estimated using the statistical land use change (sLUC) calculation approach (see Chapter 7 for details). Building on the example in Table 20.1, the reporting company that sources maize ethanol in the reporting year has traceability for the maize feedstocks attributable to that purchased ethanol to a national jurisdiction of origin. The company uses the sLUC calculation approach to account for LUC emissions attributable to the production of that maize within the corresponding national jurisdiction scope 3 spatial boundary. To account for land carbon leakage attributable to the purchase of that maize ethanol, the company sets a global land carbon leakage boundary (see Section 8.4.3 for details). The company reports all disaggregated accounting categories (Requirement 31) and chooses to report an additional aggregate emissions value. To ensure transparency and to satisfy Requirement



32, the company also reports the “total emissions” accounting category, comprised of the accounting categories set forth in Requirement 32.

When reporting the “total emissions” category, aggregating land use change emissions calculated using the sLUC calculation approach and land carbon leakage may result in double counting, as the corresponding scope 3 spatial boundary and land carbon leakage boundary may capture some of the same land emissions. Therefore, aggregating LUC emissions and land carbon leakage in the “total emissions” category in this instance would result in double counting. In this case, the reporting company should deduct the scope 3 sLUC emissions from the “total emissions” category. Using the sample scenario in Table 20.1, a company would subtract land use change emissions calculated using the sLUC

calculation approach (row b) from total emissions (row i) and report an “adjusted total emissions” value (row j). For transparency, companies should report the quantity of deducted sLUC emissions.

In contrast, if the reporting company in this scenario instead had traceability for the maize biofuel feedstocks to a sourcing region and used the direct land use change (dLUC) calculation approach to account for land use change emissions within the corresponding sourcing region-level scope 3 spatial boundary, and meanwhile continued to apply a global land carbon leakage boundary, adding LUC emissions and land carbon leakage together in the total emissions category would not result in double counting. Deducting land use change emissions from “total emissions” and reporting the “adjusted total emissions” category in this instance would not be necessary.

20.4.3 GHG report

A GHG report requires additional information related to the methods, data, and assumptions used to compile the GHG inventory. This secondary level of information is required for transparency purposes and could be referred to as “outside the GHG inventory” or “outside the GHG inventory, but within the GHG report,” in the sense that it is information required to substantiate the primary information (i.e., inventory metrics) reported in the GHG inventory. Companies must also disclose if the GHG inventory was third-party assured (see Section 19.2).

20.4.4 Recommended additional reporting information

Companies ensure transparent and credible public reporting by following the reporting requirements in the *Standard*, which are also compiled into a complete list on the GHG Protocol website.

Recommended additional reporting information is provided below, in Table 20.2. Companies should refer to the reporting guidance in Chapter 11 in the *Scope 3 Standard* and Chapter 9 in the *Corporate Standard* when reporting recommended or optional information.

The appropriate level of inclusion and reporting of optional information can be determined by the objectives and intended audience of the GHG report. Companies should strive to create a report that is as relevant, transparent, accurate, consistent, complete, and conservative as possible. For national or voluntary GHG programs, or for internal management purposes, reporting requirements may vary.

Table 20.2 Recommended additional reporting information in this *Guidance*

Topic	Recommended reporting information
Disaggregated category information that adds relevance and transparency	<ul style="list-style-type: none"> • Scope 3 emissions disaggregated by each GHG • Fossil fuel and industrial emissions, disaggregated by stationary combustion, mobile combustion, process, and fugitive emissions, by scope 1, scope 2, and scope 3 emissions for each scope 3 category • Land use change emissions and land management emissions, disaggregated by product category • Historic scope 3 emissions that have previously occurred, reported separately from future scope 3 emissions expected to occur, as a result of the reporting company’s activities in the reporting year (e.g., from waste generated in operations, use of sold products, end-of-life treatment of sold products) • Emissions, removals, and other accounting categories further disaggregated where this adds relevance and transparency (e.g., by business unit, facility, country, source type, activity type, etc.) • Emissions, removals, and other accounting categories further disaggregated within each scope 3 category where this adds relevance and transparency (e.g., reporting by different types of purchased materials within category 1, or different types of sold products within category 1)
Additional information beyond the categories included in the GHG inventory	<ul style="list-style-type: none"> • Emissions from scope 3 activities not included in the list of scope 3 categories (e.g., transportation of attendees to conferences or events), reported separately (e.g., in an “other” scope 3 category) • Emissions of any GHGs other than CO₂, CH₄, N₂O, HFCs, PFCs, SF₆, or NF₃, whose 100-year GWP values have been identified by the IPCC, to the extent they are emitted in the company’s operations or value chain (e.g., CFCs, HCFCs, NO_x, etc.), and a list of any additional GHGs included in the inventory • GHG emissions data for all years between the base year and the reporting year (including details of and reasons for recalculations, if appropriate) • Total carbon stock or CO₂ stored in carbon pools, separately by carbon pool category and separately from the scopes, in the reporting year, in the base year/period, and in all years between the base year/period and the reporting year • For scope 1 and scope 3 removals, information on the expected duration of carbon storage (expected length of time the removals are expected to remain stored in carbon pools) • If relevant, non-CO₂ GHG removals, reported separately from the physical GHG inventory • If relevant, CO₂ removals stored in ocean-based or freshwater-based carbon pools, reported separately from the physical GHG inventory • Relevant performance indicators and intensity ratios • Qualitative information about emission sources not quantified
Additional information related to uncertainty and data quality	<ul style="list-style-type: none"> • Quantitative assessments of data quality for emissions and removals, in addition to the data-quality requirements for removals (see Requirement 21) • Information on uncertainty of emissions reported in the GHG inventory (e.g., information on the causes and magnitude of uncertainties in emission estimates) • Description of the policies and procedures to improve inventory quality over time • Additional explanations to provide context for the data
Additional information to support the GHG report	<ul style="list-style-type: none"> • Information on the company’s GHG management and reduction activities, including reduction targets, supplier engagement strategies, product GHG reduction initiatives, etc. • Information on supplier/partner engagement and performance • Information on product performance • A description of performance measured against internal and external benchmarks • Information on any contractual provisions addressing GHG-related risks or obligations

Endnotes

1 If regulations or GHG programs separately specify how the leakage category is applied for the purpose of their regulation or program, covered companies may report a parallel “total emissions” quantity in addition to carbon opportunity cost-based values.

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